The effects of changes in family policy on gender differences in employment: a quantitative comparative investigation of 20 OECD countries over the years 1985-2010

Christopher Clarke

PhD
University of York
Social Policy and Social Work
January 2015

Abstract

This thesis provides a quantitative comparative investigation into the effects of changes in family policy on gender differences in employment outcomes. Existing comparative research offers a sophisticated account of the influence of family policy on gender equality in employment – certain leave and childcare policies are found to promote female economic activity, especially amongst less educated women, but may at the same time also damage women's occupational attainment with harmful effects that appear particularly severe for women with high levels of education. Yet, this existing literature does suffer limitations, particularly in the extent to which many studies rely on cross-sectional data only. The contribution of this thesis is to test whether established associations hold when looking at changes within countries over time. It examines how changes in family policies affect measures of gender differences in economic activity and occupational attainment, both at the overall level and when data are broken down by levels of education.

Data are measured at the country-level and take time-series cross-section form, with a sample that stretches across 20 OECD countries and the years 1985-2010. Analysis is conducted primarily through fixed effects multiple linear regression. Results suggest that increases in certain leave and childcare policies may help close gender gaps in labour force participation rates, particularly but not exclusively amongst men and women with low education. Simultaneously, increases in leave entitlements for mothers may moderate gains in women's relative access to managerial positions and top quintile wages. Notably, though, the damaging effects of changes in leave do not appear to apply to highly educated women. Thus, results are consistent with the broader argument that family policies may have contradictory effects on gender differences in employment, but provide less support for the more recent suggestion that any such 'policy paradox' operates neatly along class lines.

Contents

List of tables

Appendix D

Appendix E

Appendix F

List of figures

Chapter 2

Chapter 4

Chapter 5

Chapter 6

Chapter 7

Acknowledgements

First and foremost, I would like to offer my sincerest thanks to Naomi and Stefan. I am fortunate to have been placed with two such dedicated and supportive supervisors, and I have learned so much from them both. Without their wisdom, advice and endless patience I would never have got this far.

I would like to thank the ERSC for financial support, and all at SPSW for providing me with the opportunity to study in the Department. Special thanks are due to Antonios, Chris, Caz, Dan, John, Mary, Richard and Stuart for all they have taught me, and also to Ange, Jane, Sam and Sharon for always being so helpful throughout the process. Huge thanks also to Dom for his advice and guidance over the past couple of years.

A debt of gratitude is owed to friends and family. Thanks to my fellow students – Abby, Adam, Amy, Charlotte, Gill, Hannah, Harriet, Katie, Sarah B-W and Sarah C – particularly for their tolerance of my periodic work-related crises. Special thanks also to Alex, Annika, Drew, Ed, Fripps, Joe, Jonnie, Lewis, Si, Tommy and Will, all of whom are owed several pints each. Needless to say, endless thanks are due to Mum and Dad for everything they have ever done for me.

Finally, to Ruth, I'm not sure there is much I could say that would do justice to all your love and support over the past few years. Thank you for always being there, and for never losing your sense of humour despite all the self-sacrifice. You have made our time in York special and I owe you everything.

Author's declaration

The work presented in this thesis is my own and has not been submitted for any other award at the University of York or any other institution. All sources are acknowledged as references.

Chapter 1. Introduction

The role played by family policies in reducing or reinforcing gendered labour market outcomes has attracted much attention over the past two decades or so. Although the term 'family policy' is slightly fuzzy and not firmly defined (Thévenon, 2011: 60), research proceeds under the premise that state legislated policies – including but not limited to parental leave entitlements, public childcare provisions and family-related tax and transfer policies – can and do influence gender differences in employment in various ways. Particularly important here has been research that adopts a comparative perspective on links between family policy and gender equality in employment. These studies, which take advantage of cross-national or temporal variations in both policy provision and employment outcomes, have generated numerous insights into how family policy may impact on gender differences in employment outcomes.

First off, a substantial body of comparative research finds that family policies influence gender differences in economic activity and market participation (e.g. Winegarden and Bracy, 1995; Gornick et al, 1998; Ruhm, 1998; Jaumotte, 2003; Ferrarini, 2006; Nieuwenhuis et al, 2012; Korpi et al, 2013; Thévenon, 2013). Family policies that are aimed at encouraging female employment and 'dual earning' within couples – such as public childcare provisions and certain parental leave entitlements – are generally found to promote equal market participation (Pettit and Hook, 2005; Mandel and Semyonov, 2006; Misra et al, 2011; Akgunduz and Plantenga, 2012; Thévenon and Solaz, 2013). Conversely, policies that are more supportive of the traditional nuclear family unit – such as family-related tax and transfer policies – are often found to constrain female employment and inflate gender differences in economic activity (Korpi, 2000; Jaumotte, 2003; Thévenon, 2013; Korpi et al, 2013). Notably, more recent comparative research suggests that the impact of policy is likely to differ across socio-economic groups – for example, 'dual earner' family policies appear particularly effective at promoting activity amongst women with lower levels of education (Mandel and Shalev, 2009; Mandel, 2009; Korpi et al, 2013). Nonetheless, associations remain apparent at the aggregate or overall level.

Family policies may also however affect employment in ways that stretch beyond labour market activity. In particular, several authors argue that certain family policies play at least some role in the reinforcement of gender job segregation and 'glass ceilings' on women's careers (Mandel and Semyonov, 2005; Mandel and Semyonov, 2006; Misra et al,

2008; Mandel, 2009; Mandel, 2011; Mandel, 2012). Most important here are maternal leave programmes, which may inadvertently inflate gender differences in earnings and harden obstacles to top positions for women by weakening female skills and experience and by encouraging employer discrimination (Ruhm, 1998; Blau et al, 2001; Mandel and Semyonov, 2006). Importantly, the severity of these adverse 'trade off' effects is also likely to vary across groups – in this case, though, it is the careers of highly educated women that appear most at risk from any damaging effects attached to family policies (Shalev, 2008; Mandel and Shalev, 2009; Mandel, 2011; Mandel, 2012). Taken together, the broad suggestion from much of the comparative literature is that family policy – in a general sense – produces some form of 'policy paradox' that operates mostly to the benefit of less educated women at the expense of the careers of their highly educated counterparts (Shalev, 2008; Mandel and Shalev, 2009; Mandel, 2011; Mandel, 2012).

This broad argument is compelling and carries considerable implications for policy provision – in effect, it suggests that governments need to balance the competing interests of different groups of women against one another. However, the empirical evidence upon which it and much of the wider comparative family policy literature is based does suffer from limitations. In particular, much of the empirical literature is cross-sectional in design with associations based entirely on differences between countries in family policy provision and gendered labour market outcomes. This is problematic because cross-sectional associations are particularly vulnerable to bias from any 'third' factors omitted from the analysis, and because the static relations produced may say little about the impact of a within-country *change* in policy on employment outcomes (Frees, 2004; Dougherty, 2006; Wilson and Butler, 2007; Bartels, 2008; Fairbrother, 2014). Thus, there is a danger that studies based on cross-sectional data alone may produce inferences that are misleading or of limited practical use.

One possible solution to these problems is to stretch comparative data across time, adding a time-series dimension to the existing cross-sectional data. This helps reduce the risk of omitted variable bias, as repeatedly observing the same set of countries over time enables analyses to control for country 'individualness' (Hsiao, 2003; Frees, 2004; Dougherty, 2006), and allows for the examination of how *changes* in policy impact on gender differences in employment (Dougherty, 2006; Wooldridge, 2010). A limited number of comparative family policy studies have begun to do just this (Winegarden and Bracy, 1995; Ruhm, 1998; Jaumotte, 2003; Ferrarini, 2006; Akgunduz and Plantenga, 2012; Nieuwenhuis et al, 2012; Thévenon, 2013; Thévenon and Solaz, 2013; Nieuwenhuis, 2014). However, this emerging 'over time' literature concentrates almost entirely on the

impact of changes in policy on gender gaps in general labour market activity. Only a few studies cover links between family policy and women's careers and occupational attainment over time (Ruhm, 1998; Akgunduz and Plantenga, 2012; Thévenon and Solaz, 2013), while the impact of changes in policy on outcomes across levels of education is severely under-researched. As a result, much of the evidence base for any 'family policy paradox' and, more so, any inter-class policy trade off continues to rely mostly on cross-sectional data and between-country associations only.

Aims and objectives of the thesis

The aim of this thesis is to provide an empirical investigation into relations between changes over time in family policy provision and developments in various areas of gender equality in employment. First, it looks to examine links between changes in family policy and gender differences in employment outcomes at the aggregate or overall level. This includes relations between policy change and gender differences in the depth and extent of economic activity – termed here as *gender equality in labour market activity* – and links with changes in both women's relative career attainment and the extent to which men and women work in different areas of the labour market – termed throughout the thesis as *gender job segregation and equality in occupational attainment.* Second, it looks to explore whether these relations vary across individuals with differing levels of education. These research aims can be summarised by the following three research questions:

Q1. How do within-country changes in family policy relate to within-country changes in gender equality in labour market activity?

Q2. How do within-country changes in family policy relate to within-country changes in gender job segregation and gender equality in occupational attainment?

Q3. Do relations between within-country changes in family policy and within-country changes in the various areas of gender equality in employment differ with levels of education?

As noted above, a limited number of comparative studies already cover relations between changes over time in family policy and gender equality in economic activity. Thus, to some degree, providing answers to the first research question represents some form of replication study. However, as it turns out many of these existing 'over time' studies may suffer from statistical issues – such as a lack of correction for serially correlated regression

errors – that are known to increase the likelihood of overly optimistic or misleading results. It is then worthwhile re-examining links between changes in family policy and gender differences in economic activity with slightly different measures and a method that provides a somewhat 'harder' test of relations.

The second and third research questions address clearer gaps in the empirical literature. Answering the former means building and expanding upon the few comparative studies that briefly touch on links between policy change and women's occupational outcomes. Providing answers to the latter, meanwhile, means going at least some way towards tackling the almost complete absence of comparative 'over time' research that examines the differential effects of changes in family policy on employment outcomes across levels of education.

In all three cases the broader intention is to contribute to knowledge on how changes in family policy provision shape developments in men and women's differential experiences of the labour market. This is important in any case – given the numerous social and economic costs associated with gender differences in employment outcomes (Fraser, 1994; Young et al, 1994; Lister, 1997; Blau et al, 2001; Rubery et al, 2003; OECD, 2007), knowing whether and in what way state legislated policies affect gender equality in employment may be central to isolating the best route towards a fairer and more efficient labour market. However, the need to understand the effects of changes in family policy becomes particularly pressing in the context of a possible 'policy paradox', and in particular some form of inter-class policy trade off. If, as cross-sectional research suggests, introducing or extending certain family policies actively damages the careers of women who otherwise stand to gain little from the provision, decisions around which tools are most appropriate for a government seeking to influence gendered labour market outcomes become increasingly complicated, both politically (Shalev, 2008) and morally.

General approach and research strategy

The approach of the empirical investigation is quantitative and large-N comparative, with associations between changes in family policy and employment outcomes examined primarily through statistical analysis. The study is conducted at the country level, and is based on a set of secondary macro-level policy and employment data that stretch across a sample of twenty OECD countries and the years 1985-2010. Observing multiple countries at multiple points in time in this manner produces what is often called a pooled time-series cross-section dataset, and means that the analysis can make use of variations across

the sample countries in within-country changes in both family policy provision and employment outcomes. In other words, the thesis draws on the differential experience of the twenty sample countries over the years between 1985 and 2010 as a means of understanding how changes in family policy impact on gendered labour market outcomes.

The thesis uses Korpi's (2000) conception of family policy types as its broad theoretical framework, although contributions and insights from number of authors – especially Hadas Mandel and colleagues – are also taken into account. It measures family policies through several quantitative indicators organised loosely around Korpi's (2000) policy types – that is, around 'dual earner' and 'general family support' types of family policy – and employment outcomes through a number of quantitative country-level indicators that reflect the different aspects of equality covered by the thesis' three research questions. Data on family policies are drawn from numerous sources, including cross-national databases such as Gauthier's Comparative Family Policy Database (2011a), MISSOC (2013), and the OECD Family Database (2013c), plus country-specific sources and journal articles. Data on employment outcomes come mostly from Eurostat Labour Market Statistics (2013), the ILO LABORSTA Database (2014), the Luxembourg Income Study Database (2014) and the OECD Employment Database (2013a).

The primary method of analysis used throughout the thesis is fixed effects multiple linear regression, a form of regression analysis that produces estimates based on within-country variation – that is, changes within each country – in the included variables only. This technique is common in the existing 'over time' comparative family policy literature, but does suffer from drawbacks (see Shalev, 2007a). To overcome at least some of the limitations attached to multiple linear regression, the thesis complements its regression analyses with thorough descriptions of trends, changes and developments in the measures of both family policy and employment outcomes. Together, these dual analyses produce a detailed account of how changes in family policy are associated with movements in gender differences in labour market outcomes.

Structure of the thesis

The thesis is structured in a relatively standard 'IMRAD'[1] format. It consists of a literature review, a dedicated methods chapter, four empirical chapters, and a concluding chapter

[1] A mnemonic for 'Introduction, Methods, Results and Discussion', a common format for academic research articles with the first sections or chapters reviewing the literature and covering the methods used, with subsequent sections or chapters detailing the results of the research or analysis, and with the final setions or chapters providing a discussion and conclusion to the article.

that draws together and discusses findings and results.

The thesis proper starts in chapter **2** with a review of comparative family policy research. The primary aim of the chapter is to provide a theoretical and empirical foundation for the thesis, as well as to clarify the rationale for the subsequent empirical investigation. Accordingly, the chapter starts fairly broad with an overview of wider comparative research on links between the state, public policy and gender differences in employment, before narrowing in on the comparative family policy literature specifically. It covers both theoretical and empirical aspects of comparative family policy research in some depth, adds detail to the earlier critique of existing empirical research, and emphasises the need for further investigation into relations between changes in family policy and gender differences in labour market outcomes.

Chapter **3** concentrates on the data, methods and techniques used throughout the thesis. It outlines the size and scope of the study in terms of sample years and countries, details and justifies the data and indicators used to capture both family policy and gender equality in employment, and describes the methods and techniques used to examine links between changes in policy and gender differences in outcomes. This chapter is fairly lengthy as methods chapters go. In large part, this is because the methods used are relatively common across the thesis so are outlined in bulk in chapter **3** at the outset.

Chapter **4** opens the empirical investigation with an examination of changes and developments in family policy across the twenty sample countries and years 1985-2010. It uses fairly simple methods – mainly table and charts – to detail and describe patterns of change both within and across countries, and to highlight any broader developments such as any convergence or divergence in provision. This exercise holds its own value – only a few existing studies examine changes in family policy from a broader, large-N comparative perspective. It also serves a more practical function, however, in that it helps set the policy context for the following analyses of links between changes in policy and gendered labour market outcomes.

Chapters **5**, **6** and **7** form the core of the thesis. Each uses both descriptive and regression methods to examine relations between changes in family policy and gender differences in employment outcomes, with the area of equality covered in each of the three chapters corresponding to the thesis' three research questions. Chapter **5** considers how changes in policy impact on gender equality in labour market activity, and thus looks to provide answers to the thesis' first research question. Chapter **6** concentrates on the second

research question by examining links between changes in family policy and measures of gender job segregation and equality in occupational attainment. Lastly, chapter **7** focuses on relations between policy change and gender differences in both labour market activity and occupational attainment across levels of education. In the process, it looks to answer the thesis' third and final research question – that is, whether relations between changes in policy and gender equality in employment differ with levels of education.

Finally, chapter **8** discusses findings and offers a conclusion to the thesis. It reviews the empirical investigation, highlights any limitations, and synthesises results from across the four empirical chapters. It also outlines any implications emerging from findings for knowledge and understandings of the effects of family policy on gender differences in employment, and looks to tease out any lessons from the thesis for future comparative family policy research.

Chapter 2. Literature review and theoretical and empirical background

Despite decades of effort from women's movements and notwithstanding substantial changes to gender differences in employment outcomes, large disparities persist between male and female experiences of the labour market. Across OECD countries, women are less likely to be employed, are likely to earn less, and are more likely to be found in insecure, low status and reduced hours employment than their male counterparts (Daly, 2000; Gornick and Meyers, 2003; Pettit and Hook, 2009). Even in the most egalitarian labour markets – typically, in the Scandinavian countries – the economic position of women continues to compare unfavourably to that of their male equivalents on a number of measures (Plantenga, 1995; Mandel and Semyonov, 2005; Mandel and Semyonov, 2006; Scott et al, 2008).

From an economic perspective, low female market activity comes with substantial costs in terms of economic performance and the sustainability of social protection programmes (Klasen, 1999; OECD, 2007; Thévenon et al, 2012). Most immediately, assuming no systematic differences in preferences and abilities, the under-utilisation of female human capital represents a misallocation of productive resources and thus prevents the most productive economic outcomes (Dijkstra, 2000; Smith and Bettio, 2008). This is particularly true in many economically advanced nations, where vast expenditures have seen levels of female education equal or surpass that of their male counterparts – among younger cohorts at least (Barro and Lee, 2010) – and where skills 'bottlenecks' could be eased by highly qualified female labour (Smith and Bettio, 2008: 10). Raising female participation may also stimulate economic demand through increases in household purchasing power (Smith and Bettio, 2008: 10), and provide a boost to fiscal contributions that, according to Rubery et al (2003), would more than outweigh costs to the taxpayer of facilitating female labour supply. The latter point is particular relevant, of course, in light of population ageing and the escalating dependency ratios seen throughout OECD countries.

Once inside the labour market, gender job segregation and 'glass ceilings' on women's careers also represent a misallocation of resources (Anker, 2001; 129), again assuming no gender differences in preferences and abilities. Abolishing discrimination- or culture-based gender job segregation and allocating roles according to abilities is likely to produce a substantial one-off gain in gross domestic product (GDP) (Tzannatos, 1999), leading to increases in both female and male wages (Elson, 1999). Greater diversity within the

workplace may also produce further long-run efficiency gains. Several studies (Carter et al, 2007; Campbell and Mínguez-Vera, 2008; Dezso and Ross 2008) argue that women's presence on boards or in senior management positions promotes financial performance – possibly because increasing the variety of viewpoints and experience on boards leads to better decisions, and perhaps also because opening positions to women increases the available talent pool for appointments (Marinova et al, 2010) – while others suggest increasing diversity in the workforce more generally could boost firm performance, particularly for companies in the service sector and especially where the prevailing level of diversity in the company is either very low or very high (see McMahon (2010) for a review).

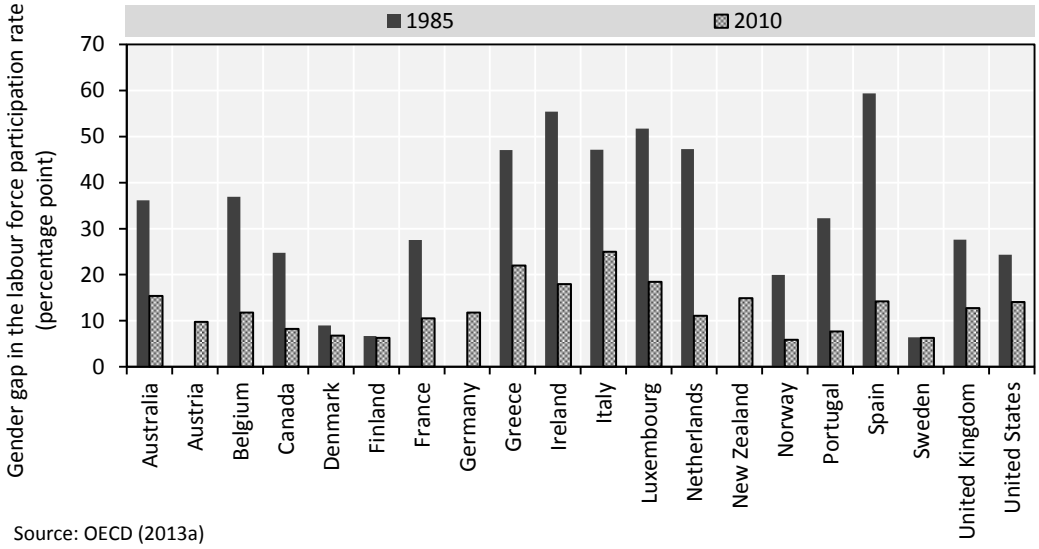
From an equity perspective, meanwhile, labour market disparities between men and women are not only harmful in themselves (Lister, 1997: 126), but also act to structure and reinforce inequality in wider society. Of course, gender equality is a vast and complex concept (see Fraser, 1994). However, achieving gender parity in the labour market is often considered key to attaining equality in other interrelated aspects of social life (Young et al, 1994). Differences in occupational attainment play a decisive role in structuring social relationships, with access to resources and relative incomes in large part determining power and social status and consequently shaping decision-making authority (Huber and Spitze, 1981; Anker, 2001: 130; Blau et al, 2001: 20; Saul, 2003: 15). Okin (1989), for example, suggests that intra-household earnings inequalities between partners are central in shaping power relations, while Warren (2007: 320) states that an independent female wage is crucial for at least equal control over household resources. Financial dependence on a partner, meanwhile, decreases economic security and increases the risk of poverty – particularly 'hidden poverty', whereby economic resources are distributed unequally between partners so as to place one into hardship (Fraser, 1994: 598; Lister, 1997: 136; Pettit and Hook, 2009: 19) – while also leading to exclusion from social rights as modern citizenship is so deeply linked to paid employment (Sainsbury, 1996; Lister, 1997; Orloff, 2002). And unpaid work too, is shaped by workplace inequality, with activity in the paid labour market playing a significant role in the determination of divisions of household labour (Bianchi et al, 2000; Parkman, 2004; Lachance-Grzela and Bouchard, 2010).

None of this is to say that women should seek to directly replicate male patterns of economic activity. Without going into the equality-versus-difference debate (Bock and James, 1992), many authors have argued that economic participation is but one of several differing strategies for achieving gender equity objectives (Wetterberg and Melby, 2008). Rather, what matters from a gender equity perspective is *equality* in employment – which

also includes changes to male employment patterns – as part of a wider shift towards establishing a dual earner–dual carer model as the universal norm (Fraser, 1994: 608-609). The above is also not to say that gender inequality in the labour market is exogenous to wider inequalities, or that it is possible to achieve equality in the workplace without seeking equality elsewhere (Loufti, 2001: 5). Equality in employment and equality in other aspects of society are intertwined and interlinked (Young et al, 1994: 60). Nonetheless, it is apparent that attainment of gender equality in the economic sphere is a principle, necessary, but not sufficient condition for attaining equality between men and women in wider society (Date-Bah, 1997; Loufti, 2001: 5).

Importantly, though, observed labour market inequalities are not homogenous across countries or over time (Daly, 2000; Van Dijk, 2001; Van der Lippe and Van Dijk, 2002; Mandel and Semyonov, 2006). Figure **2.1**, for example, shows the male-to-female gender gap in the labour force participation rate for 20 OECD countries in 1985 and 2010. At both time points, the gap varies considerably between countries. This is particularly so in 1985 – where gender differences range from over 50 percentage points in Greece, Luxembourg and Spain to just under 10 points in Denmark, Finland and Sweden – but is also true in 2010. However, the gap also varies across time, with almost all of the countries shown seeing at least some decrease in the gender gap between 1985 and 2010. Clearly, gender differences in economic activity can and do vary, not just between countries but also within countries over time.

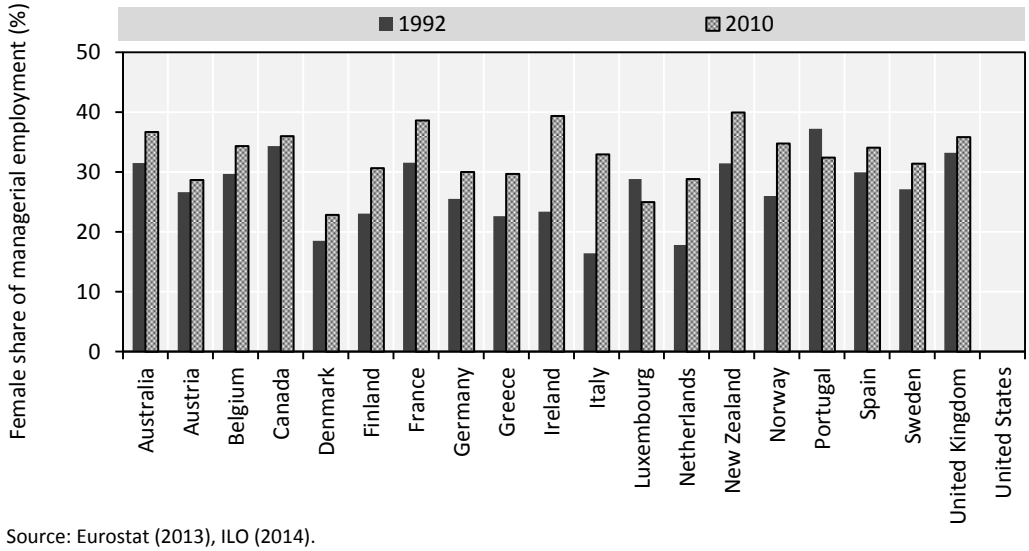
Figure 2.1. **Gender gap in the labour force participation rate (25-54 year olds), 1985 and 2010**



Source: OECD (2013a)

Similarly, differences in the position of men and women inside the labour market also vary both across countries and over time (Plantenga and Tijdens, 1995; Nermo, 2000; Akgunduz and Plantenga, 2012). Figure **2.2**, for instance, shows the female share of managerial employment across 19 OECD countries in 1992 and 2010, or the nearest years available. Like the gender gap in labour participation, women's representation amongst managers differs substantially in the cross-section. In New Zealand in 2008, for example, close to 40% of managers are female, while the equivalent figure in Denmark in 2010 is less than 25%. Also like the gap in participation though, levels of equality are not fixed across time. In all but one of the 19 countries the female share increases between 1992 and 2010, with Ireland seeing a change as large as 15 percentage points.

Figure 2.2. **Female share of employment as managers, legislators and senior officials, 1985 and 2010**



Source: Eurostat (2013), ILO (2014).
Notes: Data for Australia are for 1997 and 2008, for Austria are 1995 and 2010, for Belgium 1993 and 2010, for Canada 1992 and 2008, for Finland 1997 and 2010, for Luxembourg 1993 and 2010, for New Zealand 1992 and for 2008, for Norway 1996 and 2010, and for Sweden 1997 and 2010.

These heterogeneous patterns of gender equality in employment are not trivial. Most immediately, they stress the need for a broader perspective on gender equality that stretches beyond the here and now, and that recognises that gender differences in employment are a non-fixed and variable phenomena that can be and have been modified. Through comparative logic, they also suggest that the determinants of gender differences must vary across time and space. Thus, these variations provide an opportunity to use comparison and comparative techniques to understand at least some of the drivers behind gender equalities and inequalities in the labour market.

There are, of course, a number of factors that contribute to variations in gender differences in labour market outcomes. Within a given labour market, gendered

employment outcomes are at least partly determined by individual or micro-level factors (Van der Lippe and Van Dijk, 2002). These include gender differences in education and skills (e.g. Schultz, 1960; Mincer, 1962; Mincer and Polachek, 1974; Polachek, 1981; Becker, 1993; Polachek, 1995; Lips, 2013), individual perceptions of appropriate gender roles and household divisions of labour (e.g. West and Zimmerman, 1987; Coltrane, 2000; Cunningham, 2007; Lachance-Grzela and Bouchard, 2010), and employer discrimination (e.g. Joshi and Newell, 1987; England et al, 1988; Wright and Ermisch, 1991; Blau et al, 2001: 213; Reskin and Bielby, 2005). In certain cases, variations in aggregations of these micro factors may also help explain differences in levels of equality across labour markets – for example, movements towards gender equality in education can explain at least part of the evolution of gender differences in market participation (Pampel and Tanaka, 1986; Goldin, 1994) and also in the gender pay gap (Blau and Kahn, 1997; Polachek, 2004). However, from a comparative perspective micro arguments are rarely entirely satisfactory. Variations in aggregations of individual-level factors often struggle to explain a sufficient proportion of variations in gender equality across counties (Nermo, 2000: 297; Pettit and Hook, 2005: 782), and in some circumstances the effects of micro determinants actually differ across countries[2] and over time (Charles et al, 2001).

Here, comparative studies often turn to macro- or societal-level factors as possible determinants of variations in gendered labour market outcomes. The broad argument is that individual employment decisions are always nested within and influenced by a 'societal context', and that variation in at least some of the macro factors that contribute to such a context may produce systematic variation in male and female employment outcomes across macro units (Van der Lippe and Van Dijk, 2002). Again, there are a number of possible determinants. Societal level norms and culture are likely to hold an influence, as, for instance, Pfau-Effinger (1998; 2004) shows in an examination of the manner and extent to which cultural traditions shape female labour participation (see also Fortin, 2005). Variations in economic structures play a role too (Pampel and Tanaka, 1986), either directly by shaping employment opportunities and conditions, or indirectly by altering incentives for labour supply. For example, several studies point to the level of economic competition and the length of the overall wage structure as determinants of cross-national variation in the gender pay gap (Blau et al, 2001: 409; Blau and Kahn, 2003; Zweimüller et al, 2007). The proportional size of the service sector is also found to both promote female employment through increased labour demand, and to intensify

[2] For instance, the response of female labour supply to male partners' labour market assets differs between Germany – where a male partner's income, education and occupational status are found to constrain female employment – and Denmark and Sweden – where a highly educated male partner increases women's economic activity (Drobnic and Blossfeld, 2001: 378).

segregation of male and female labour across occupational roles (Goldin, 1990; Charles, 1992; Esping-Andersen, 2002; Pettit and Hook, 2005; Thévenon, 2013). However, perhaps the most influential – or at least the most keenly studied – macro level factor is the state, or more specifically cross-national and temporal variations in public policies and national levels institutions (Daly, 2000; Van der Lippe and Van Dijk, 2002).

It is here, within the comparative public policy-gender equality in employment research field, that this thesis is placed. This chapter reviews the comparative policy literature, with a view to providing a theoretical and empirical foundation for the thesis. It starts fairly broad in section **2.1** with a brief history and overview of comparative research on links between the state, public policy and gender differences in employment outcomes. The section touches on differing approaches to comparative policy investigation – paying particular attention to the contribution and limitations of the influential gender regime literature – before highlighting the value and worth of comparative family policy research.

The remainder of the review covers the comparative family policy literature specifically and in some detail. As a means of organisation, it is split into two parts with the theoretical and empirical sides of the comparative family policy literature covered separately. It is worth noting that this distinction is to some extent artificial, since many of those studies that develop and advance theories on the effects of family policy also test and examine these theories using empirical evidence. However, the two sides are separated here for clarity and to help highlight gaps and issues in existing comparative family policy research.

Section **2.2** covers the theoretical side of the literature. It outlines the thesis' broad theoretical framework – Korpi's (2000) conception of family policy types – and draws together insights from a number of authors to produce a fairly detailed theoretical account on the expected influence of family policy on gender differences in employment. The section is fairly lengthy, in large part because it provides the theoretical foundation for the entirety of the thesis.

Section **2.3** reviews the empirical side of comparative family policy research. It covers the contribution of the existing empirical literature and assesses the extent to which it provides support for theorised relations. In doing so, it also adds detail to the critique of existing research first outlined in the introduction to the thesis – specifically, that much of the literature continues to rely on problematic cross-sectional associations only – and emphasises the need for further 'over time' investigation.

Finally, section **2.4** offers a conclusion to the chapter, summarises discussions from the preceding sections and underlines how this thesis looks to contribute to knowledge on relations between family policy and gender differences in employment.

2.1. A brief overview of comparative research on the state, public policy and gender differences in employment

At its most basic, the core argument behind research into the state and gender differences in employment is that public policies and state structures can influence employment outcomes, at times directly but more so by altering the context within which individual decisions regarding employment are made (Van der Lippe and Van Dijk, 2002). Much of this influence may be gender-neutral, but in a number of cases public policies and institutions can produce effects that – sometimes intentionally, sometimes inadvertently – impact differentially on men and women. As a result, the state has the ability to moderate, reduce or reinforce pre-existing gender differences in employment outcomes (Daly, 2000; Van der Lippe and Van Dijk, 2002).

Notably, much of the early literature on the relation between gender and the state is highly critical, and for the most part argues that the state acts only to constrain female outcomes and to produce and reproduce gender inequalities (O'Connor, 1996; Orloff, 1996; Marinetto, 2007: 83). Perhaps the most acute examples come from radical feminism – which sees the state as a system purposefully designed to expand male privilege and to sustain female oppression by adding legitimacy to gender practices through public policy and institutions (Hartmann, 1976; MacKinnon, 1989) – or from socialist-feminist writers who view the patriarchal welfare state as a part of wider exploitation, with gender joining class as an axis of manipulation by the capitalist class (MacIntosh, 1976; Wilson, 1977). Feminist perspectives on social citizenship also emphasise the role played by public policy in reinforcing hierarchical gender relations. In particular, much attention has been paid to the manner in which modern citizenship and social rights are attached to wage-earning and employment status, which has obvious implications for the exclusion of women from rights and social provisions for as long as historical gender divisions of labour continue to hold (Fraser, 1987; Nelson, 1990; Fraser, 1994; Lister, 1997).

These various early critical perspectives are highly influential (Orloff, 1996) and provide a strong point of reference from which further research into the influence of the state on gender equality departs. However, in themselves they have attracted criticism based on

the tendency to assume uniformity in *the* patriarchal state (Walby, 1990; Sainsbury, 1999; Marinetto, 2007: 83), and to ignore or brush over both historical and cross-national variation in the structure and organisation of welfare states (O'Connor, 1996; Orloff, 1996; Sainsbury, 1999). This 'monolithic' patriarchal state is not only empirically false, but is also problematic for the current discussion in that it restricts the ability to apply feminist welfare state insights to explorations of *variations* in labour market equality.

Importantly, though, later feminist state research – starting perhaps around 1990 – re-examined gender state insights from a comparative perspective (Orloff, 1993; Sainsbury, 1999). Driven to some extent by the shortcomings of early feminist state research and in part by a lack of recognition for gender in mainstream comparative welfare state analyses, this 'comparative turn' allowed feminist research to explore cross-national variation in gendered aspects of states and welfare state forms. The impact on the direction and development of gender and state research has been substantial. Most immediately, the adoption of a comparative perspective prompted an acknowledgement that *certain* state forms could promote and support women's interests (O'Connor, 1996: 7) – early studies with a focus on Scandinavian in particular were influential in highlighting the idea of a 'female-friendly' welfare state (Hernes, 1987; Leira, 1992; Orloff, 1996: 63). Just as important here, though, the use of comparative methods and the recognition of variation allowed for insights into gender and the welfare state to be applied to analyses of variations in gendered labour market outcomes. In other words, by acknowledging variation, the state and public policy could enter explorations of cross-national or temporal variation in gender equality in employment as a macro level factor.

A variety of state policies may contribute to variations in gendered labour market outcomes, particularly when comparing over time as well as across countries. These stretch from gender-relevant 'freedom from' anti-discrimination policies to wider and broader state employment policies (Korpi et al, 2013: 8). Indeed, as recent research into the global financial crisis and its fallout shows, even general macroeconomic policies may have gendered implications (Karamessini and Rubery, 2013). However, within the comparative gender equality literature – and especially the quantitative comparative literature – much of the focus has been on gender- or family-specific claim rights or 'freedom to' policies such as parental leaves, public childcare provision and family-related tax and transfer policies, most of which come under the umbrella term 'family policy' (Van der Lippe and Van Dijk, 2002; Korpi et al, 2013: 8).

In recent years the comparative literature has come to be dominated by studies that, like

this thesis, focus on family policies specifically and in and of themselves. However, earlier research – most notably gender regime studies, which take a broader view of variations in policy provision – continues to provide insight. Indeed, gender regime studies are not only valuable in themselves, but are also important because they provide much of the theoretical and empirical basis for comparative family policy studies with the two literatures remaining closely linked (Van der Lippe and Van Dijk, 2002). Before moving on to explore the comparative family policy literature then, it is important to touch on the contribution of gender regime research, as well as its limits.

Gender regime studies

Regime analysis as a general method developed as a means to capture neatly and succinctly variety in state forms and welfare state structures. In broad terms, the technique looks to capture qualitative variation in state structures through the identification of common patterns of policy provision and shared institutional characteristics that develop within and differ between groups or 'clusters' of nations (Myles and Quadagno, 2002: 39). From these clusters emerge classifications of 'regime types', where the general and overall approach to a given policy area or areas is relatively homogeneous internally but qualitatively distinct externally from other regime types. The end result is a categorical variable that, ideally, neatly reflects differing approaches to the policy area across nations. Of course, values on this categorical variable are unlikely to exactly describe the approach of the state in any given country, and a certain level of simplification remains necessary in order to provide systematic comparison (Perrons, 1995). Nonetheless, the technique provides a useful vehicle for illustrating variations in state policies and institutions.

Gender or gender-relevant regime typologies themselves emerged out of dissatisfaction with mainstream, androcentric welfare regime analyses (e.g. Esping-Andersen, 1990; O'Connor 1993) and from a desire to examine systematically how states differentially affect the position of women through the provision of family policies and other gender relevant policies and institutions (Sainsbury, 1999; Hobson, 2005). There are a number of gender-relevant regime analyses available (e.g. Lewis, 1992; Siaroff, 1994; Sainsbury, 1996; Esping-Andersen, 1999; Leitner, 2003; see Saxonberg, 2013), but all share a concern with producing a typological categorisation of state approaches to gender, employment and the family.

Several early feminist regime analyses base their typologies around the concept of the

male-breadwinner model, that is, around the institutionalisation of the ideal of a complete and gendered division of labour between partners (Lewis, 1992; Ostner and Lewis, 1995; Sainsbury, 1996). Lewis (1992) and Ostner and Lewis (1995), for instance, ground their influential typologies in the extent to which social policies support female exclusion from the labour market and encourage women to remain full-time caregivers. 'Strong male breadwinner' states seek to maintain female economic subordination and provide few policies that facilitate female employment. In contrast, the 'weak male breadwinner' welfare state is less faithful to the status quo and provides more support for a dual earner society through female-friendly tax, leave and child care policies (Lewis, 1992:159). The authors apply their measure to welfare states in France, Germany, Ireland, Sweden and the United Kingdom. Sweden emerges as a weak breadwinner state and France moderate, while policy formulations in Germany, Ireland and the UK are all found to be strongly committed to maintaining the male breadwinner ideal, albeit through differing mechanisms.

Many other gender-relevant regime typologies are based around some variant of the term 'defamilialisation' (Esping-Andersen, 1999; Leitner, 2003; Hantrais, 2004). The concept is slightly contested (see Bambra, 2004; Bambra, 2007; Saxonberg, 2013), but is normally taken to mean either the extent to which an individual can maintain an acceptable standard of living independent of the family (Lister, 1997) or, more commonly in the regime context, the extent to which domestic care services are '*provided outside of the family, either by the state or the market*' (Orloff, 2002:12). In the latter sense, the term recognises that the responsibility for care often rests on the mother and that, in the absence of a sufficient market, state provision of 'defamilialising' care services – such as public childcare services – may be necessary for full female labour participation. Alternatively, the state may also provide 'familialising' policies – such as family-related tax subsidies and cash transfers, for example – which given prevailing gender divisions of labour are likely only to solidify women's roles as caregivers in a manner similar to Lewis' 'strong male breadwinner' state.

One of the most influential typologies to use the concept of 'defamilialisation' comes from Esping-Andersen (1999), who notably had earlier authored a seminal regime analysis on variations in welfare state approaches to class and class relations (Esping-Andersen, 1990). Interestingly, Esping-Andersen (1999) produces a tripartite classification of gender regime types with country clusters that – with just a couple of exceptions – are remarkably consistent with his original typology (Esping-Andersen, 1999: 94; see table **2.2** (pg. 35)). The 'social democratic' cluster draws together states that are characterised by extensive

public provision of defamilialising care policies and a policy environment that is generally favourable to and encouraging of female employment (1999: 78, 86). This regime type covers the Scandinavian nations, with Sweden often seen as the typical social democratic-type state. The 'liberal' regime – most often found in the English speaking countries, with the United States as the archetype – covers states that provide little in the way of either explicit public familialising or defamilialising policy, and instead tend to rely mostly on the market for the provision of care services and on private judgment for decisions around labour participation (1999:86). Lastly, the 'conservative' cluster captures states that are generally reluctant to provide public defamilialising policy, and on the contrary actively reinforce the role played by the family in providing care through the provision of extensive familialising policy – in other words, the conservative regime pulls together states that are generally hostile to full female employment (1999: 66, 86). This regime type includes most of the continental European countries. However, slightly problematic here – as Esping-Andersen acknowledges – are France and Belgium, who diverge slightly from other conservative-type states by the extent to which they offer relatively generous public childcare services (Moller and Misra, 2005; Misra et al, 2006).

Alternative regime analyses look to overcome this latter issue by allowing countries to exhibit a contradictory or pluralistic approach towards women, care and employment (Leitner, 2003; Misra et al, 2006). Leitner (2003), for example, constructs a typology built loosely around Esping-Andersen (1999) but with degrees of familialism and defamilialism captured concurrently. This lets Leitner construct a multidimensional typology that allows for combinations of strong or weak familialising and defamilialising policy, resulting in four possible regime types (shown in table **2.1**). Most important here is the 'optional familialism' type, which combines high levels of family support through familialising policy with generous defamilialising policy – in other words, the state provides support both for women who wish to participate in the labour market and also for those who wish to remain home to care (Leitner, 2003: 359).

Table 2.1. **Leitner's (2003) two-dimensional gender regime classification**

Familialisation	Defamilialisation	
	Strong	Weak
Strong	Optional Familialism	Explicit familialism
Weak	De-familialism	Implicit familialism

Source: Leitner (2003)

Leitner applies this conception to the EU15. Results are broadly similar to Esping-

Andersen (1999), but with certain notable differences (2003: 361; see table **2.2** (pg. 35)). The 'conservative' regime type is mostly split between 'implicit familialism' in the southern European countries – where little effort is made to break down the familialist status quo (2003: 359) – and 'explicit familialism' in most other continental European countries (2003: 35). Ireland and the United Kingdom are – a little surprisingly – classified together as 'defamilialist', due mostly to Leitner measuring both public and private provisions of childcare together as one (Moller and Misra, 2005: 8). The Scandinavian countries, meanwhile, are classified as contradictory or 'optional familialist' countries on account of generous parental leave schemes and childcare provisions which produce high scores on Leitner's measures of familialism and defamilialism, respectively. Importantly, they are also joined here in the 'optional familialist' set by France and Belgium, thus providing a neat solution to the uncomfortable placement of the latter two within Esping-Andersen's conservative regime type.

These various gender typologies each produce their own insights and all hold their own value. However, they are not completely incompatible with one another (Orloff, 2002: 13-14). Table **2.2** synthesises the various typologies outlined above. There are of course inconsistencies and disagreements between conceptions, but a broad reading of this categorisation represents some form of general agreement as to how states cluster and vary with regard to public policy, gender and employment. Simplifying somewhat, the 'social-democratic' countries in the top cluster are generally the most extensive providers of public policies that encourage female employment, while the 'conservative' continental European countries in the second group are – to varying extents and with the partial exception of Belgium and France – generally less supportive of female market participation and more likely to provide policies that reinforce women's position within the home. The 'southern European' and 'liberal' countries in the bottom two groups, meanwhile, generally provide little in the way of explicit family policy, and instead tend to rely more on the family or on the market and private decision-making, respectively.

Empirical studies largely confirm the expected association between these country clusters and variations in gender differences in economic activity (O'Connor, 1996; Gornick, 1999a; Daly, 2000; Korpi, 2000; Van der Lippe and Van Dijk, 2002). Countries within the social democratic regime type tend to have the highest rates of female employment and the greatest level of gender equality in labour participation, suggesting that a country characterised by the presence of strong defamilialising policy can indeed encourage female labour supply. Liberal-type states tend to perform moderately – implying the market can provide defamilialising services for at least some women – while conservative-

Table 2.2. **Country classifications in different gender policy typologies**

Country	Esping-Andersen's (1999) typology	Lewis' (1992) typology	Leitner's (2003) typology
Denmark	Social democratic	-	Optional familialism
Finland	Social democratic	-	Optional familialism
Norway	Social democratic	-	-
Sweden	Social democratic	Weak breadwinner	Optional familialism
Belgium	Conservative	-	Optional familialism
France	Conservative	Modified breadwinner	Optional familialism
Austria	Conservative	-	Explicit familililalism
Germany	Conservative	Strong breadwinner	Explicit familililalism
Luxembourg	-	-	Explicit familililalism
Netherlands	Conservative	-	Explicit familililalism
Italy	Conservative / Southern Europe	-	Explicit familililalism
Greece	-	-	Implicit familialism
Portugal	Conservative / Southern Europe	-	Implicit familialism
Spain	Conservative / Southern Europe	-	Implicit familialism
Ireland	Liberal	Strong breadwinner	De-familialism
United Kingdom	Liberal	Strong breadwinner	De-familialism
Australia	Liberal	-	-
Canada	Liberal	-	-
United States	Liberal	-	-
New Zealand	-	-	-

Source: Adapted from Orloff (2002:13,14); Esping-Andersen (1999: 62-63, 71-72); Leitner (2003: 361). See also Sainsbury (1996), Bambra (2004), Hantrais (2004), Misra et al (2006), Bambra (2007) and Saxonberg (2013) for alternative typologies.

type states and in particular southern European countries generally exhibit the lowest levels of female market participation (O'Connor, 1996; Gornick, 1999a; Van der Lippe and Van Dijk, 2002:230). There is, of course, some variation within each cluster (Gornick, 1999a; Van der Lippe and Van Dijk, 2002:230) and there are anomalous cases, such as

Norway and, in particular, Portugal, where female employment rates are far higher than other nations usually grouped within the conservative/southern European regime type (Gornick, 1999a; Van der Lippe and Van Dijk, 2002). Broadly, though, the relation between gender regime types and female economic activity appears reasonably robust and in-line with the theoretical expectations of the regime literature.

Notably though, more recent empirical research suggests that the Scandinavian countries may not be leaders in all aspects of labour market equality – indeed, in certain areas gender equality may be markedly lower in the social democratic states than elsewhere (Mandel and Semyonov, 2005; Mandel and Semyonov, 2006; Pettit and Hook, 2009).

Gender job segregation, for instance, appears higher in the Scandinavian countries than in other European states (Den Dulk et al, 1996). Likewise, women's access to high status managerial positions is generally lower in the social democratic countries than in those from the liberal regime type in particular (Mandel and Semyonov, 2006).

These contradictory patters of equality have lead several authors to develop the idea of a welfare state 'paradox' (Mandel and Semyonov, 2005; Mandel and Semyonov, 2006; Mandel, 2009; Pettit and Hook, 2009). The exact mechanisms behind these proposed trade-offs are examined in detail later in section **2.2.3**, but the general idea is that the very policies and institutions that promote female employment act at the same time to encourage segregation between men and women and to reinforce 'glass ceilings' on women's careers (Pettit and Hook, 2009:8; Mandel, 2009:700). Some authors have contested the validity of such a trade-off – arguing instead that these apparent contradictions are little more than statistical artefacts (Korpi et al, 2013; see section **2.3.1**) – but the important point to take away here is that a social democratic style state is not necessarily a panacea for broader gender equality in employment.

The limitations of gender regime studies

Broadly, then, the gender regime literature produces valuable insights into how variations in public policy may shape and structure cross-national differences in various areas of gender equality in employment. However, there are limits to how far these empirical insights can go, as several features inherent to policy regime analysis restrict the ability of and detail with which gender policy typologies can explain variations in gender differences in employment (Van der Lippe and Van Dijk, 2002: 227; Korpi et al, 2013: 8).

Most immediately, the categorical variable produced by regime typologies is likely to paint a far simpler picture of policy provision than exists in reality or, to put it in more technical terms, is likely to sharply reduce variation in measures of gender relevant public policies. The reduction in variation may not be too severe if all countries in a given cluster conform consistently and near-perfectly to a certain set of policies, that is, if policies are consistent and close to homogenous within each regime type. However, such homogeneity is both theoretically and empirically unlikely. Most immediately, despite the best efforts of gender regime theorists it remains possible to find rather sharp differences in gender relevant policy within the usual country clusters. More worryingly perhaps, it is also possible to find inconsistencies in policy provision within a given country, in that in several countries it is not always easy to isolate one single coherent approach to gender. Thus, the

categorical variable produced by regime typologies may not only reduce variation in policy between countries but also within countries themselves (Kasza, 2002).

These intra-cluster and intra-country inconsistencies are problematic for the theoretical robustness of gender regime types. More relevant here though, because such variations are not picked up by the categorical regime variable they are also likely to reduce the ability of and accuracy with which the categorical variable can explain variations in gendered labour market outcomes. In certain circumstances the reduction in variation may even obscure or disguise some 'true' relation between the policies underlying regime types and equality outcomes, leading to incorrect inferences regarding the influence of public policy (Park, 2008: 875).

Reducing policy data into a single categorical variable also makes it difficult to delineate which specific policies or institutions, if any, actually influence variation in equality outcomes (Park, 2008: 876; Misra et al, 2011: 143). This is particularly true where there is diversity within regimes – it is not helpful to argue that, say, a conservative approach to gender constrains female employment if it is not clear what policies are intrinsic to a conservative-type gender regime – but is also the case even if policy is relatively homogenous within clusters. For example, the findings reviewed above suggest a social democratic approach to gender promotes female economic activity, but it is not clear whether this is due to the presence of generous leave entitlements or childcare provision, due to female-friendly tax and transfer systems, or perhaps a combination of all the above. This of course sharply reduces the usefulness of results for policy makers.

Finally, the fact that a country can take on only one of perhaps three or four possible states – coupled with the historical and institutional basis of regime types – means that country membership of a particular regime type rarely changes and indeed almost always remains fixed. As a result, regime indicators are unlikely to capture policy development and variation over time (Moller and Misra, 2005), particularly when policies change only incrementally or when individual policies within a given country develop at different paces and perhaps in different directions. Thus, while regime analyses may help explain the influence of policy on cross-national variation in gender equality in employment, the technique is poorly suited to examining variations and developments in gender differences in employment over time.

Comparative family policy studies

Comparative family policy research is closely related to the gender regime literature – indeed, in large part it examines the effects of the very same policies that underlie and define gender regime types. However and importantly, rather than using these policies as the basis for a general classification of a state's overall approach to gender, family policy studies generally focus on the specific and individual policies in themselves. In other words, whereas regime analyses take regime types and country clusters as the units of analysis, in comparative family policy studies it is the specific policies that form the focus of inquiry. For a couple of reasons, this helps comparative family policy research overcome at least some of the limitations of, and build on many of the findings from, gender regime analyses.

First, from a theoretical perspective, focusing on individual policies helps avoid many of the complications involved with properly capturing gender regime types (Korpi et al, 2013: 8). Comparative family policies studies need not be so concerned with summarising neatly and in one go a state's general and overall approach to gender and the family, or with forcing and fitting complex patterns of policy provision into a categorical typology variable. Instead, to some extent at least, they can simply allow measures of policy to paint whatever picture they need, including any intra-cluster or even intra-country contradictions and inconsistencies.

Second, from a methodological point of view, family policies themselves offer analytical units that are generally far more flexible than regime types. For instance, family policy studies have the option of using rich data on policy provision as measures in their own right – as opposed to inputs that are used only to produce a single categorical typology variable – and as a result can produce detailed individual indicators that in many cases can be measured on a continuous or at least ordinal scale. This means that the effects of different policies can be examined separately and simultaneously, and allows for the construction of a more detailed overview of policy provision both across and within countries. Moreover, since measures can be more sensitive to variation, indicators of individual family policies are better able to capture developments over time and therefore are far better suited to examining relations between changes in policy and employment outcomes (Korpi et al, 2013: 8).

These advantages allow the comparative family policy literature to extend and expand upon the basic associations uncovered by gender regime studies and to advance

understandings of how policy, as a macro factor, impacts on male and female employment outcomes. In recent years a large number of insightful studies have examined the influence of family policy, producing what is in many cases a fairly detailed and sophisticated account of links between variations in policy and variations in employment outcomes. As touched on in the introduction to the thesis, these studies indicate that specific family policies may have some direct influence on both gender differences in economic activity and on occupational segregation and women's careers (Gornick et al, 1998; Ruhm, 1998; Jaumotte, 2003; Mandel and Semyonov, 2005; Ferrarini, 2006; Mandel and Semyonov, 2006; Misra et al, 2008; Akgunduz and Plantenga, 2012; Nieuwenhuis et al, 2012; Thévenon, 2013), with effects that in both cases may vary across socio-economic class (Shalev, 2008; Mandel and Shalev, 2009; Mandel, 2011; Mandel, 2012; Korpi et al, 2013). However, as also mentioned in the introduction, this existing comparative family policy literature has its limits, particularly in the extent to which much of it remains based on between-country differences in policies and outcomes only.

The remaining two sections of this chapter review this comparative family policy literature in some depth, starting first with the theoretical side of the literature. This theoretical review is structured loosely around Korpi's (2000) theory of family policy types, although by itself Korpi's conception is not broad enough to cover all considerations relevant to the three research questions stated in the introduction. Thus, the section also brings together insights from a number of other authors to produce a reasonably detailed description of the expected effects of family policy on various aspects of gender equality in employment.

2.2. The theoretical effects of family policies on gender differences in employment

The comparative family policy literature provides a number general theories on the influence of family policy on gender differences in employment (e.g. Gornick et al, 1997; Korpi, 2000; Mandel and Semyonov, 2005; Mandel and Semyonov, 2006; Pettit and Hook, 2009; Misra et al, 2011), many of which emerge from work on gender and the welfare state as outlined in the previous section. To be sure, not all research on links between family policies and employment outcomes operates within an explicit overarching theoretical framework. Rather, several studies (e.g. Ruhm, 1998; Jaumotte, 2003; Tranby, 2010; Akgunduz and Plantenga, 2012; Nieuwenhuis, 2012; Thévenon and Solaz, 2013; Thévenon and Solaz, 2013) simply take each individual family policy on its own terms, with each holding its own theoretical influence over gendered labour market outcomes.

However, use of the right overarching theory can aid coherence and organisation, and helps ensure 'family policy' in general terms is covered comprehensively.

The preferred theoretical framework for much of this thesis is Korpi's (2000) theoretical distinction between 'dual earner', 'general family support' and 'market oriented' family policy types[3]. Dual earner policies, Korpi suggests, are those with a focus on encouraging full and equal access to the labour market. They look to promote female economic activity by reducing care burdens through service provision and by increasing the compatibility of paid and unpaid responsibilities (2000:11). General family support policies, on the other hand, look to provide financial or 'time' support for the family unit in general (Korpi et al, 2013: 14). Since these latter policies tend to be premised on the traditional family model – with the father as a single earner and the mother as the specialised household labourer – they are more likely to reinforce gender divisions of labour than to promote female employment (Korpi, 2000:11). An absence of both, meanwhile, generally indicates a 'market oriented' approach to family policy with a reliance on the market and private decision-making (Korpi, 2011: 11).

Korpi's (2000) theoretical conception is popular – it has been used in the family policy-gender equality in employment literature by Ferrarini (2006), Mischke (2011) and Korpi et al (2013), and by several others in the wider family policy literature[4] – and carries advantages. In particular, the explicit recognition that different types of family policy operate with different and at times opposing objectives encourages and to some degree even forces analyses to consider the possibility of contradictory configurations of policy (Mischke, 2011: 445). This is important, of course, because it is known from the gender regime literature that certain welfare states provide policies that produce conflicting incentives for families and for mothers in particular (Leitner, 2003; Misra et al, 2006). By putting policy contradictions at the centre of the theory, Korpi's conception ensures that analyses explore the full picture and examine the effects of family policies that look to promote equality in employment having controlled for the influence of others that may reinforce women's position within the home (Ferrarini, 2006: 105).

This is not to say that Korpi's theory is without its faults. For example and as discussed a

[3] It is worth noting that Korpi (2000) initially developed this distinction to provide the theoretical underpinnings of a gender regime typology that avoids the complications of familialising / defamilialising policy, but later works (Ferrarini, 2006; Mischke, 2011; Korpi et al, 2013) use the dimensions as the basis for measures of family policy in their own right, rather than collapsing the data into a categorical typology

[4] Examples include Bäckman and Ferrarini's (2010) study of relations between family policy and child poverty, and Engster and Olofsdotter Stensöta's (2011) research on child well-being.

little later on, it says little about the possible adverse 'trade off' effects attached to certain policies. Nonetheless, Korpi's theory continues provides a useful organising framework. As the loose foundation for the thesis, it is important to outline the various policy types and what they do and do not cover in a little more detail.

2.2.1. Korpi's theoretical conception of family policy types

Dual earner policy

Korpi's dual earner type policies are those family policies that look to encourage full and continuous female employment and promote equality in labour market outcomes (Korpi, 2000: 11, 13). These policies generally aim to reduce the costs and barriers to female employment by shifting the responsibility for care away from mothers, by increasing returns to maternal employment, and by easing the compatibility of work and family roles (2000: 13). In more recent work, Korpi (2010; Korpi et al; 2013) compliments the dual earner policy type with a closely related 'dual carer' policy category. These policies are aimed at encouraging male participation in household labour (2013: 14), which is desirable in itself but also helps facilitate female labour supply through a reduction in female domestic responsibilities. Importantly, though, Korpi et al (2013) find that dual earner and dual carer policies '*work in synergy'* and correlate closely (2013: 14). As a result, they find it beneficial to treat the two types as one single dual earner-carer policy category (2013: 14). This is also the approach taken here.

For the most part dual earner-carer family policies can be split into two main policy sub-types – state legislated job-protected leaves of absence, and public childcare provision or subsidisation (Korpi, 2000: 13)[5]. The two are referred to throughout this thesis as 'dual earner-carer leave policy' and 'dual earner childcare policy', respectively. It may also be possible to consider some forms of flexible working legislation and also certain financial incentives for employment – especially employment-conditioned or 'in-work' benefits – as 'dual earner' type policies. The former – which are most commonly found in European countries in the form of an individual right to, or at least the 'right to request', flexible hours (Plantenga and Remery, 2005; Lewis, 2009) – may be considered dual earner to the extent to which they help parents reconcile work and family responsibilities and thus

[5] This distinction is not strictly part of Korpi's (2000) conceptualisation, but draws inspiration from the distinction made by both Pettit and Hook (2009) and Misra et al (2011) between 'work-facilitating' family policies that free parents from care constraints – mostly childcare policies – and 'work-reducing' family policies – mostly leave policies - that temporarily lessen labour market responsibilities in the short-term with a view to promoting medium- to long-term labour market attachment.

allow mothers the opportunity to enter the market. The latter, meanwhile, rarely have an *explicit* dual earner intention – rather, the they tend to be aimed at incentivising employment and 'making work pay' more generally (OECD, 2005: 126) – but may encourage dual earning in as much as it is women and particularly mothers who tend to be out of work or on low pay in the first place. Unfortunately though, concerns around data and operationalisation prevent either from full inclusion in this thesis. Comparable information on 'in-work' benefits is fairly scarce, while several studies note that the actual practice of flexible working at company-level seldom corresponds to national-level legislation, both within and across countries[6] (Plantenga and Remery, 2005; Riedmann et al, 2006; Chung and Tijdens, 2013). Indeed, both types of policy are rarely covered in the comparative family policy-gender equality literature and are not mentioned in Korpi's works, perhaps for these very reasons.

Dual earner-carer leave policies are those child-related leaves of absence that are constructed so as to support female economic activity and, perhaps to a lesser extent, promote male caregiving and participation in household labour (Korpi, 2000: 13; Korpi, 2010: S22). Importantly, this does not include all leave entitlements, as the effects of leave as a general policy type on female employment are theoretically ambiguous. On the one hand, allowing women to temporarily leave employment with the guarantee of a job on return is likely to promote labour market attachment amongst women who would otherwise have had to exit the market completely upon childbirth. On the other, encouraging mothers to leave employment in order to fulfil caring responsibilities may reinforce gender norms and gendered divisions of labour. This is particularly likely to be the case where leaves are long[7] – so, therefore, the mothers is outside of the market for longer than might be the case without any leave entitlement – and are structured so as to encourage take-up by the mother only. Accordingly, only those policies that are designed to promote dual earning – on balance at least – are considered 'dual earner' by Korpi.

The idiosyncratic nature of leave policies means that it is at times difficult to differentiate between dual earner and non-dual earner leaves. However, the distinctions made by Korpi (2010) and others (Ferrarini, 2006; Mischke, 2011; Korpi et al, 2013) when operationalising leave policies are fairly clear. Paid maternity leaves are generally

[6] At least in part, this may be because of the tradition in many countries for negotiation and collective agreements regarding employment conditions at the level of the firm (Riedmann et al, 2006; Chung and Tijdens, 2013).

[7] The exact length at which leave becomes detrimental to mother's labour market attachment is not theorised within Korpi's framework. However, empirical evidence suggests that the marginal effect of weeks of total leave on female employment becomes negative at around two years (Misra et al, 2011; Thévenon and Solaz, 2013). See section **3.2.1** and **3.2.2** for more detail.

considered 'dual earner' (Korpi, 2000; Ferrarini, 2006; Korpi, 2010; Mischke, 2011; Korpi et al, 2013). Although specific to mothers, these leaves are generally fairly short and are almost always paid through an earnings-related benefit that reflects labour market achievement prior to childbirth. As a result, they produce incentives for women to *'start and maintain an occupational career'* (Korpi, 2000: 13), as well as encouraging female employment continuity through a relatively brief period of job-protected period leave.

Likewise, paid paternity leaves and other entitlements specific to fathers are generally classified as 'dual earner-carer' (Korpi, 2000; Ferrarini, 2006; Korpi, 2010; Mischke, 2011; Korpi et al, 2013). These leaves aim to encourage a more gender egalitarian division of unpaid labour and may, as a result, promote equality in economic activity. This is most likely to work through indirect channels if they encourage men to take more responbility for care and domestic labour and, subsequently, allow women to expand their supply of market labour. But father-specific leaves may also have more immediate and direct effects on gender differences in economic activity if they encourage men to cut back on their own time spent in paid work. Either way, they form an important part of dual earner-carer policy as they represent one of the few legislated methods through which states attempt to change care burdens and divisions of unpaid labour (Korpi, 2000: 13).

Lastly, certain gender-neutral or sharable parental leaves are also considered 'dual earner'. Important here is the distinction made by Korpi between parental leaves paid through an earnings-related benefit and those that use a flat-rate payment (Korpi, 2000: 13). The latter flat-rate type tend to be long and contain strong disincentives for take-up by fathers – since, on average, men typically earn the higher wage within a couple, the opportunity cost of taking a leave paid through a flat-rate payment is often far larger for the father (Ferrarini, 2006: 94; Korpi et al, 2010: 16; Bäckman and Ferrarini, 2010: 281). As a result, these lengthy flat-rate parental leaves are particularly likely to remove mothers from the labour market for an extended period and to reinforce their position within the home[8].

Parental leaves paid through an earnings-related benefit, on the other hand, provide at least some incentive for male take-up as the payment reflects prior earnings and therefore

[8] Empirically, the payment rates on flat-rate parental leaves also tend to be relatively low. Low payment rates are likely only to reinforce discincentives for male take-up, although to some degree they may also discourage take up – or at least shorten the preferred length of leave – among women too. Thus, when payment rates are low, it is possible that at least some of the damaging effects of long flat-rate leaves may be offset by the discentives produced for lengthy use.

goes some way towards correcting for differential incomes within the household[9]. Additionally, earnings-related schemes provide greater incentives for female career progression prior to childbirth – as any wage gains will be reflected in the benefit paid (Bäckman and Ferrarini, 2010: 280) – and, empirically, tend to be shorter than parental leaves paid through flat-rate benefits. Accordingly, these parental leaves are more likely to promote male caregiving and, even if take-up remains dominated by the mothers, are less likely to reinforce women's roles as domestic workers. It is on this basis that Korpi and others consider only earnings-related job-protected parental leave schemes as 'dual earner-carer'. Parental leave schemes paid through a flat rate benefit, meanwhile, tend to be considered 'general family support' (Korpi, 2000: Ferrarini, 2006; Korpi, 2010; Bäckman and Ferrarini, 2010; Mischke, 2011; Korpi et al., 2013; see later in this section).

Dual earner childcare policies are a little easier to classify. Broadly, childcare policies can be classified as 'dual earner' as long as they reallocate the responsibility for child care away from the mother, and therefore facilitate full and continuous female market participation. Korpi is interested mostly in the '*extent to which public policies shift care work from the unpaid to the paid sector*' (Korpi, 2000: 13). As a result most policies that promote care outside of the home[10] can be considered 'dual earner' regardless of whether the service is actually provided by the state itself or by the market. Public service provision is generally seen as a dual earner policy, while other forms of provision such as cost-subsidisation or tax incentives to use childcare services may also be considered 'dual earner'. Importantly, though, Korpi does make an exception for part-time public childcare services for children aged between three and school-age. These policies, Korpi suggests, presume a parent – that is, the mother – remains primarily engaged as a household labourer and are therefore unlikely to promote full female market participation (Korpi, 2010: s22; Korpi et al., 2013: 10).

General family support policy

Korpi's (2000) general family support policy type captures those policies that look to assist families with children either through financial support or by facilitating care within the household (Korpi, 2000: 11). These policies rarely have an explicit objective regarding female economic activity or gender differences in employment. Rather, their main intention is to help with the additional costs and responsibilities associated with

[9] Although the higher earner will still face a greater loss of income in absolute terms unless the leave benefit is set at 100% of prior earnings.
[10] And presumably that also shift care away from informal networks, since this type of care is also unpaid.

dependent children and to promote the well-being of families more generally. However, as these policies are often premised on the traditional family unit – with the father as a single earner and the mother as the specialised household labourer – they are likely to reinforce gendered division of labour and, by extension, constrain female labour supply (Korpi, 2000: 11; Korpi, 2010: s21).

For the most part, general family support takes the form of family-related tax and transfer policies (Korpi, 2000: 12-13; Korpi, 2010: s21). Similar to leave policies, family-related tax and transfer systems are fairly idiosyncratic so it is difficult at times to specify the exact policies involved. However, Korpi highlights child or family allowances – typically, a universal and non-conditional cash benefit paid per child, sometimes at a diminishing rate depending on the number of children, and often transferred directly to the mother – and family tax subsidies – such as joint taxation systems, dependent spouse allowances and family- or child-related tax credits – as particularly common provisions (Korpi, 2000: 12-13; Korpi, 2010: s21-s22). In both cases the policy looks to increase the equivalised income of households with children by offsetting at least some of the direct costs associated with dependents and the indirect costs of earnings forgone by a parent that specialises in care and domestic labour (Thévenon, 2011: 58). However, because in many cases these policies are aimed at supporting or are even dependent on a female domestic worker, they are likely to encourage women to specialise in household labour and discourage female market participation (Korpi, 2000: 12-13; Korpi, 2010: s21-s22; Mischke, 2011: 447; see section **2.2.2**).

As noted earlier, certain forms of leave and childcare policy are also considered to be 'general family support' by Korpi. The typical characteristics of flat-rate parental leave schemes mean that they are generally unlikely to promote maternal employment. What remains, then, is a leave entitlement that provides mothers with an extended period of absence from the labour market to give care within the home. The likely effect, intentional or not, is to encourage mothers to specialise in childcare (Ferrarini, 2006: 94; Bäckman and Ferrarini, 2010: 281). Likewise, some countries offer additional extended 'childcare' leaves that are generally long, often paid at a low, flat rate, and in many cases offer no job protection (Hegewisch and Gornick, 2011; Gauthier, 2011a; Gauthier, 2011b). These leaves are often explicitly aimed at allowing parents to remain at home to care for children, and due to their characteristics are mostly likely to be used by the mother (Korpi, 2010: s22; Korpi et al, 2013: 16). As a result, similar to flat-rate parental leaves, they are expected to reinforce nuclear family roles and to discourage female labour participation (Engster and Olofsdotter Stensöta, 2011: 87). Finally, as discussed above, Korpi considers

part-time public childcare for slightly older children also as a general family support policy (2000: 12).

Market oriented policy / low family support policy

Empirically, Korpi's market oriented policy approach is an absence of state legislated family policy as conceived of by the above two dimensions (2000: 11). Korpi is keen to point out that an absence of legislated family policy does not imply that such countries have not made explicit attempts to improve gender employment relations (Korpi et al, 2013: 18-19). Rather, Korpi suggests that often such countries have advanced sets of 'freedom from' anti-discrimination and equal opportunities legislation, but have consciously passed the responsibility for the provision of family policy to the market while also placing large emphasis on private decision making regarding work and family arrangements (2000: 11).

Slightly problematic here is the observation made by others (e.g. Engster and Olofsdotter Stensöta, 2011) that several Southern European countries[11] also feature little in the way of either dual earner or general family support policy, but yet place little emphasis on the market for the provision of family policy. Instead, these countries tend to rely on family networks for financial support and the provision of care (Engster and Olofsdotter Stensöta, 2011: 86). Engster and Olofsdotter Stensöta's solution is to rename the market oriented approach with the catchall term 'low family support' (2011:86), which is perhaps still a little unsatisfactory but offers an improvement on Korpi's terminology.

Either way, these policy approaches have received little attention from studies operating within Korpi's framework, most likely because both a market oriented and a family network approach are difficult to operationalise within a quantitative comparative setting[12]. Instead, the market oriented / low family support approach tends to be used as the control against which the effects of the more tangible dual earner and general family support policies are judged.

Drawbacks of Korpi's theoretical conception

As noted earlier, Korpi's theory of family policy types is not perfect, even after a few

[11] For example, Greece, Spain and Portugal (Engster and Olofsdotter Stensöta, 2011: 86)
[12] For example, data on the provision of childcare or leave schemes by the market are scarce, and schemes are likely to be so diverse as to be incomparable within countries let alone across countries.

modifications. First, the accounts given in the articles cited are not always sufficiently detailed on *how* the various types of policy influence gendered labour market outcomes, in that they are not always explicit on the mechanisms underlying the theorised relations. Second, Korpi's theory makes little mention of the possible adverse effects attached to certain family policies. As touched on earlier, and as discussed in more detail later in **2.2.3**, a number of authors (Ruhm, 1998; Blau et al, 2001; Mandel and Semyonov, 2005; Mandel and Semyonov, 2006; Pettit and Hook, 2009; Hegewisch and Gornick, 2011; Akgunduz and Plantenga, 2012; Thévenon and Solaz, 2013) suggest that certain policies may carry 'trade off' effects that constrain women's careers and reinforce 'glass ceilings' simultaneous with any influence of female labour participation. These arguments are mostly absent from Korpi's theoretical discussions, although in part this may be because Korpi objects to the theory on empirical grounds (Korpi et al., 2013; see section **2.3.1**). Lastly, Korpi's general conception mostly ignores the possibility that policies have varying effects across different groups of men and women.

These points are not intended to be criticisms as such – indeed, the second and third issues may be simply outside the scope of Korpi's work. However, given the aims and objectives of the thesis, they do need addressing. The following three sub-sections flesh-out the theoretical foundation of the thesis in some detail. Using Korpi's theory of policy types as the broad framework, they draw together insights from a number of authors to produce an outline of the theoretical effects of family policy on various aspects of gender equality in employment. The following sub-section (**2.2.2**) covers the influence of policy on gender equality in labour market activity, or the extent to which men and particularly women participate in the labour market. As this area of equality is also the focus of Korpi's theory, this particular sub-section mostly only adds further detail to the account above. Section **2.2.3** outlines the theory behind the possible adverse effects of certain policies on women's careers, or on what is termed here as gender job segregation and equality in occupational attainment. Lastly, **2.2.4** covers theoretical arguments on the differential effects of family policy on men and women with varying socio-economic characteristics. More specifically, it discusses the possibility that the influence of policy on various gendered employment outcomes may be conditioned by levels of education.

2.2.2. Family policy and gender differences in labour market activity

Dual earner-carer leave policy

As touched on earlier, leave entitlements for mothers as a general policy type have a

theoretically ambiguous effect on female participation and economic activity (Jaumotte, 2003: 11; Misra et al, 2011: 143). Put differently, when looked at as a single type of policy, leave programmes have a complex and uncertain theoretical relation with female labour supply, with the expected impact of a given leave entitlement likely to be dependent on the exact design of the policy at hand.

Most if not all job protected leaves have at least some capacity to promote maternal employment continuity (Jaumotte, 2003: 11). The general starting point here is that in the absence of job protected leave, mothers are likely to exit the labour force upon childbirth and importantly remain outside of the market for a lengthy – possibly indefinite – period of time (Akgunduz and Plantenga, 2012: 4). This might be because re-entering the market and finding new employment involves prohibitive search costs, because the period outside of the force depreciates the mother's human capital and therefore decreases the wage commanded in the market to a point below which the mother is unwilling to work[13], or because leaving the labour force triggers female specialisation in household labour. In this situation, job protected leaves may hasten mothers' return to employment by eliminating search costs and by protecting firm-specific human capital (Ruhm, 1998: 3; Akgunduz and Plantenga, 2012: 4). Additionally, leaving the labour force for only a fixed and specified period of time may prevent the mother from becoming a fully specialised domestic worker – in the sense that, when on leave, the mother retains their status as an employee – and may maintain maternal tastes and preferences for market labour.

It is also possible that legislated leaves may promote participation amongst women yet to become mothers. For the most part, this is because prospective parents can enter employment safe in the knowledge that complete labour market exit is not necessary should they wish to have children (Hegewisch and Gornick, 2011: 122). Additionally, where leaves are paid, the benefit in almost all cases is conditioned on the parent having been in employment for a certain length of time prior to the birth. Thus, women yet to become mothers have a further incentive to participate in the market prior to parenthood if they wish to qualify for the payment. Korpi (2000: 13) suggests this effect is likely to be particularly large where the leave is paid through an earnings related benefit, as the benefit directly reflects previous efforts to build and maintain a career.

On the flip side, however, leaves available to mothers may also have concurrent damaging effects on female participation and gender differences in economic activity. This is

[13] This is effect may be amplified by the fact that, in the absence of sufficient 'dual earner childcare provision', the wage commanded will have to cover additional costs associated with childcare.

particularly likely to be the case where the leave is long (Jaumotte, 2003: 11; Hegewisch and Gornick, 2011: 1225). More specifically, if leaves are of sufficient duration to remove mothers from the market for longer than would have been the case in the absence of any statutory entitlement, then the provision may act only to intensify human capital depreciation and reinforce women's roles as domestic workers (Akgunduz and Plantenga, 2012: 4). As a result, while the entitlement would continue to provide a link with employment and remove the need to search for a new job, the overall effect may be to discourage women from returning to the labour force.

The actual impact of a given leave policy should depend on how the structure and design of the leave balances the two conflicting effects. Going by Korpi's (2000; 2010) theorisation, both maternity leave and gender-neutral earnings related parental leave should carry mostly positive effects for female participation. The former are typically short and are usually concentrated around childbirth, and also are usually paid through an earnings related benefit. As a result, they are expected to encourage participation amongst prospective parents and promote employment continuity amongst mothers. The expected effects of gender-neutral earnings related parental leaves are slightly more uncertain. Empirically, these leaves tend to be moderate in length and the earnings related payment should both promote activity amongst women not yet parents and provide at least some incentive for take up by fathers. As a result, these leaves are not expected to remove for 'too' long and, on balance, should carry at least some positive effects for female labour market participation.

In contrast, parental leaves paid through a flat rate benefit are more likely to have a mostly negative influence on female activity. These leaves tend to be long and as discussed in the previous section contain strong disincentives for take up by fathers. As a result, they may remove mothers from the labour market from an extended period of time[14], leading to decreases in mothers' human capital, reinforced gender roles and, by extension, a reduction or at least no increase in female labour participation.

Lastly, it is worth briefly expanding on the theory behind leaves targeted at fathers. Paternity leaves and any father-specific portions of parental leave – plus possibly also sharable parental leaves, to the extent that they are able to encourage fathers to take part – are designed to promote male participation in domestic labour (Korpi et al, 2013: 11).

[14] Although as noted in section **2.2.1**, payment rates on flat-rate parental leaves tend to be low. This may discourage mothers from using the leaves for long periods of time, in turn possibly offsetting some of the damaging effects of the lengthy entitlement.

This may work by altering male preferences for caregiving, or possibly by setting a care-sharing precedent at an important breakpoint in gendered labour specialisations – childbirth - where mothers often begin to build a comparative advantage in unpaid labour and fathers in market work (Blossfeld and Drobnič, 2001: 19). Much of the effect on gender differences in labour participation may be indirect and to take hold only in the medium- to long-run, but the idea is that an increase in male domestic work should allow women to expand their supply of market labour. It also remains possible though that having assumed some responsibility for domestic work, men may also reduce their own level of market activity.

Dual earner childcare policy

There are several ways of exploring the theoretical influence of public childcare policies on women's economic activity. For example, public childcare services can be seen as an in-kind or free at point of use public service that can be consumed only once the mother is in employment (Jacobsen, 1998: 363), or as a service that shifts the responsibility for childcare from the mother to the state, releasing the mother to pursue market labour (Korpi, 2010: S22). In both cases, however, the theory becomes a little complex once it is considered that the state might 'provide' childcare through cost subsidisation rather than direct provision. In this situation, perhaps the most useful perspective is to imagine *private* childcare as a cost on maternal employment that, in the absence of state support, is analogous to a mother-specific tax on wages (Jacobsen, 1998: 134; Blau et al., 2001: 112; Blau and Currie, 2003: 6; Jaumotte, 2003: 9), all within a basic static individual model of labour supply.

Simple neo-classical labour supply models start from the position that a rational welfare maximising individual allocates their labour based on the value they attach to an additional hour of market labour – or, more correctly, the goods they can purchase using the income from an additional hour of market labour – and the value they attach to an additional hour of non-market work (Mincer, 1984; Blau et al, 2001: 91-98). Rates of substitution between the two are assumed to diminish as time spent on either increases, so that non-market labour becomes more valuable as it becomes more scarce – that is, as the individual increases hours of market work – and vice versa. An individual's own preferred rate of substitution reflects a variety of factors. This includes their non-market productivity and ability to substitute goods bought using earned income for those that they would otherwise have been produced using non-market labour, as well as their 'tastes and preferences' that themselves may be heavily influenced by social norms, values

and expectations (Blau et al., 2001: 98). The level of market labour an individual finally chooses is determined by the number of hours at which the net market wage on offer for an additional hour of market labour is exactly equal to the value placed by the individual on an additional hour of non-market work. Should the net wage on offer be lower than the value placed by the individual on non-market labour at zero hours of market work – termed the reservation wage – then the individual will choose not to participate in the market at all (Blau et al., 2001: 100).

Assuming that childcare is the mother's responsibility alone, that all variants of childcare are of equal quality, and that it is not possible for the mother to use alternative informal forms of childcare, then market childcare can be seen as a fixed cost per hour that reduces the net wage rate on offer to the mother (Blau et al., 2001: 112; Blau and Currie, 2003: 6). Clearly, as the cost of market care increases, the net wage on offer decreases. The effect of the fall in net wages on the mother's preferred hours of market work is indeterminate – while the decrease in wages will increase the relative value of non-market labour and thus lead to a shift away from market work, the mother may also wish to compensate for the drop in income associated with the fall in net wages by increasing hours of market labour[15] (Blau et al, 2001: 107-109; Borjas, 2012: 37-38). Importantly, though, the effective tax should have an unambiguously negative impact on headcount participation – if the tax is sufficient to decrease net wages to a level below the mother's reservation wage, then the mother will leave the labour force entirely (Blau et al, 2001: 98; Blau and Currie, 2003: 6). This scenario becomes more complex once it is considered that mothers may have access to alternative forms of informal and often unpaid childcare, that individuals may derive other non-wage benefits from employment, or perhaps that parents share the responsibility for childcare (Blau and Currie, 2003). Nonetheless, the point is that private childcare generally acts as an effective tax on maternal employment that broadly discourages female activity whilst leaving male employment decisions mostly untouched.

Within this model, public childcare provision or cost subsidisation will promote female activity if it reduces or eliminates the implicit tax on maternal employment and therefore increases the net wage on offer to mothers (Blau et al., 2001: 112). Provisions may encourage further activity amongst mothers already in employment if they raise the marginal net wage by enough to induce at least an additional hour of market labour *and* the additional income does not lead to shift in preferences away from market work. More

[15] The two distinct effects of a change in wages are termed 'substitution' and 'income' effects, respectively (see Blau et al, 2001: 107-109).

definitely, public provision will promote female headcount participation if the decrease in the effective tax is sufficient to increase net wages above reservation wages for at least some mothers (Blau et al., 2001: 112). The full effect may be dampened somewhat if public provisions encourage mothers to switch from informal and unpaid sources of care to formal, state-sponsored childcare (Jaumotte, 2003: 9), but broadly a decrease in the costs of childcare should lead to at least some increase in female activity.

An additional consideration is that public childcare policies may also promote female activity through job creation, either directly in the case of public provision or indirectly by stimulating the market through cost subsidisation (Blau et al, 2001: 374; Mandel and Semyonov, 2006: 1916). Childcare as an employment sector has historically been female-dominated, due perhaps to conditions that are compatible with women's remaining care responsibilities, and possibly also because the skills required are well matched to those often developed by women (Mandel and Semyonov, 2006: 1916). If these conditions continue to hold as the sector expands, then public childcare policies may promote female labour through both demand and supply, that is, by creating jobs that are attractive to and demand many of the same women who are now able to participate in the market due to reduced care responsibilities.

General family support policy

As discussed earlier, general family support involves, for the most part, family-related tax and transfer policies, with child benefit and family-related tax subsidies given as common examples. These policies tend to be quite diverse and the exact effects on gender differences in economic activity are likely to depend upon the actual design of the policy at hand. The theoretical accounts given here concentrate mostly on fairly general forms of the two policies. The effects of 'general family support' leave and childcare policies on labour participation are not expanded upon here as fairly detailed explanations were given above and in section **2.2.1**.

Child benefits or family allowances are expected to have mostly negative effects on female participation[16]. This is likely to occur because, all else equal, any increase in non-labour income produces an 'income effect' on the labour supply decision that is likely to discourage market activity (Blau et al, 2001: 101; Borjas, 2012: 36). More specifically, the

[16] From a certain viewpoint – such as the 'difference' view of gender equity, for example - these cash transfers could be seen as beneficial for women's interests and independence if they are treated as some form of maternal wage. However, from the perspective of gender differences in employment they are expected mostly to inflate gender inequalities.

additional income derived from the transfer increases the ability of the individual to consume market goods and therefore increases the relative value attached to non-market labour, due to diminishing rates of substitution (Blau et al, 2001: 101; see above). All else equal, this should decrease preferred hours of market labour. Moreover, non-labour income also at least partially determines reservation wages (Borjas, 2012: 42). In certain cases, the additional non-labour income derived from the transfer may be sufficient to raise the individual's reservation wage above the net wage on offer, so that the individual is unwilling to work at all and exits the labour force completely.

Importantly, the effects of the transfer should be similar for both mothers and fathers until it is considered that the benefit is typically paid to or targeted at the mother based on perceived care responsibilities. In this situation the income effect may be stronger for or perhaps exclusive to the mother, leading to a decrease in female economic activity while leaving male labour supply decisions largely untouched (Jacobsen, 1998: 362). Jaumotte (2003: 9) points out that the transfer may have a more ambiguous impact on female activity if it is used as some form of childcare subsidy, or if the additional income is used to purchase other goods and services necessary for mothers to enter labour force in the first place. Nonetheless, the 'income effect' is expected to dominate (Jaumotte, 2003: 9).

Family-related tax breaks and subsidies – including joint taxation systems, marital and dependent spouse or partner allowances, dependent child allowances, and marital or 'head of family' and dependent child tax credits – are expected to have a similar 'income effect' on women's labour supply, to the extent that the additional income derived from the subsidy is perceived to 'belong' to the mother (Jaumotte, 2003: 9). Additionally, in a number of cases these tax subsidies are conditioned on a non-working spouse or partner – read: wife or mother – and are therefore removed once the partner enters employment, or at least once they work more than a certain number of hours per week. This is problematic for female economic activity because the withdrawal of the subsidy increases the effective marginal tax rate faced by the second earner, decreasing net wages and therefore preferred levels of maternal labour supply (Blau et al, 2001: 349; Jaumotte, 2003: 8). Tax breaks and credits aimed at families on low incomes are likely to have a similar effect on women's marginal tax rates, at least where eligibility is calculated on the basis of family income and withdrawal is not appropriately tapered (Blau et al, 2001: 349). Lastly, wherever family-related tax subsidies are premised or conditioned on a non-working mother there is also some danger that the policy will reinforce the perception that a male market income should provide for a dependent family, and therefore some risk that the subsidy will strengthen gender divisions of labour.

2.2.3. Family policy and gender job segregation and equality in occupational attainment

As touched on earlier, several authors argue that, simultaneous with any effects on economic activity, certain family policies may also have some influence on gender job segregation and women's career attainment (Ruhm, 1998; Blau et al, 2001; Mandel and Semyonov, 2005; Mandel and Semyonov, 2006; Pettit and Hook, 2009; Hegewisch and Gornick, 2011; Akgunduz and Plantenga, 2012; Thévenon and Solaz, 2013). For the most part these theorised effects are negative, in that certain policies are expected to increase the concentration of female employees in 'sheltered' feminised occupations and to reinforce 'glass ceilings' on women's occupational attainment. This gives rise to what Mandel and Semyonov (2005; 2006) call a 'welfare state paradox', whereby certain family policies at once promote women's labour market participation and constrain their access to desirable occupations and high status and highly paid positions.

Much of the theory on any such family policy 'trade off' concentrates on the effects of leave entitlements for mothers. Similar to the discussion above around links between leave policies and female economic activity, the effects of leave as a general policy type on segregation and women's occupational attainment is theoretically ambiguous – that is, leave entitlements have the potential to both soften and harden glass ceilings and to both promote and constrain women's relative access to high status and highly paid positions.

On the one hand, leave may advance women's position within the labour market if they promote female experience and productivity through increased job tenure or employment continuity. More specifically, entitlements may increase female human capital if they persuade women to return to the same employer following child birth and therefore support the retention of firm-specific skills and expertise (Blau et al, 2001: 363), or if they minimize any depreciation of human capital associated with childbirth by encouraging women to return to the market quicker than would otherwise be the case in the absence of any statutory provision. Additionally, leaves may boost women's productivity more indirectly if they incentivise women to invest in either general or specific human capital assets prior to parenthood in the knowledge that full labour market exit is not necessary upon childbirth (Korpi, 2000: 13). Whatever the mechanism, any increase in women's experience and productivity associated with leave should raise the market wage commanded and increase women's ability to compete for skilled positions.

However, leaves may also have concurrent damaging effects on women's relative

occupation attainment, particularly where the entitlements are of sufficient length as to allow the mother to remain outside of the labour force for longer than would be the case in the absence of any legislated provision. The likely mechanisms here are two-fold. Most immediately, an extended period of absence is likely to intensify the depreciation of human capital associated with childbirth and will certainly reduce female experience (Blau et al, 2001: 363; Hegewisch and Gornick, 2011: 124). The effects on productivity must be balanced against the retention of firm-specific skills and training, but it is feasible that a given woman's productivity may be lower following a lengthy leave than it would be if – in the absence of any provision – they had left the market entirely but returned swiftly in a different job.

Secondly, long female leaves may rationalise statistical discrimination if they increase the risks and non-wage costs – actual or perceived – associated with female employees, and in turn encourage risk-averse employers to avoid hiring women or to self-compensate through a reduction in the wages offered to female employees (Ruhm, 1998: 288; Mandel and Semyonov, 2006: 1914; Hegewisch and Gornick, 2011: 125). For unskilled or low-skilled positions, the non-wage costs associated with leave – such the hiring and training of temporary replacements – are likely only small so the effects of discrimination on women in low skilled positions are expected to be minimal (Mandel, 2012: 243). Conversely, costs are likely to be large for high-skill positions where candidates are scarce and where the role requires substantial on-the-job training and employer investment (Shalev, 2008: 432; Mandel, 2011: 171; Mandel, 2012: 243). As a result, long leaves are particularly likely to constrain women's relative ability to compete for high status positions at the top end of the earnings distribution but may have less impact on their ability to find low-skilled employment. As a possible knock-on effect, this may also lead to an increase in segregation and the concentration of female employees in 'feminised' – typically, low-skilled – occupations as women are driven to areas of the economy that are less hostile to female labour.

The eventual impact of leave on women's occupational attainment should depend on how a given leave programme or set of leave policies balances the two effects, with the assertion in the 'welfare state paradox' literature presumably that the latter, adverse effect generally dominates. It is worth noting here that these adverse effects may be offset at least in part by the provision of father-specific leaves or by sharable leaves that are designed to promote take-up by the father. Indeed, if entitlements and take-up were identical for mothers and fathers then any depreciation effects associated with childbirth and any risks and non-wage costs associated with the employment of prospective parents

must also be equal for men and women. It is feasible, then, that any 'trade off' effects associated with leaves may be less severe for those dual earner leaves that at least theoretically encourage male take-up. This is, however, dependent on the actual use of these schemes by fathers and – in the case of statistical discrimination – employers' perceptions of which parents are likely to take leave. As observed levels of male participation in sharable leave programmes tends to be low (Haas, 2003: 13; Naldini and Saraceno, 2008: 740; Haataja, 2009; Haas and Rostgaard, 2011; Naumann et al, 2013), it is possible and perhaps even likely that any adverse effects attached to leave will be driven mostly by the total length of general leave on offer to mothers regardless of the design or specific type of leave available.

Adverse effects associated with other family policies receive slightly less attention in the 'welfare state paradox' literature. That said, Mandel and others (Mandel and Semyonov, 2005; Mandel and Semyonov, 2006; Shalev, 2008; Mandel, 2011; Mandel, 2012) do outline a couple of mechanisms through which public childcare provisions – or, more specifically, public care services in general – may influence gender job segregation and women's occupational attainment. First, as employment in care services tends for whatever reason to be dominated by women, an extensive public care sector may pull many women into such 'female-type' jobs and thus contribute to the concentration of female employees in 'feminised' occupational niches (Mandel and Semyonov, 2006: 1916). The overall impact on gender job segregation may be softened somewhat once it is considered that organised care provision is likely to be more efficient that informal domestic care, and thus that public provision may still allow a sizeable proportion of women to enter the wider market with diminished care responsibilities. Nonetheless, the point remains that public care services may draw a number of women into comparatively low status care employment and, in effect, transfer gendered divisions of labour from the '*private sphere to the paid domain*' (Mandel and Semyonov, 2006: 1916).

A second and more multifaceted set of arguments revolve around employment practices and conditions in the public care sector. In particular, both Mandel and Shalev (Shalev, 2008; Mandel, 2011; Mandel, 2012) point out that as governments generally strive to be 'responsible' employers with relatively compressed pay structures, they are less likely to practice statistical discrimination and tend to offer comparatively high wages for what are perceived to be low skilled jobs. As a result, women drawn into the public care sector may benefit from relatively high wages in comparison to what they might command in the wider market and, moreover, may have greater and more equal access to relatively senior positions inside the sector (Mandel, 2012: 244). That said, the flip side of any compressed

pay structure is that top pay bands also tend to be relatively low. Thus, to the extent that female employees are drawn into such occupations, a large public care sector may simultaneously restrict women's ability to attain *high* wages (Shalev, 2008: 431; Mandel, 2011: 171).

2.2.4. Family policy and gender differences in employment across levels of education

So far, the theoretical relations outlined in this chapter mostly treat men and women and homogenous groups, that is, they look at the expected effects of family policy on the labour market position of 'men' and particularly 'women' as single categories of individual. However, it is theoretically likely that the influence of family policy will differ between subgroups or across individuals with varying demographic or socio-economic characteristics. One such characteristic that has received a good deal of recent attention is social class, and in particular how the effects of family policy are conditioned by the socio-economic advantages carried by education (Shalev, 2008; Mandel and Shalev, 2009; Mandel, 2011; Mandel, 2012; Korpi et al, 2013).

In itself, education has long been understood as an important determinant of labour market outcomes (Polachek, 1981; Polachek, 1995; Blau et al, 2001: 174; Polachek, 2005). Higher levels of education increase capabilities and labour productivity (Schultz, 1960; Becker, 1993), which in turn boosts earnings power, incentivises activity and increases access to desirable, top-level positions (England et al, 2012). Accordingly, across countries, highly skilled women are more likely to be employed, are likely to work longer hours and likely to earn higher wages than their less-educated counterparts (Evertsson et al, 2009; England et al, 2012). Gender differences, too, are generally less pronounced at higher education levels. Levels of participation, in particular, tend to be more equal between highly educated men and women, although in several countries the gender pay gap is larger amongst those who hold at least a Bachelor's degree (Evertsson et al, 2009; England et al, 2012)[17].

Against this backdrop, several authors – particularly Hadas Mandel and colleagues (Shalev, 2008; Mandel and Shalev, 2009; Mandel, 2011; Mandel, 2012) – challenge the assumption implicit in much comparative family policy research that the effects of policy are uniform across levels of education. Instead, they suggest the effects are 'classed', with

[17] Indeed, with the noted exception of wages, Evertsson et al go as far to conclude that '*it is almost as if higher social class* [measured by education] *neutralizes some, though of course not all, of women's gender disadvantages*' (2009: 236).

both the benefits and costs of family policy provision distributed unequally between those with differing levels of education (Shalev, 2008; Mandel and Shalev, 2009; Mandel, 2011; Mandel, 2012).

First off, Mandel and others (Shalev, 2008; Mandel and Shalev, 2009; Mandel, 2011; Mandel, 2012) argue that the effects of policy on economic activity are likely to be stronger for women with lower levels of education than for their highly educated counterparts whose participation is often high regardless of the policy setting (Shalev, 2008; Mandel, 2011; Mandel, 2012). Dual earner-carer leave policies, for instance, are more likely to promote participation amongst less educated women whose labour market attachment tends to be relatively weak. For highly educated women, the potential earnings typically associated with a strong education already provides both a large incentive and the resources necessary to return to the labour market soon after childbirth (Mandel, 2012: 244). Moreover, highly educated women also tend to hold comparatively positive attitudes towards maternal employment and dual earning (Crompton and Lyonette, 2005: 608; Shalev, 2008), so may be less susceptible to becoming specialised household workers upon parenthood. In contrast, women with less education generally command a lower market wage and on average tend to hold less favourable attitudes towards maternal employment (Crompton and Lyonette, 2005: 608). Thus, the security, attachment and reduction in search costs provided by job-protected leaves may be particularly effective at promoting employment continuity amongst new mothers with lower levels of education (Mandel, 2011: 162).

Likewise, public childcare provisions are also expected to be particularly valuable for less educated – typically, low paid – women (Mandel, 2012: 244). The possible mechanisms here are twofold. First, because the costs of market childcare are more or less constant regardless of income – that is, price of market care is for the most part fixed per hour – the effective tax placed on maternal labour by market care is proportionally larger for women on a lower wage. As a result, any increase in net wages associated with publicly provided or subsidised childcare will also be comparatively large for women on low wages, producing a stronger marginal effect on activity, especially where the increase is sufficient to lift net wages above the reservation wage (Shalev, 2008: 431; Mandel, 2012: 244). Second, because care service employment tends for whatever reason to be well matched to 'low-skilled' female labour, extensive public childcare provision and a large public care sector more generally may also be particularly effective at encouraging participation amongst less educated women through an increase in labour demand (Shalev, 2008: 431; Mandel, 2012: 244).

Mandel and colleagues pay less attention to tax and transfer policies, but here too it is feasible that any effects on economic activity may be conditioned by education. In particular, as less educated individuals tend to command lower market wages they also tend to be more exposed to any discouraging effects attached to changes in non-labour income, and specifically to the effects of changes in non-labour income on reservation wages (see section **2.2.2**). In this case, even if family-related tax and transfer policies cause increases in reservations wages that are similar across the board, it is women with low education who are most likely to see their wages fall below reservation level. As a result, it is possible that any effects of family-related tax and transfer policies on women's labour participation may be felt most strongly by women with lower levels of education.

Importantly though, Mandel and others also suggest that the possible adverse effects of certain family policies on women's careers are also likely to be shaped by education, with in this case highly educated women most exposed (Shalev, 2008; Mandel and Shalev, 2009; Mandel, 2011; Mandel, 2012). The starting point for their argument here is the observation that where the policy setting makes no special provision for female employees, many women with low career or earnings potential are likely to absent from the labour force, leaving mostly only those highly skilled or highly motivated women in employment (Mandel, 2009: 710)[18]. In such a selective and relatively 'gender blind' market, women's average relative occupational attainment tends to be high as the remaining skilled female workforce is to some degree able to – or, put differently, forced to – integrate alongside their male counterparts on fairly equal terms (Mandel, 2009: 710). In other words and simplifying slightly, where labour markets offer women no special terms of employment, highly skilled and educated women are able to compete at least to some extent with men for desirable and relatively senior jobs[19] even if less educated women are not able to participate at all[20].

[18] See Olivetti and Petrongolo (2008) for an empirical investigation into cross-national differences in the non-random selection of women into employment.
[19] This can be observed, for example, in the comparatively high female share of managers and low gender pay gaps in the highly selective southern European labour markets and to some extent also the United States (Mandel, 2009: 700).
[20] This is not to say that female employees in those countries that offer little in the way of family policy do not suffer at all from employer discrimination or that many employers do not carry conscious or unconscious gender biases. However, the point made by Mandel and others is that the provision of legislated 'female-friendly' entitlements in effect *guarantees* the differential treatment of male and female employees, since the two are offered (or essentially offered, where provisions such as parental leave are sharable) different terms of employment and thus carry systematically different costs and benefits for employers. In other words, the argument is that while women across most if not all countries suffer gender discrimination, the provision of 'female friendly' dual earner policies can or may institutionalise and thus inflate the practice.

Introducing 'female-friendly' dual earner policies may, however, produce an environment in which employers are reluctant to promote women to high-level, highly paid positions on account of the additional costs associated with gender-specific entitlements and regulations (Shalev, 2008: 432; Mandel, 2011: 171; Mandel, 2012: 243). Particularly relevant again are job-protected leaves for mothers and leave-driven statistical discrimination. As discussed above, the provision of leave may encourage employers to avoid hiring women for senior or specialised positions due to increases in the risks and non-wage costs – actual or perceived – associated with female employees (Shalev, 2008: 432; Mandel, 2011: 171; Mandel, 2012: 243). Of course, all women regardless of education may be subject to such discrimination should they apply for elite jobs. However, as it is highly educated individuals who are the most likely candidates for high-level positions – especially in the absence of leave and other family policy provisions – it is highly educated women who are most at risk from any adverse discrimination effects attached to leave entitlements. In short, as a group, women with high level qualifications are the most exposed to leave-driven discrimination, and have the most to lose (Mandel, 2012: 243).

Similarly, any adverse effects attached to public childcare provision and public welfare employment more generally may too be structured by education. As discussed earlier, governments tend to be relatively responsible employers and as such are less likely to practice statistical discrimination and are more likely to promote women to senior positions (Mandel, 2012: 244). However, as also noted earlier, public sector pay ceilings also tend to be low relative to the private sector. Thus, to the extent that highly educated women are drawn to senior public sector positions by female-friendly conditions, a large public welfare sector is likely to decrease women's ability to earn top wages and inflate gender pay gaps amongst highly skilled men and women (Shalev, 2008: 431; Mandel, 2011: 171).

Taking the two sides together, Mandel and others (Shalev, 2008; Mandel and Shalev, 2009; Mandel, 2011; Mandel, 2012) expect the effects of family policy provision to be skewed by class – dual earner provision should be beneficial mostly for women with low education, while many of the adverse or damaging effects associated with certain policies are likely to be absorbed mostly by their relatively advantaged, highly educated counterparts. Indeed, Shalev (2008) goes as far to suggest that an *absence* of dual earner provision is explicitly in the interest of advantaged women. From this perspective, then, the 'welfare state paradox' discussed in the previous section shifts to become some form of inter-class trade off with family policies concurrently promoting the interests low-skilled women and limiting those of their highly educated peers.

2.2.5. Summary of theoretical expectations

Bringing the previous three sections together produces a reasonably detailed theoretical account of the effects of family policy provision on gendered labour market outcomes. Dual earner leave and childcare policies should, theoretically, encourage female economic activity and help close gender gaps in labour market participation. Any effects are likely to be strongest for less educated women, although some impact may be seen across all levels of education. In contrast, general family support policies – including family-related tax and transfer policies, plus also certain leave and childcare programmes – are likely to discourage female activity and inflate gender differences in market participation. Again, it is feasible that women with lower levels of education may feel any effects strongest, although the theory here is perhaps a little under-developed.

Importantly, certain family policies may also have concurrent damaging effects on gender job segregation and women's relative occupation attainment. Central here are leave programmes, which may drive women into 'female-type' jobs and reinforce 'glass ceilings' by reducing female experience and encouraging employer discrimination. These effects may be mitigated somewhat where sets of leave entitlements are well designed, although this is dependent on employer perceptions and patterns of take-up. Notably, it is feasible that these adverse effects will be concentrated largely on highly educated women who are most likely to be candidates for high status and highly paid positions. Thus, together with the expected effects of policy on economic activity, it is theoretically possible that family policy as a broad category of provision produces some form of inter-class trade off that operates to the benefit of less educated women at the expense of the careers of their more educated counterparts.

2.3. Comparative empirical evidence on family policy and gender differences in employment

A fairly large empirical comparative literature tests and examines links between family policy provision and gender equality in employment. Many of these studies are cross-sectional in design, that is, they use and examine data on policy and employment outcomes that stretch across countries at a single point in time. This is certainly a sensible place to start, but cross-sectional comparative analyses do suffer from certain limitations, as discussed in more depth later in this section. More recently, several studies have adopted what might be termed a time-series cross-section (TSCS) approach, where data is

collected for a set of countries at multiple points in time. The addition of a time-series dimension helps these studies overcome some of the limitations inherent in cross-sectional comparative analyses (see section **2.3.2**). However, this TSCS literature is still in relative infancy, with relations between family policy and certain areas of gender equality in employment remaining under-researched.

This section reviews the existing comparative evidence on relations between family policy provision and gendered labour market outcomes, starting in the next section with the cross-sectional literature before moving on to explore the more recent 'over time' literature in section **2.3.2**. It should be noted here that unfortunately there is not space to review all relevant empirical and methodological aspects of the numerous studies covered. However, table **A.1** in appendix **A** (pp316-318) describes and summarises various methodological features of twenty key comparative family policy studies in more detail.

2.3.1. Cross-sectional evidence on family policy and gender differences in employment

To begin, several cross-section studies (Korpi, 2000; Mischke, 2011; Korpi et al, 2013) find that countries with more extensive dual earner policies tend also to be those with higher levels of female economic activity. Mischke (2011), for example, finds that female economic activity tends to be higher in countries with greater levels of dual earner provision, while Korpi (2000) find that gender differences in *inactivity* are generally smaller in countries that are generous providers of dual earner leave and childcare policies. Korpi et al (2013), meanwhile, test relations between configurations of family policy and women's employment on individual level data that stretch across 18 OECD nations. Amongst other findings, results suggest a large, positive and significant relation between dual earner policy and the probability that any given woman is employed. These results are generally consistent with well-established conclusions from other cross-sectional analyses operating outside of Korpi's theory (Gornick et al, 1998; Mandel and Semyonov, 2006; Misra et al, 2011; Hegewisch and Gornick, 2011). Gornick et al (1998), for example, show that motherhood employment gaps tend to be smaller in countries that are more extensive providers of policies – such as maternity and paternity leave and public childcare provisions – that are considered by the authors as 'supportive' of maternal employment.

In terms of specific policies, a number of cross-sectional studies find that leave entitlements for mothers have a mostly positive effect on female activity (Pettit and Hook,

2005; Mandel and Semyonov, 2006; Misra et al, 2011). Mandel and Semyonov (2006) look across 22 OECD and Eastern European countries and find a positive link between fully paid weeks of general leave and the female labour force participation rate, while Misra et al (2011) find that both maternity and parental leave have at least some positive effect on female working hours. These same studies also confirm that the impact of leave on activity may diminish as the entitlement becomes long – in that the marginal effect of leaves on female activity is negative past a certain number of weeks – although Misra et al (2011) show that the turning point is as high as two years and, more extreme, Pettit and Hook (2005) find that leaves can last up to three years before the marginal effect on maternal employment turns negative.

Similarly, public childcare provisions are also cross-sectionally associated with higher rates of female economic activity (Van Der Lippe and Van Dijk, 2002: 232; Pettit and Hook, 2005; Pettit and Hook, 2009). Using individual level data collected from 19 OECD and Eastern European countries and multilevel modeling techniques, Pettit and Hook (2005) show that a higher rate of enrolment in public childcare for children under three is associated with higher rate of maternal employment. Misra et al (2011) find something similar for public childcare coverage for children aged less than three, although they also find that provisions for children aged between three and six are ineffective at promoting the extent of female activity. This latter result may lend at least some weight to Korpi's (2000) argument that public childcare for older children is at least in part a family support policy.

Cross-sectional evidence on the effects of general family support policy is more limited. Both Korpi (2000) and Mischke (2011) show that female labour force participation rates are generally lower in countries that are generous providers of general family support policy, while Korpi et al (2013) find that the provision of family support policies decreases the probability of a given woman finding employment, albeit with the relation statistically insignificant in certain model specifications. Otherwise, cross-sectional comparative family policy research offers relatively few clues as to how family-related tax and transfer policies or those certain 'family support' leave and childcare policies influence female activity.

Importantly, a number of studies produce evidence in support of the theorised adverse effects of certain family policies on gender job segregation and women's occupational attainment (Mandel and Semyonov, 2005; Mandel and Semyonov, 2006; Misra et al, 2008; Mandel, 2009; Mandel, 2011; Mandel, 2012). In terms of broad provision, Mandel and

colleagues show in various articles (Mandel and Semyonov, 2005; Mandel and Semyonov, 2006; Mandel, 2011; Mandel, 2012) that gender differences in earnings and in the proportion of employees working in 'female-typed' jobs tend to be higher, and women's representation in powerful and high status positions lower, in countries that are '*characterised by progressive and developed welfare policies*' (Mandel and Semyonov, 2006: 1910), including extensive leave and childcare provisions and a large public welfare sector. With regard to specific policies, various studies show that the length and generosity of leave entitlements are associated with a lower female share of managers and a higher gender pay gap (Mandel and Semyonov, 2005; Mandel and Semyonov, 2006; Mandel, 2012). Likewise, Misra et al (2008) show that very long leaves inflate the motherhood wage penalty, that is, the decrease in earnings associated with motherhood having accounted for other factors. Lastly, a large public care sector is also associated with inflated occupational segregation and a decreased female share of managers (Mandel and Semyonov, 2006).

Notably, Korpi et al (2013) are critical of a number of these 'welfare state paradox' studies. They argue that many of the articles cited above do not adequately account for selectivity in the female labour force – in that, in countries that provide little in the way of family policy provision, the female workforce tends to be composed disproportionately of women with high skill and ability – and proceed to find that, after for controlling for socio-economic differences between women, women's access to high earnings is generally no worse in countries that are generous providers of dual earner policy (2013: 25). That said, their same data also show a gender pay gap at the 8th and 9th earnings deciles that is far larger in the Scandinavian countries – and, indeed, also the liberal countries – than in the conservative European states in particular (2013: 25).

Finally, a number of cross-sectional studies provide support for the argument that the effects of family policy vary with levels of education (Mandel, 2009; Mandel and Shalev, 2009; Mandel, 2011; Mandel, 2012; Korpi et al, 2013). First, while participation rates for women with high education are generally strong regardless of policy setting (Mandel, 2009), activity amongst less educated women tends to be high in countries that are strong providers of dual earner policy – namely, the social democratic Scandinavian countries – and comparatively very low in countries such as the conservative European nations where dual earner policies are relatively scarce (Mandel, 2009; Mandel and Shalev, 2009). Slightly problematically, participation is also generally strong amongst women with low levels of education in several liberal-type countries, particularly the United States, where provision of dual earner policy also tends to be low. However, Mandel and Shalev suggest

this is out of necessity rather than choice, as these countries also provide little in the way of general decommodification (Daly, 2000; Mandel and Shalev, 2009). More generally, Korpi et al (2013) find that dual earner provision increases female employment at all levels of education but with the effect largest for those with low education. Notably, they also find that general family support policy – generally ignored in Mandel and others' theorisation – has the largest depressing effect on employment amongst women with *moderate* qualifications (2013: 17).

Cross-sectional associations also provide at least some support for the suggestion that any adverse or damaging effects attached to certain family policies are particularly strong for highly educated women. Mandel (2012) finds that both the length of maternity leave and the proportional size of public welfare employment increase the gender pay gap amongst highly educated men and women, and provide some evidence to suggest that the size of the public welfare sector *reduces* gender differences in earnings amongst disadvantaged men and women. More broadly, Mandel (2011) shows that countries that are more generous providers of dual earner policy tend to see greater gender differences on a wide measure of equality amongst advantaged groups, including women's relative representation in senior positions and their relative access to top pay bands.

The limitations of cross-sectional comparative evidence on family policy and gender differences in employment

Taken together then, the cross-sectional literature largely supports the various theoretical relations outlined earlier in section **2.2**. Dual earner leave and childcare policies appear to encourage female economic activity generally, but with the effects strongest for women with low levels of educational attainment. These same policies also, however, appear to limit the careers of women by obstructing female access to highly paid, top level positions. Notably, there is some suggestion that any adverse effects attached to policy may be concentrated mostly on highly educated women, who also benefit little from family policy provision as their own market participation tends to be high irrespective of the policy setting.

If valid, these 'paradoxical' cross-sectional findings add a thick layer of complexity to the understanding of – and, more importantly, decision-making around – family policy provision. Indeed, if, in Mandel and Shalev's words, there is '*no unambiguously woman-friendly pattern of state intervention*' (2009: 29), then it becomes necessary for welfare states to balance against one another the interests of various competing female socio-

economic groups, bringing into question the political feasibility of extensive dual earner provision in all but the most solidaristic of states (Shalev, 2008: 438-439).

However, this cross-sectional empirical literature does suffer from limitations, many of which revolve around the literature's reliance on static associations – that is, on relationships based solely on between-country variation in family policy and between-country variation in gender equality in employment and a single point in time (Hegewisch and Gornick, 2011: 133). This may be problematic for two main reasons.

First, to be of real practical use to policy makers, family policy studies need to be able to identify whether a *change* in policy has some influence over gender equality in employment – in other words, the principle objective in policy research should be to isolate the effects of within-country variation in policy provision on within-country variation in outcomes (Fairbrother, 2014: 124). Unfortunately, the between-country associations produced by cross-sectional studies reflect only relations between variations that exist *across* countries at the point in time covered by the cross-section. Thus, cross-sectional studies are generally poorly suited to revealing the important relationships around policy change that may provide the empirical foundation of future policy developments (Frees, 2004).

To be clear, between-country variation must reflect and be driven by within-country change at some prior point in time – indeed, cross-sectional associations capture the net effects of all developments in policy and outcomes across the entirety of history up to the point captured by the cross-section (Baltagi and Griffin, 1984). It is possible, therefore, that both within-country and between-country relations will be similar or, ideally, identical, in which case cross-sectional studies may offer valuable clues as to the impact of policy on labour market outcomes. However, it requires strong assumptions to take this as given, at least without testing or validation (Fairbrother, 2014: 124). Between-country cross-sectional associations are likely to be complicated and contaminated by numerous complex and idiosyncratic events and processes that build up over the long run, and that influence how patterns of policy and employment stand at the time of the cross-section. Thus, using cross-sectional associations as some form of 'best guess' as to the impact of a change in policy on labour market outcomes risks producing misleading results and inferences (Fairbrother, 2014: 124).

Second, and related to the first, between-country cross-sectional statistical associations are often subject to omitted variable bias due to unobserved country heterogeneity or

country 'individualness' (Dougherty, 2006: 517). In other words, country outcomes often differ in ways that are not fully explained by the variables included in the analysis, either because the appropriate explanatory variable is unknown or because it is not or cannot be observed (Wilson and Butler, 2007: 104). At best unobserved heterogeneity causes an inefficient estimation of relations, but more commonly and more problematically unobserved factors often correlate with variables that are included in the analysis. This produces omitted variable bias as the 'true' effects of the omitted variable are misattributed on to, or away from, variables that are observed and are included in the analysis (Dougherty, 2006: 517).

For the family policy-gender equality case, isolating and attempting to control for such unobserved heterogeneity is likely to be important. This is because it is probable that variation in gender norms, values and other unobservable (or at least often excluded) societal-level characteristics specific to each country influence both gendered labour market outcomes (Pfau-Effinger, 1998; Van Der Lippe and Van Dijk, 2002; Pfau-Effinger, 2004) and also policies through political mechanisms. It would, of course, be desirable to include factors such as culture and values within policy analyses, as Pfau-Effinger (1998, 2004) has begun doing for women's employment and Jo (2011) has done for welfare policy analysis more generally. However, where this is not possible and to the extent that such unobserved factors hold influence over labour market outcomes, cross-sectional studies may over- or under-estimate relations between various policies and equality outcomes and as such produce biased or misleading results.

One solution to both of these problems is to expand measures of policy and equality across time, complimenting cross-sectional data with a temporal, time-series dimension. Including information on multiple countries at multiple points in time allows for the explicit estimation of within-country change relations – that is, relationships between within-country variation in policy and within-country variation in labour market outcomes – in addition to the usual between-country associations (Wooldridge, 2010: 453; Dougherty, 2006: 514). In other words, as far as data and statistical methods permit, stretching cross-national analyses over time allows analyses to explore the influence of *changes* in policy on developments in gender equality in employment. Moreover, repeatedly observing the same set of countries at multiple points in time assists with the identification of country heterogeneity or 'individualness' (Hsiao, 2003; Frees, 2004; Dougherty, 2006), thereby reducing the dangers of omitted variable bias. Taken together, the suggestion is that adding a temporal dimension to comparative data allows analyses to isolate the important 'policy change' relations and to verify the robustness of existing

cross-sectional findings (Fairbrother, 2014: 124).

2.3.2. Time-series cross-section evidence on family policy and gender differences in employment

A limited number of comparative family policy studies have moved towards data that extends across time as well as across countries (Winegarden and Bracy, 1995; Ruhm, 1998; Jaumotte, 2003; Ferrarini, 2006; Tranby, 2010; Nieuwenhuis et al, 2012, Akgunduz and Plantenga, 2012; Thévenon, 2013; Thévenon and Solaz, 2013; Nieuwenhuis, 2014). Most of these studies use time-series cross-section data, that is, aggregate or country level data collected for the same set of countries over a number of points in time. The exceptions are Nieuwenhuis et al (2012) and Nieuwenhuis (2014), who use what might be termed repeated cross-section data - individual or micro level employment data collected for various countries at multiple points in time[21]. In either case, the principle remains the same – by adding a longitudinal dimension to comparative data, analyses can control for country 'individualness' and examine relations between within-country change in policy provision and gender labour market outcomes.

This emerging 'over time' comparative literature provides considerable evidence on links between changes in family policy and gender differences in labour market activity, with all ten of the studies cited above covering at least some aspect of equality in economic activity. Several focus exclusively on the impact of changes in maternity and parental leave programmes (Winegarden and Bracy, 1995; Ruhm, 1998; Akgunduz and Plantenga, 2012; Thévenon and Solaz, 2013). In all cases, increases in leave policies are found to encourage female employment or labour force participation. Again, this holds only for changes up to a certain length (Akgunduz and Plantenga, 2012), although Thévenon and Solaz show that leaves can be extended by up to two-years before the marginal effect on the female employment rate turns negative (2013: 33). Two of these studies also find that extending leave increases female working hours and decreases differences in the depth or extent of economic activity (Akgunduz and Plantenga, 2012; Thévenon and Solaz, 2013).

A certain number of studies are more wide-ranging in their coverage of family policies (Jaumotte, 2003; Ferrarini, 2006; Nieuwenhuis et al, 2012; Thévenon, 2013). Both Jaumotte (2003) and Thévenon (2013) find that increases in public childcare expenditure

[21] The latter approach carries several benefits, particularly regarding the ability to control for and model the effects of individual level characteristics simultaneous with the effects of macro-level factors such as policy (Frees, 2004: 171). However, repeated cross-section data is limited in its availability, both in terms of available employment indicators and countries and years covered.

share a positive association with female labour participation, particularly part-time participation, while the latter also finds that female activity increases with the proportion of children aged under three in childcare, although their measure does capture both public and private provision. Others find that increasing 'general family support' tax and transfer policies may constrain female activity (Jaumotte, 2003; Nieuwenhuis et al, 2012). For example, using repeated cross-section data that stretch across 18 OECD countries and the years 1975-1999 and multilevel modelling techniques, Nieuwenhuis et al (2012) find that increases in family tax subsidies and child allowances decrease female employment and maternal employment, respectively. Ferrarini (2006), meanwhile, finds that changes in a broad composite measure of general family support are negatively related to female economic activity, although the relation does fall just short of statistical significance.

These studies are not perfect. Indeed, as touched on in the introduction to the thesis and as discussed in more depth later in chapter **3**, several may suffer from certain issues relating to the methods and statistical techniques used. For instance, a number (e.g. Winegarden and Bracy, 1995; Jaumotte, 2003; Ferrarini, 2006; Nieuwenhuis et al, 2012) use as dependent variables measures that reflect female outcomes – as opposed to gender differences in outcomes – only, which opens up results to bias from any wider determinants of variation in the general or overall level of the given outcome[22]. Moreover, many (e.g. Ruhm, 1998; Jaumotte, 2003; Akgunduz and Plantenga, 2012) appear to offer no correction in their models for statistical complications – namely, contemporaneous and serial correlation of errors – that are likely to occur as a result of repeatedly observing the same set of countries over time (see Beck and Katz, 1995; Plümper et al, 2005; chapter **3.4** and appendix **B.4** (pp. 330-332)). Both of these technical issues could potentially have a considerable impact on results. Nonetheless, at face value at least, these existing 'over time' comparative studies provide a fair amount of support for both theorised relations between family policy and gender differences in economic activity and also for the cross-sectional literature.

However, far fewer 'over time' studies examine the impact of changes in family policy on gender job segregation and equality in occupational attainment, and even less the influence of changes in policy on gender differences in employment outcomes across levels of education. With regard to the former, two articles (Ruhm, 1998; Thévenon and

[22] As an example, using the female labour force participation rate – rather than the gender gap in the labour force participation rate – as a dependent variable means that, if unaccounted for, results may be open to bias from any wider processes that determine variation in the overall labour force participation rate. To some extent at least, taking the gender difference helps control for this wider influences (see chapter **3.3**).

Solaz, 2013) do explore links between changes in leave entitlements and the gender pay gap. Using a time-series cross-section dataset that covers nine European countries and the years 1968-1993 and a two-way fixed effects 'difference-in-difference-in-difference' regression model, Ruhm (1998) shows that women may pay for extensions to maternal leaves through decreased relative hourly wages, perhaps to the extent of a 3% drop following a 40 week increase in leave. Thévenon and Solaz (2013) find a similar relation, although notably their results suggest that the effects of leave on the gender pay gap diminish fairly sharply as the length of the extension grows.

Akgunduz and Plantenga (2012) go a little further to explore the impact of changes in leave on the share of women in managerial and professional occupations, as well as the gender pay gap. Using a similar technique to Ruhm (1998) and a sample that covers 16 European countries from 1970-2010, they show that extensions to leave constrain female representation amongst managers and professionals – although the relation is significant only at the 10% level – but notably also find no statistically significant relation between changes in leave and the gender pay gap. These three studies alone (Ruhm, 1998; Akgunduz and Plantenga, 2012; Thévenon and Solaz, 2013), however, represent the extent to which the comparative 'within-country change' literature covers associations between changes in family policy and gender job segregation and equality in occupational attainment[23]. While valuable, they are not comprehensive – all three focus only on the effects of leave policies, and none directly cover aspects important to the both theory and cross-sectional conclusions, such as the impact of policy on gender job segregation and women's ability to reach high wages.

Only one comparative study (Nieuwenhuis, 2014), meanwhile, explores the impact of changes in policy on gender equality in employment at differing levels of education. Based on a micro-level dataset spanning 17 OECD countries and the years 1980-1999, Nieuwenhuis (2014) uses multilevel techniques to examine the effects of leave and transfer policies on the motherhood employment gap for women with varying levels of education. Notably, certain findings are the direct opposite of those found in the cross-sectional literature – while the impact of changes in family allowances does not differ

[23] A further study, Tranby (2010), uses a sample that stretches across 14 OECD countries and the years 1960-2008 and covers both the gender pay gap and occupational segregation. However, the statistical technique used by Tranby – random coefficients models – estimates pooled relations based on all variation, be it between- or within-country, without distinguishing between the two. As a result, Tranby implicitly assumes between- and within-country relations are identical, which may lead to misleading results should the two differ (Fairbrother, 2014: 129). In any case, it cannot be said that Tranby's findings reflect the important 'change' relationships only, and thus this study is not fully included in this review.

across levels of education, the effects of changes to maternal leaves on employment status are found to be stronger for mothers with *more* education (2014: 108). This result certainly raises questions about the validity of the cross-sectional findings outlined earlier. More broadly, though, this solitary study clearly does not provide a comprehensive examination of the effects of changes in policy across levels of education, particularly as it does not look to cover any adverse effects of policy on segregation and women's careers. As a result, evidence on the theorised inter-class trade off effects attached to certain family policies continues to rely almost entirely on cross-sectional data and analyses.

2.4. Conclusion

Comparative studies have produced a number of valuable insights into how state legislated family policies may, as macro factors, influence variations in gendered labour market outcomes. Family policy may affect gender equality in economic activity – both positively, in the case of dual earner-type leave and childcare policies, and negatively in the case of general family support policies – but may also inadvertently inflate gender job segregation and strengthen 'glass ceilings' on women's career. Notably, these effects may be structured by education, producing some form of inter-class policy 'trade off' where certain family policies work mostly to the benefit of less educated women while simultaneously limiting the opportunities of their highly educated counterparts.

However, the empirical side of this comparative literature does have its limits. In particular, much of the literature continues to rely on cross-sectional associations and on cross-country differences in policy provision and employment outcomes only. An emerging 'over time' quantitative comparative literature looks to overcome at least some of the limitations inherent to cross-sectional associations by complimenting cross-national data with a time-series dimension. Yet, this 'over time' literature is far from complete. While several studies examine the effects of changes in policy on gender differences in labour market activity, less attention has been paid to the impact of changes in policy on gender job segregation and occupational attainment. Research on the effects of changes in policy on gender differences across differing levels of education, meanwhile, remains severely underdeveloped. This thesis aims to address these gaps through an empirical investigation into relations between within-country variation in family policy and within-country variation in the several different areas of gender equality in employment covered above.

The next chapter is concerned with the methods used throughout the thesis to produce this empirical investigation. It details the sample, data, indicators, and statistical techniques used to analyse links between changes in policy provision and developments in gender differences in employment outcomes.

Chapter 3. Methods and research strategy

This thesis looks to answer its research questions through an empirical examination of links between changes in family policy and various gendered employment outcomes that stretches across twenty OECD countries and the years 1985-2010. In terms of broad research strategy, the study takes the form of a 'large-N' variable-oriented quantitative comparative investigation, in that its focus is on examining relations between quantitative variables that are populated by the country cases in the sample[24]. More specifically, it looks to use quantitative data drawn from the twenty sample countries and twenty-six sample years to isolate and understand relationships between variables that represent a range of family policies and labour market outcomes (Landman, 2000: 24; Hantrais, 2009: 32). Accordingly, analysis is conducted primarily through statistical techniques.

The 'large-N' quantitative approach is common in the comparative family policy literature – to varying degrees, all of the empirical studies reviewed in chapter **2.3** could be said to have used such a strategy – but does have its drawbacks. In particular, it requires measures of both policies and outcomes to be simplified and abstracted somewhat in order to maintain equivalence of concepts over the sample, and it restricts the depth and breadth of available indicators due to the need for data to be comparable across all countries and years (Landman, 2000: 25, 38). However, the 'large-N' approach also benefits from the ability to make use of a large sample – and, therefore, to produce inferences that are less likely to suffer from selection bias – and, through the use of statistical methods, the ability to exercise at least some level of statistical control (Landman, 2000: 25, 49). For these reasons, and following much of the comparative family policy literature, the large-N variable-oriented quantitative comparative approach is considered the most appropriate comparative strategy for answering the thesis' research questions (see appendix **B.1** (pp. 317-320) for a more detailed discussion).

In terms of specifics, the thesis measures family policies through eleven quantitative country-level indicators based loosely around Korpi's (2000) conception of family policy types (see chapter **2.2.1**). Three measures reflect the provision of dual earner-carer leave policies, three capture dual earner childcare provisions, and three indicators measure general family support policies. The remaining two family policy indicators are alternative

[24] As opposed to a 'small-N' case-oriented comparative approach, where more emphasis is placed on examining in depth and detailed the country cases themselves (Landman, 2000: 27). See appendix **B.1** (pp. 317-320) for a more detailed discussion of comparative research strategies.

measures of leave programmes, used for reasons explained later on in this chapter. Gendered employment outcomes, meanwhile, are measured by eight quantitative indicators organised into three sets around the thesis' three research questions. Two indicators are chosen to capture gender equality in labour market activity, and three measure gender segregation and equality in occupational attainment. A further three indicators are used to capture gender equality in employment across levels of education. In all cases, these indicators are measured at the country-level.

Analysis is conducted primarily through time-series cross-section regression, and specifically through two-way fixed effects multiple linear regression. This technique does have its drawbacks though, particularly around the transparency of results. Accordingly, the thesis complements its regression analyses with detailed descriptions of changes and developments in the measures of both family policy and employment outcomes. These descriptive analyses offer both preliminary answers to the thesis' three research questions, and provide an empirical background against which the results of the more formal regression analyses can be discussed.

This chapter details and justifies these various methodological decisions in some depth. It starts in section **3.1** with a discussion of the size and scope of the thesis in terms of countries and years covered. Sections **3.2** and **3.3** concentrate on data and indicators, with the former covering the thesis' measures of family policy and the latter its indicators of gender equality in employment. Lastly, section **3.4** describes and justifies the thesis' chosen methods of analysis, with particular attention paid to the technical specification of the linear regression models. It is worth noting here that this chapter is fairly lengthy, at least as methods chapters go. In large part, this is because many aspects of the method used are common or similar across empirical chapters, so to avoid repetition and save on space it is considered best to covers all the thesis' empirical analyses here in one go, with only brief reminders given in each empirical chapter.

3.1. Size, scope and sample

This thesis makes use of a sample that stretches across twenty OECD countries – Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, the United

Kingdom and the United States – and the twenty-six years between 1985 and 2010[25]. These countries and years are selected for both theoretical and practical reasons, as discussed below. However, it is recognised that the use of this specific sample limits the scope and generalisability of results. Countries have not been randomly selected and are, of course, not representative of some wider population of countries. Likewise, the time period used has not been drawn randomly from a larger pool of possible time periods. As a result, any findings and conclusions emerging from analyses in this thesis cannot be used to make firm predictions or concrete generalised inferences to countries and periods other than those examined.

To some degree, the countries used here are dictated by those also used in the existing quantitative comparative family policy literature. It is important for this study to maintain a reasonably similar sample base to the literature so as to increase comparability of results, particularly with existing cross-sectional research on occupational attainment and on the effects of policy across levels of education. Table **3.1** (overleaf) shows the countries used in twenty key family policy-gender equality studies, with the countries selected for use in this thesis in italics. As is apparent, the countries used here are, generally, also those most often used in the literature – all twenty countries selected have been used in at least five of the existing studies, and the eighteen most frequently sampled countries are all included here.

That said, the exact set of countries used is also determined by a compromise between data availability, conceptual equivalence, and, not least, the need for a wide and theoretically relevant evidence base. From a broad perspective, the twenty sample countries share a reasonable number of similarities. All are relatively economically advanced, liberal capitalist democracies and all are well-established members of the OECD. This relative similarity aids the transferability of policy and employment concepts, and importantly increases the availability of comparable policy and labour market data. Of those countries included in existing family policy studies but excluded here, Switzerland and Japan could also be said to meet these criteria. However, Switzerland is omitted because family policies are determined entirely at the cantonical level (FSIO, 2009) – and, as a result, it cannot provide a coherent set of macro level family policies – while Japan is excluded due to a lack of comparable labour market data. The Eastern European countries sometimes covered in the literature are also not included here – due in part to their

[25] Although it should be noted that the exact set of countries and years used differ slightly across models depending on the availability of data for and missing cases on the various dependent variables (see chapter 3.3).

transitions from communism to capitalist democracy coinciding with the period of examination[26], but also because of a scarcity of historic data on family policy provision – neither are certain other East Asian and Latin American countries – such as South Korea and Mexico, respectively – largely because the labour market position of women in these countries is so different from those in the sample countries that comparison may become difficult[27].

Table 3.1. **Countries used in twenty key comparative family policy studies and their frequency of inclusion**

Country	Frequency of inclusion	Country	Frequency of inclusion
France	*20*	*Spain*	*11*
Germany	*20*	*Greece*	*8*
Sweden	*20*	Czech Republic	7
Netherlands	*19*	Hungary	7
United Kingdom	*19*	*Portugal*	*7*
Belgium	*18*	Switzerland	6
Denmark	*18*	Israel	5
Finland	*18*	Japan	5
Austria	*17*	*New Zealand*	*5*
Canada	*17*	Poland	4
Italy	*17*	Slovak Republic	4
Norway	*17*	Russia	3
United States	*17*	Iceland	1
Ireland	*16*	Korea	1
Luxembourg	*13*	Mexico	1
Australia	*12*	Turkey	1

Studies included: Winegarden and Bracy (1995); Gornick et al (1998); Ruhm (1998); Juamotte (2003); Pettit and Hook (2005); Mandel and Semyonov (2005; 2006); Ferrarini (2006); Misra et al (2008); Tranby (2010); Mandel (2011); Mischke (2011); Misra et al (2011); Akgunduz and Plantenga (2012); Mandel (2012); Nieuwenhuis et al (2012); Korpi et al (2013); Thévenon(2013); Thévenon and Solaz (2013); Nieuwenhuis et al (2014).

However, the twenty sample countries are also reasonably diverse in terms of both family policy provision and levels of gender equality in employment. Table **3.2** groups the countries used by some general form of family policy typology as derived and adapted

[26] This issue could also be extended to post-reunification Germany. A lack of employment data across the period of examination prevents a separate analysis of the former East and West German areas, and Germany is considered too important a case to exclude. To avoid any statistical problems relating directly to reunification, all years prior to 1991 are excluded for Germany.

[27] For instance, gender difference in labour market activity are exceptionally large in Mexico – even by 2010, the gender gap in labour force participation rates (15-64 year olds) in Mexico was – at 37 percentage points – over twice the OECD average of 18 percentage points (OECD, 2013d). Similarly, gender gaps in occupational attainment are far wider in Korea – and to a large extent also Japan – than in the other twenty sample countries. Gender pay gaps in Japan and Korea are safely among the largest in the OECD, while the female share of managers in both is well under half the OECD average (OECD, 2013c).

from the typologies produced by Esping-Andersen (1999), Lewis (1992), Korpi (2000), Leitner (2003) and Misra et al (2006). As is clear, the sample includes several representatives from each of the usual family policy country clusters, and as result contains a variety of approaches to family policy and an assortment of policy configurations, in the cross-section at least. This diversity is important, since the sample needs to contain a certain level of variation in order to provide a good natural evidence base for an assessment of relations between policy and employment.

Table 3.2. **Country sample for the thesis with countries sorted according to general family policy country groups**

Country	General family policy country groups
Denmark	Scandinavian
Finland	
Norway	
Sweden	
Belgium[1]	Conservative European
France[1]	
Austria	
Germany	
Ireland	
Luxembourg	
Netherlands	
Greece	Southern European
Italy	
Portugal	
Spain	
Australia	Liberal
Canada	
New Zealand	
United Kingdom	
United States	

Source: Adapted from Esping-Andersen (1999); Lewis (1992); Korpi (2000); Gauthier (2002); Leitner (2003) and Misra et al (2006)

1. Belgium and France are partially separated from the remaining conservative European countries to reflect the observation made by many (e.g. Esping-Andersen (1999), Leitner (2003) and Misra et al (2006) that these two deviate slightly from the other conservative European countries in the extent to which they provide public childcare services.

Similar considerations regarding data availability, relevance and usefulness also lead to the selection of the years 1985-2010. Given that this thesis looks to explore the impact of changes in family policy on gender equality in employment, it is necessary for the period covered to be of sufficient length to capture a good level of within-country variation in policy provision. At the same time, however, the time period should not be so lengthy as to necessitate sacrifices in the quality of data and indicators employed.

Existing 'over time' comparative family policy studies generally use a period that is longer or that starts a little earlier than 1985-2010 (see table **A.1** in appendix **A** (pp. 314-316) for more detail). Ruhm (1998), for example, covers the period 1969-1993, Ferrarini (2006) 1970-2000, and Akgunduz and Plantenga (2012) 1970-2010. Most comprehensively, Tranby (2010) uses data that stretches across 1960-2008. However, use of such an extended period does carry costs. In particular, comparable and high quality employment and family policy data are increasingly scarce for earlier years, so examining a longer time period often leads to restrictions in the countries or indicators used. Ferrarini (2006), for example, cannot include indicators of public childcare policy in his investigation. Tranby (2010), meanwhile, is forced to present several indicators of family policy in dichotomous yes/no form[28], and cannot include Spain and Greece for historical and presumably also data reasons.

The period 1985-2010 represents something of a compromise between competing demands for length in time and depth in terms of data availability. One the one hand, research suggests that these years at least partly capture a period of general expansion in family policy provision[29]. Much of the existing research on developments in family policy is based on in-depth country case studies (e.g. Lewis and Campbell, 2007; Seeleib-Kaiser and Toivonen, 2011; see Ferragina et al, 2013), but the few existing 'large-N' comparative analyses do find widespread developments in policy provision across countries over the 1980s, 1990s and 2000s. Ferragina et al (2013), for example, suggest the years 1980-2008 are characterised by a 'socialisation' of the family and a general expansion of in the provision of female-friendly policies across most OECD countries. Gauthier (2002) finds more disparate change, but a relatively common pattern of increase across 22 OECD countries nonetheless (see chapter **4** for a more in depth review and examination of family policy change). Accordingly, the years 1985-2010 should contain a good level of within-country variation in family policy provision.

On the other hand, a relatively good pool of comparable employment and particularly policy data are also available across the twenty sample countries for the years 1985-2010.

---

[28] This is problematic because it simplifies the policy picture and in many cases prevents indicators from properly reflecting variations in family policy provision.

[29] Notably, the years 1985-2010 also capture at least part of a period of strong interest for studies of change in the welfare state more generally. In contrast to the trends in family policy provision, these years reflect a period marked by increasing pressure on the welfare state from de-industrialization and economic globalisation (Held et al, 1999) and, arguably, consequential welfare state retrenchment (Gauthier, 2002; Korpi and Palme, 2003; Starke, 2006; Ferragina et al, 2013) and shifts towards the 'competition state' (Cerny and Evans, 2003; Horsfall, 2011).

Of course, the exact indicators used remain subject to constraints and several continue to contain missing data for certain countries and years (see sections **3.2** and **3.3** later in this chapter). However, for years earlier than 1985 data on public childcare policy are particularly limited, while data for certain tax and transfer policies also become troublingly scarce with the OECD publishing statistics for only a select few countries prior to the mid-1980s. Taking considerations together then, starting at 1985 allows for the thesis to use measures of family policy that are more detailed and comprehensive than would be the case with a longer time period, while also providing a sample base that should contain sufficient within-country variation to explore the impact of changes in policy on gendered employment outcomes.

3.2. Measuring family policies

Family policies are measured throughout this thesis by eleven country-level quantitative indicators. As touched on in the introduction to this chapter, nine of the eleven indicators represent the thesis' 'main' or primary measures of family policy. These nine measures are themselves organised into three sets based loosely on Korpi's (2000) distinction between types of family policy (see chapter **2.2**). Three indicators are used to measure dual earner-carer leave policy, three capture the provision of dual earner childcare policies, and three measure general family support provisions. These nine main indicators are used mostly as measures in their own right, but also in certain parts of the thesis as components in three policy indices that are used to summarise provision of the given family policy type (see later in this section). The remaining two indicators are alternative measures of leave policy, used for reasons explained a little later on.

The following subsections describe and justify the design of the eleven indicators of family policy. Section **3.2.1** concentrates on the nine main indicators. It outlines each indicator individually and briefly describes the construction of the three family policy indices. **3.2.2** covers the two alternative measures of leave policy, while section **3.2.3** outlines how the thesis deals with missing data on the measures of family policy. Descriptive statistics for all eleven indicators are given in table **3.3** (overleaf), while for reference full results for each indicator – including a map of any missing data points – in each country and year are shown in tables **C.1-C.11** in appendix **C** (pp. 342-352).

Table 3.3. **Descriptive statistics for the indicators of family policy**

		Indicator	N	% missing	Mean	Standard deviation	Between-country standard deviation	Within-country standard deviation	Minimum	Maximum
Dual earner-carer leave	1	Mother-specific earnings-related job protected leave, in effective weeks	514	0%	10.47	5.91	5.84	1.51	0.00	21.28
	2	Father-specific job protected leave, in effective weeks	514	0%	1.59	3.33	2.15	2.58	0.00	19.48
	3	Gender-neutral earnings-related job protected parental leave, in effective weeks	514	0%	5.63	10.44	9.95	3.70	0.00	46.29
Dual earner childcare	4	Proportion of children under three years of age in public or publicly supported childcare	200	61%	13.76	14.63	14.05	4.92	1.00	4.92
	5	Proportion of children between three and six years of age in publicly run pre-primary education or in primary school	408	21%	60.44	17.36	15.33	8.84	11.80	97.11
	6	Public expenditure on childcare services per child aged under six (US$ 1000's, 2005 prices 2005 PPPs)	469	9%	2.41	2.25	1.94	1.20	0.00	9.43
General family support	7	Child benefit per month for two chlldren, as a proportion of average earnings (%)	514	0%	7.29	4.15	3.34	2.55	0.00	19.31
	8	Tax support for the family (%)	471	8%	5.74	4.59	4.45	1.94	-2.14	21.27
	9	Flat-rate job protected parental leave and childcare leave available to mothers, in effective weeks	514	0%	6.62	12.02	11.15	5.02	0.00	57.49
Alternative leave	10	Total maternity and parental leave available to mothers, in effective weeks	514	0%	19.60	19.60	12.85	4.63	0.00	56.58
	11	Childcare leave, in effective weeks	514	0%	4.30	10.85	10.03	4.60	0.00	48.77

3.2.1. Nine main indicators of family policy

Dual earner-carer leave policy

The first three indicators are based around the leave side of Korpi's dual earner-carer family policy type. As discussed in chapter **2**, not all leave policies can be classified as 'dual earner'. While most job-protected leaves have the potential to encourage female employment – either by promoting employment continuity and attachment in the case of leaves aimed at mothers, or by encouraging male caregiving in the case of father-focused leaves (Korpi, 2000: 13; Jaumotte, 2003: 11; Misra et al, 2011: 143) – some may also reinforce female domestic specialisation and solidify gendered divisions of labour, especially where they are long and low-paid (Ferrarini, 2006: 47). Accordingly, these three indicators look to capture only those leave policies that are, on balance, structured in such a way as to promote female participation and equality in economic activity (Korpi, 2000: 13; 2010: s22; see chapter **2** for more detail).

Indicator 1. Mother-specific earnings-related job protected leave, in effective weeks

This indicator measures total weeks of job-protected leave that are reserved for exclusive use by the mother and that are paid through an earnings related benefit. In almost all cases this means weeks of maternity leave. However, because some countries do not hold programmes explicitly labelled as maternity leave, but rather reserve a portion of parental leave for the mother, this indicator also includes any weeks of parental leave that share the characteristics of maternity leave – that is, weeks of job-protected leave that are designated for use by the mother and that are paid through an earnings-related benefit[30]. Following Korpi (2010), Engster and Olofsdotter Stensöta (2011) and Mischke (2011), amongst others, all weeks of leave are multiplied by the average wage replacement rate for the typical female earner across the duration of the leave, so as to present the indicator in 'full-time equivalent' form. In other words, mother-specific leaves are presented as the 'effective' length in weeks if the leave had been paid at 100% of average female earnings. As a result, unpaid leaves – which offer few incentives for take-up (Finch, 2006: 119) – are discounted entirely. Data for this indicator come from a variety of sources (see 'Data

[30] The earnings-related component does not always form part of a strict definition of 'maternity leave', but is a part of Ferrarini's definition (2006: 18), as well as a part of the operationalisation of maternity leaves in other studies operating within Korpi's framework (Korpi, 2000; 2010; Baeckman and Ferrarini, 2010; Korpi et al, 2013). In addition, empirically, across the 20 countries used here all maternity leaves are paid through an earnings-related benefit. The only exception is the United Kingdom, where the maternity benefit is only partially earnings-related.

Sources'), with Gauthier (2011a) the primary source. There is no missing data.

Indicator 2. Father-specific job protected leave, in effective weeks

Indicator 2 reflects total weeks of job-protected leave that are reserved for exclusive use by the father. It is the sum of the maximum weeks of paternity leave, plus any weeks of parental leave that are reserved for the father and any bonus days associated with father take-up[31]. Importantly, this includes all father-specific weeks paid by either an earnings-related or flat rate benefit, but not unpaid leave as these provide no incentive for take up. Again, prior to summation, weeks of leave are multiplied by the appropriate replacement rates in order to generate full-time equivalents. Data for this indicator were collected by the author and come from a wide range of sources (see 'Data Sources'). There is no missing data.

Indicator 3. Gender-neutral earnings-related job protected parental leave, in effective weeks

Indicator 3 measures the number of weeks of job-protected earnings-related parental leave that are available for use by either parent. Importantly, it captures only those sharable leaves that are paid via an earnings-related benefit, and does not include unpaid schemes or those paid through a flat-rate benefit (see chapter **2.2** for justification). The indicator is calculated by removing any mother- or father-specific weeks from the total number of weeks of earnings-related job-protected parental leave. Once again, weeks of leave are multiplied by the average wage replacement rate for the average worker in order to generate the 'effective' full-time equivalent length of the leave. Data for this indicator come from a number of sources, many of which were collected by the author (see 'Data Sources'). There is no missing data.

Dual earner childcare policy

The second set of family policy indicators are based on the childcare side of Korpi's (2000)

[31] Bonus days of parental leave are sometimes awarded when the father takes a certain number of weeks of sharable leave. Here, the bonus days are treated as father-specific leave if i) they can be used only by the father, as is the case in Finland since 2003 (Ellingsaeter, 2009: 8; OECD, 2013c) or ii) if they are conditional on the father taking a certain number of days of non-reserved gender-neutral leave – as is the case in Germany since 2007 (Moss and Wall, 2007: 161) – in which case the bonus days are effectively reserved for the father so long as the number of bonus days does not exceed the number of days required for qualification. Bonus days that can be used by either parent and that can be earned by fathers taking leave that is already father-specific are not counted here.

dual earner policy type. In other words, the second three indicators aim to reflect those public childcare policies that look to promote female labour market activity by reducing maternal care responsibilities and increasing returns to second earning (Korpi, 2000: 13; Misra et al, 2011: 144; Blau and Currie, 2003). Ideally, these indicators would reflect the extent of public provision, the level of any cost-subsidisation and the remaining cost to parents, plus the hours and quality – however measured – of any publicly provided or funded care (Lohmann et al, 2009: 41-45). Unfortunately, however, comparable data do not exist for many of these aspects of public childcare policy, particularly as measures are required to stretch across time as well as space[32]. For example, while limited cross-sectional information exists on childcare costs (Bradshaw and Finch, 2002) and the hours and quality of childcare (Gornick and Meyers, 2003), there are no data available on these areas of childcare in time series form.

Because of these restrictions, the following indicators focus mostly on only those aspects of dual earner childcare policy for which at least some data exist and which also, not by coincidence, tend to be covered most often in the literature (see table **A.1** in appendix **A** (pp. 314-316)). The indicators look to cover the degree of public service provision for both very young and for pre-school children, and also the extent of overall public support for childcare services. It is acknowledged that this narrowed focus means that the following indicators cannot fully reflect dual earner childcare provision – and results should be interpreted as such – but it does allow for measures to go at least some way towards capturing patterns and developments in state childcare policies.

Indicator 4. Proportion of children under three years of age in public or publicly supported childcare

Indicator 4 covers the proportion of children aged between 0 and 3 years of age in publicly run, funded or supported childcare places. The indicator reflects state efforts to directly provide services for very young children, although unfortunately due to a lack of data it cannot capture the degree of public provision in terms of hours-per-week or weeks-per-year. Data for this indicator are compiled from a number of sources (see 'Data Sources').

[32] Indeed, in their 'over time' studies both Ferrarini (2006: 18) and Nieuwenhuis et al (2012) do not measure childcare policy at all, presumably for data reasons, while Jaumotte (2003: 55) relies on public expenditure on childcare only. Thévenon (2013), meanwhile, uses data derived from EU-SILC on the proportion of children enrolled in 'formal childcare', that is, in any kind of organised childcare regardless of whether it is publicly or privately provided. However, using 'formal childcare' enrolment rates as a proxy for public policy is dangerous. Changes and developments in overall enrolment rates may not follow or accurately reflect state childcare policies (Keck and Saraceno, 2011). Furthermore, overall enrolment rates are likely to provide an endogeneity risk in statistical analyses, as they are likely to be driven in large part by female labour market activity.

This indicator suffers from a very high missing data rate (61.1%) which, of course, reduces the ability of the indicator to accurately represent the extent of provision for under threes in a given country and year. However, the inclusion of this indicator is considered central to the measurement dual earner childcare policy. Existing evidence suggests that public childcare places for zero-to-three year olds are an important determinant of gender equality in labour market activity (Van Der Lippe and Van Dijk, 2002: 232; Pettit and Hook, 2005, 2009; Uunk et al, 2005; Misra et al, 2011). As a result, ignoring childcare for very young children entirely would risk omitted variable bias. While it is recognised that this indicator is far from perfect, rejecting what information does exist on public provision for children between zero and three may be more harmful than including an indicator with a high level of missing data. However, this indicator should be understood strictly as just an *indicator* of public provision – rather than as a precise measure – and any findings should be interpreted with caution.

Indicator 5. Proportion of children between three and six years of age in publicly run pre-primary education or in primary school

Indicator 5 captures the proportion of children aged between three and six years of age (inclusive) that are either enrolled in publicly-run pre-primary educational institutions[33] or are attending primary school. It thus reflects state efforts to provide childcare services for slightly older children. Data for this indicator are extracted primarily from the OECD education database (2012a). Because enrolment data come in absolute form, they have been transformed into proportions using population data from the OECD and Eurostat. There is a missing data rate of 20.6%.

This indicator includes children enrolled in both pre-primary education and in primary school for two reasons. First, it is necessary to take account of cross-national differences in the entry age for primary education. The simplest way to do this would be to calculate enrolment rates for those aged between three and school age only. Unfortunately, however, sufficient and comparable data on enrolment in *public* pre-primary institutions are not available in a form that is disaggregated by *years* of age[34]. By also including

[33] Where pre-primary programmes are broadly defined by the OECD as those '*designed to meet the developmental and education needs* of *children at least 3 years old … and not older than 6'* (OECD, 2004: 87

[34] The OECD education database gives figures for the number of children enrolled in public institutions and the number of children enrolled by years of age separately. Thus, within the years of age data it is not possible to know whether the child is enrolled in a public or private institution,

children between 3 and 6 that are enrolled in primary school, the indicator automatically corrects for different school starting ages.

Secondly, from an employment perspective, there is no convincing reason why enrolment in primary schooling should be seen as any different to enrolment in public pre-primary institutions – both provide a form of care that reduces the childcare burden on mothers and reduces the implicit tax on female labour. Moreover, Gornick and Meyers (2003) show that hours and structures of primary schools tend to be similar to pre-primary institutions. Thus, it is possible to argue that a lower age of compulsory schooling – and thus a greater proportion of 3 to 6 year olds enrolled in primary schooling – is every bit as much of a dual earner childcare policy as pre-primary childcare provision for children of the same age (Gornick et al, 1997).

Again, this indicator is limited. Importantly, it reflects only those children enrolled in *publicly-run* pre-primary education and not those that are in publicly-supported or publicly-financed private institutions[35]. This is likely to lead to the underestimation of public provision for 3 to 6 six year olds in some countries[36]. Like indicator 4, this measure also does not reflect the hours-per-week or weeks-per-year covered by each place. This point is particular relevant here, since part-time care for older children might do little to promote maternal employment (Korpi: 2000: 12). However, once more, superior data are not available for the countries and years covered throughout this thesis and the OECD data used here are considered the best available option.

Indicator 6. Public expenditure on childcare services per child aged under six (US$ 1000s, 2005 prices 2005 PPPs)

Indicator 6 reflects general state efforts to provide or subsidise childcare services for children under school age. Raw absolute expenditure in national currency is converted to constant (2005) US$s and expressed per child under six years of age in order to aid comparability. The raw expenditure data is taken directly from the OECD social expenditure database (2012b), and captures '*public spending towards formal day-care and*

---

and within the public institution data it is not possible to know a child's exact year of age, other than it must lie between 3 and 6 (inclusive) (OECD, 2004: 87).

[35] Some data on the latter are available in the OECD education database, but missing data rates are very high and there is no data for any country prior to 1992.

[36] For example, in Belgium in 2010 more children were enrolled in government-dependent private pre-primary institutions than in publicly run pre-primary institutions (OECD, 2012a). Other countries likely to be affected include Australia, the Netherlands, New Zealand, Norway, Spain and Sweden.

pre-school services for children not yet 6 years of age' (Adema et al, 2011: 98)[37]. The currency conversion and population data are from the OECD (2013d). The indicator has a missing data rate of 8.6%.

It is acknowledged that public childcare expenditure data is limited. In particular, as it is an aggregate measure it cannot illuminate *how* public childcare policies are structured (Lohmann, 2011: 4), and thus any inferences resulting from this indicator cannot be used to recommend specific policies. However, this indicator can act as something of a 'catch-all' measure of public childcare policy, and is used here to at least partially reflect those aspects of policy that cannot be measured directly due to a lack of data availability – such as cost subsidisation and care quality – as long as they are, at least in part, related to expenditure.

General family support policy

The final three main indicators find their theoretical basis in Korpi's (2000) 'general family support' policy type. As covered in chapter **2**, these policies rarely have an explicit objective regarding female labour market activity, and instead are usually aimed at providing financial and/or time support for the family unit. However, as they are typically premised on the nuclear family model, these policies often act to reinforce divisions of household labour with the father as single earner and mother as specialised domestic worker (Korpi, 2000: 11; Korpi, 2010: s21).

For the most part, general family support policies take the form of tax and cash transfer policies, with child or family allowances and family- or child-related tax subsidies particularly common types of provision (Korpi, 2000: 12-13; Korpi, 2010: s21-s22). However, as discussed in chapter **2**, certain forms of leave policy may also be considered 'general family support'. More specifically, flat-rate parental leaves and particularly childcare leaves are often classified as general family support-type policies by Korpi and others (Ferrarini, 2006; Bäckman and Ferrarini, 2010; Korpi, 2010; Mischke, 2011; Korpi et al, 2013) on account of their typical long length, their strong disincentives for take-up by fathers and, in the latter case only, their lack of job protection.

[37] The SOCX data is already adjusted to take account of those countries were the age of compulsory schooling is less than (e.g. Australia, New Zealand, and the United Kingdom) or more than (e.g. Denmark, Finland, Norway, Sweden) six years of age (Adema et al, 2011: 98-99).

Indicator 7. Child benefit per month for two children, as a proportion of an average production worker's gross monthly earnings

Indicator 7 captures the relative generosity of child benefit or family allowance payments. It is the sum of child benefit per month – as defined by Gauthier (2011a), which includes child-conditioned cash transfers and child-conditioned tax credits (Gauthier, 2011c) – for the first two children in a household, expressed as a proportion of an average production worker's monthly wage to ensure comparability. The indicator uses the benefit paid for the first two children per household as in many cases the level of entitlement varies for each additional child. Data for the indicator come from Gauthier (2011a), MISSOC and MISSCEO (2013) and the Social Security Administration (2013), and there is no missing data.

Indicator 8. Tax subsidies for the family

Indicator 8 measures the degree to which the tax system provides financial support for the nuclear family unit. It is calculated as the difference between the post-tax (income tax plus employee's social security contributions) income for a single earner married couple with two children and a labour market income at 100% of average earnings, and the post-tax income of a single individual with no children on the same wage, expressed as a proportion of average earnings. The difference represents the extent to which the state looks to supplement net family incomes, relative to single persons, via the tax system (Ferrarini, 2006: 53). It is possible for the difference to be zero where the tax system contains no family-conditional elements, and in certain cases can be negative – that is, for a single earner couple with two children to face a higher tax rate than a single individual with no children. The latter is, however, rare[38].

Because of this method of calculation, the indicator acts as something of a 'catch-all' measure and captures a number of aspects of tax systems that reduce the tax burden on the nuclear family unit. These include joint taxation systems, marital and dependent spouse or partner allowances, dependent child allowances, and marital or 'head of family' and dependent child tax credits. Data for this indicator are extracted and calculated from the OECD tax database (2013e) and several OECD tax and benefit publications (see 'Data

[38] A negative difference is observed for Greece in the years 1990, 1992 and between 1997 and 2010. Under collective labour agreements, Greek workers with dependent children and spouses are usually granted additional income subsidies from their employers (OECD, 1998: 228). These subsidies are taxable, which raises the tax burden on a worker with a family (initially) earning the average wage above that of a worker on an equivalent wage but without a spouse or dependent children.

Sources'). It has a missing data rate of 8.4%.

Indicator 9. Flat-rate job protected parental leave and childcare leave available to mothers, in effective weeks

This final indicator measures the combined length of flat-rate parental leave and childcare leave available to mothers. The indicator is the sum of weeks of paid flat rate parental leave – with any weeks of father-specific flat rate parental leave removed – and weeks of paid childcare leave. To reflect the level of support to families, weeks of leave are multiplied by the average wage replacement rate across the respective leave and are therefore presented in 'effective' full-time equivalent form. As a result, the indicator does not reflect those unpaid parental or childcare leaves which provide little incentive for take-up by either parent (Finch, 2006: 119). Data are drawn from a number of sources including Gauthier (2011a), and there is no missing data.

Three composite family policy indices

As touched on at the start of this section, these nine main indicators of family policy are used predominantly as individual stand-alone measures in their own right. This provides a detailed picture of variation in family policy provision across countries and of changes in provision over time. However, in certain situations – such as when presenting data in graphical or in tabular form – this detailed information may become overwhelming with developments in and configurations of policy hard to identify.

As a way of simplifying the data, the main nine indicators are at times presented in the form of three composite index measures that summarise the general level of provision in each of the three types of family policy[39]. Indicators 1-3 are combined into a dual earner-carer leave policy index, 4-6 into a dual earner childcare policy index, and 7-9 into a general family support policy index. These three indices provide 'headline' figures of provision (Nardo et al, 2005: 8) that are used at various points around the thesis to summarise patterns of and developments in the various areas of family policy. It is worth noting though that the policy indices are not used in any of this thesis' more formal linear regression analyses. Primarily, this is because it turns out that the provision of the various

[39] It is not uncommon for indices to be used to measure family policy. Gornick et al (1998), Mandel and Semyonov (2005, 2006), Korpi et al (2010), and Tranby (2010), amongst others, all use indices to capture family policies within their studies. Some authors (e.g. Gornick et al, 1998; Mandel and Semyonov, 2005; Mandel and Semyonov, 2006) justify their use of indices on theoretical grounds. Here, however, they are used mainly for practical reasons.

specific policies within each index does not always correlate[40], so to some extent the indices lack internal consistency. As a result, results inside of each dimension are at times fairly diverse and use of the indices as independent variables in the regression models would risk producing misleading inferences.

Constructing the three policy indices requires a number of considerations, in addition to those concerning the selection of the indicators themselves. Due to space constraints it is not possible to provide sufficient detail on each of the various decisions here – instead, an in-depth discussion is given in appendix **B.2** (pp. 320-325). However, as an extremely brief summary, the three indices are produced by first normalising the various indicators using Z-score standardisation, so that all hold a standard normal distribution with a mean of zero and standard deviation of one. This means that all indicators are expressed on a common scale, which increases comparability and ensures none have undue influence over the final index score. The standardised indicators are then combined into their respective indices by taking the simple unweighted arithmetic mean of the three measures that make up the given policy index. In other words, final values on each of the three policy indices are the mean average of the standardised versions of the three policy indicators that measure the given policy area. These methods have their downsides (see appendix **B.2**), but produce transparent index scores and intuitive 'headline' summaries of provision of a given policy type.

3.2.2. Alternative measures of leave policy

As outlined above, the thesis' main family policy indicators split leave entitlements into several measures of various types – namely, mother-specific earnings-related leave, gender-neutral earnings-related leave, flat-rate parental and childcare leave, and also father-specific leave. This is to allow for the examination of whether different types of leave have varying effects – either in direction or magnitude – on gender equality in employment, as per Korpi and others (Korpi 2000, Ferrarini, 2006, Mischke, 2011, Korpi et al, 2013). However, splitting leaves in this manner might also introduce a couple of complications.

First and foremost, it remains an empirical question whether or not the different types of

[40] This is particularly the case with the 'dual earner-carer leave' policy index. Across the sample, mother-specific earnings-related leave and gender-neutral earnings-related leave share a moderate negative correlation (r=-0.249), mostly because those countries that provide generous gender-neutral leave tend also to provide relatively short maternity leaves, while others provide neither. As a result, the 'dual earner-carer leave' policy index is not internally consistent (cronbach's alpha = 0.226).

leave available to mothers actually have differing effects on employment outcomes. The logic behind Korpi's theoretical argument is compelling, but to the author's knowledge no existing studies explicitly test whether it holds empirically, at least not within a comparative context. To be clear, several studies do divide leaves into 'dual earner' and 'general family support' types (Korpi 2000, Ferrarini, 2006, Mischke, 2011, Korpi et al, 2013) but in each case the various indicators are used only in composite policy indices. As a result, it is not possible to know from these studies whether or not relations do indeed vary across specific leave types.

The danger here is that if different types of leave do not have differing effects on a particular outcome, then splitting entitlements across several indicators may cloud or distort estimates of the effects of leave in general. It is possible, for instance, that the provision of one particular type of leave matters less for a given outcome than the total provision of all leave in general – as an example, leave-driven statistical discrimination may be based less on the provision of, say, flat-rate or earnings-related gender-neutral parental leaves specifically and more on just the total length of general leave available to a mother regardless of the exact design or payment structure. In such a situation, using separate indicators may lead to the miss-estimation of the influence of leave programmes.

Additionally, it is known from several studies (e.g. Ruhm, 1998; Akgunduz and Plantenga, 2012; Thévenon and Solaz, 2013) that any employment-facilitating effects of leave diminish and possibly even reverse as the total length of the entitlement becomes long, most likely because extended periods of absence from the labour force increases the difficulty of returning once the entitlements ends. The usual method of accounting for any such curvilinear relation in a linear regression context is to include a squared term on the measure of leave (Ruhm, 1998; Akgunduz and Plantenga, 2012; Thévenon and Solaz, 2013). However, where entitlements are split between several indicators it makes little sense to include a squared term as, individually, none of the leave indicators always represent the 'total' length of leave. In other words, when leave provisions are split it is not possible to properly capture any damaging effects of long leave as none of the individual indicators – which are assumed independent of one another – measure the total length of the entitlement on offer.

To check for and guard against these issues, this thesis also uses two additional 'atheoretical'[41] indicators of leave policy – total effective maternity and parental leave available to mothers, and effective childcare leave – as detailed below. The former reflects

[41] In the sense that they cut across Korpi's (2000) conception of family policy types.

the overall length of all maternity and parental leave that can be used by – but is not necessarily reserved for – mothers, and as such represents the overall general female leave entitlement regardless of exact leave type. Notably, this alternative measure is similar to those used to capture leave policies in much of the wider family policy literature (e.g. Winegarden and Bracy, 1995; Ruhm, 1998; Jaumotte, 2003; Akgunduz and Plantenga, 2012; Thévenon and Solaz, 2013; Thévenon, 2013). The second additional indicator captures childcare leaves only. These particular leaves are not included in the overall general measure as their characteristics mean that they are especially likely to reinforce gender divisions of labour and, consequently, particularly unlikely to promote female labour activity (see chapter **2.2.1**). These two additional indicators are used – alongside the measure of father-specific leave outlined earlier – as alternative measures in most of the analyses presented in the thesis.

Indicator 10. Total maternity and parental leave available to mothers, in effective weeks

Indicator 10 measures the total number of weeks of job-protected maternity and parental leave that are available for use by the mother. It is calculated as the sum of all weeks of maternity and parental leave regardless of policy type, but with leave reserved for the father removed. Similar to earlier leave indicators, weeks of leave are multiplied by the average wage replacement rate for the average female worker in order to generate the 'effective' full-time equivalent length of the leave. Data for this indicator come from a number of sources, including Gauthier (2011a) (see 'Data Sources'). There is no missing data.

Indicator 11. Childcare leave, in effective weeks

Indicator 11 captures effective weeks of childcare leave available to either parent. As for all other leave indicators, it is calculated as weeks of leave on offer multiplied by the average wage replacement rate across the leave so as to present the indicator in 'effective' form and reflect incentives for take up. Data for this indicator come from a number of sources, again including Gauthier (2011a) (see 'Data Sources'). There is no missing data.

3.2.3. Handling missing data

Lastly, it is worth making on brief note on how this thesis handles missing data on its measures of family policy. Although the indicators outlined above were chosen so as to minimise missing data, several still suffer from a certain number of missing cases –

indicator **4** in particular has a very high rate of missing data. This is unfortunate in itself, but is also problematic for the later statistical analyses as a missing value on just one policy indicator will, through listwise deletion, lead to the deletion of the entire case. In other words, any missing case on any given indicator will result in a large loss of information, potentially damaging estimates from the regression models for other unaffected variables (Little, 1992: 1230; King et al, 1998: 4) and – if enough cases are removed –possibly also reducing statistical power (Osborne, 2013: 118). It is important therefore to manage any missing data appropriately.

There are a variety of methods available for dealing with and filling missing data points (Nardo et al, 2005: 10, 17). Unfortunately, many of the more advanced techniques, such as multiple imputation, cannot be used in this particular instance due to inconsistent estimates (see appendix **B.3** (pp. 325-327) for a review of missing data techniques). The primary technique used here is linear interpolation, which estimates missing values based on a linear trend between the nearest two observed data points. This ensures that any imputed values follow a smooth trend over time. As interpolation cannot be used for missing data at the end or beginning of a series, missing values in these cases are imputed using 'last value carried forward' and 'next value carried back' (LVCF/NVCB) techniques, respectively[42].

It should be pointed out that neither of these methods of imputation are without their faults. Firstly, as 'single-imputation' techniques, both may under-estimate variance in the missing values following imputation (see appendix **B.3**). As a result, it is possible that they may contribute to an artificial increase in confidence in the estimates produced by the later statistical analyses (Honaker and King, 2010: 563; Nardo et al, 2005: 17). But both may also offer only crude approximations of the missing data, and possibly as a consequence lead to misleading estimates. This is particularly likely to be the case for those missing values imputed using using LVCF/NVCB, as the use of this method reflects almost total ignorance around the value of the given missing data point inasmuch as there is no information available on the given policy in the given year other than that which exists for the nearest available data point. To check for any misleading estimates produced by the use of LVCF/NVCB, appendix **F** (pp. 411-446) provides a sensitivity analysis with all regression models presented in this thesis re-estimated with any cases with data imputed using LVCF/NVCB removed. Generally, results from appendix **F** show that removing cases

[42] Where 'carry next value back/carry last value forward' are used on expenditure data the next/last value is deflated/inflated using the GDP deflator, so that the real value of the policy expenditure is not artificially inflated/deflated by price level changes.

with missing data imputed using 'last value carried forward' and 'next value carried back' does not lead to changes in findings and inferences on the affected variables.

3.3. Measuring gender differences in employment outcomes

This thesis measures gender equality in employment through eight aggregate- or country-level labour market indicators. The eight indicators are organised into three sets, with each set capturing a different aspect of labour market equality corresponding to the thesis' three main research areas. The first set contains two indicators that cover gender equality in labour market activity, or in other words, equality in the extent or depth to which men and women are economically activity. The second set looks to reflect gender job segregation and equality in occupational attainment, that is, the strength of the glass ceiling on women's careers and the relative extent to which female employment is concentrated in feminized areas of the labour market. The third and final set captures gender equality in employment at varying levels of education.

In all cases, indicators explicitly capture *gender differences* in labour market outcomes, as opposed to female labour market performance in isolation. A number of existing family policy studies use measures that capture female employment outcomes only (e.g. Winegarden and Bracy, 1995; Gornick et al, 1998; Jaumotte, 2003; Pettit and Hook, 2005; Ferrarini, 2006; Mandel and Semyonov, 2006; Misra et al, 2008; Tranby, 2010; Mischke, 2011; Korpi et al, 2013). However, examining the influence of family policy on women's outcomes without reference to the equivalent male statistic may risk producing misleading results. Female performance on a given indicator is likely to be at least partly dependent on the determinants of variation in the overall or general level of that variable – for instance, variations in female economic activity are likely to depend to some degree on the determinants of general economic activity. As a result, using measures that capture female outcomes alone risks bias from the effects of any wider economic processes.

Taking the gender difference at least partially reduces the risk of this bias. To the extent that a given family policy can be assumed to have little or no effect on male labour market outcomes, men can be used as a control group with any remaining relation between a given policy measure and the gender difference on a given outcome representing the 'pure' effect on women (Ruhm, 1998; Akgunduz and Plantenga, 2012). Of course, this may be a strong assumption. However, even if policies do have some influence on male outcomes, using the male statistic as a reference at least partially accounts for any variation in the overall level of the given variable and, moreover, continues to provide

results of strong substantive interest – that is, the effect of policy on *gender differences* in employment.

All but two of the indicators measure gender differences through the use of the gender gap, that is, the absolute difference between the male and female values on a given indicator. The two exceptions are two indicators of gender equality in managerial employment. These indicators use the 'female share', for reasons explained a little later on.

The use of gender gaps to capture gender differences in employment outcomes is fairly common practice (e.g. Eurostat, 2008; ILO, 2011; OECD, 2013c). They are straightforward and transparent, and provide an intuitive measure of equality in a given outcome. The formula for the gender gap can be expressed by:

$$GG_{ijt} = M_{ijt} - F_{ijt}$$

Where GG_{ji}^{t} is the gender gap for country $_j$ on indicator $_i$ at time $_t$ and M_{ijt} and F_{ijt} are the male and female values on the underlying indicator for country $_j$ on indicator $_i$ at time $_t$, respectively. For indicators where the female value is generally higher than the male equivalent across the sample – such as for employment in 'female-typed' occupations – the order of the two gender values is switched so that a lower value always represents a situation of greater equality. Thus, the formula for the calculation of the gender gap becomes:

$$If\ \bar{M}_i \geq \bar{F}_i, GG_{ijt} = M_{ijt} - F_{ijt}$$
$$If\ \bar{F}_i \geq \bar{M}_i, GG_{ijt} = F_{ijt} - M_{ijt}$$

Gender gaps do have drawbacks. As Rubery et al (2002: 26) point out, the absolute gender gap does not provide information on the size of the gap relative to the general level of the given indicator. In isolation at least, this increases the difficulty of establishing the significance of the gender gap (see also Karemessini et al, 2002). However, the primary alternatives – gender ratios or standardised gender gaps, which are equivalent[43] – also suffer from limitations. In particular, they capture only proportional differences and,

[43] The respective formulas for the gender ratio and the standardized gender gap are $GR_{ijt} = \frac{F_{ijt}}{M_{ji}^{t}}$ and $SGG_{ijt} = \frac{M_{ijt}-F_{ijt}}{M_{ijt}}$. These are sometimes presented as alternative measures of equality. However, as $\frac{M_{ijt}-F_{ijt}}{M_{ijt}} = \left(\frac{M_{ijt}}{M_{ijt}} - \frac{F_{ijt}}{M_{ijt}}\right) = \left(1 - \frac{F_{ijt}}{M_{ijt}}\right)$ then $\frac{F_{ijt}}{M_{ijt}} = 1 - \left(\frac{M_{ijt}-F_{ijt}}{M_{ijt}}\right)$ or, equivalently, $GR_{ijt} = 1 - SGG_{ijt}$.

therefore, changes in proportional differences when traced over time. This complicates the interpretation of empirical relations, can produce misleading results in situations where the numerator is very low[44], and to some degree departs from the theory where relations are rarely expressed in proportional terms. For these reasons, the absolute gender gap is the preferred measure for the majority of indicators.

The following subsections outline and describe the indicators in some detail. Descriptive statistics for all eight are given in table **3.4** (overleaf), while full results for each indicator in each country and year are shown in tables **C.15-C.35** in appendix **C** (pp. 356-376).

Gender equality in labour market activity

The first set of indicators measure what is termed here as 'gender equality in labour market activity'. The theoretical interest is in examining the degree to which various family policies promote or constrain female participation and influence differences in the overall extent of male and female economic activity. Accordingly, the two indicators in this set look to capture gender differences in the *extent* or *depth* of labour participation or, in other words, reflect how far men and women are active in the labour market.

Indicator 1. Gender gap in the labour force participation rate (25-54 year olds; 25-34 year olds)

Indicator 1 is used as a headline indicator of gender equality in labour market activity. It captures the absolute difference in the proportion of men and women that are economically active, where 'activity' is define as those who '*furnish the supply of labour for the production of goods and services during a specified time-reference period*' (ILO, 2014: n.p) or, in more practical terms, those who are classified as either employed or unemployed but not those who are 'inactive' (ILO, 2014: n.p). The participation rate is preferred over the employment rate in large part because much of the focus of the theory

[44] As an example, let person A have an income of 50 at time $_t$ and 55 at time $_{t+1}$, while person B has an income of 5 at time $_t$ and 10 at time $_{t+1}$. At time $_t$, the B-to-A income ratio is 0.10, while at $_{t+1}$the ratio has grown to 0.18. Thus, even though both A and B have seen an equivalent increase in income, the level of equality between their respective incomes – as measured by the B-to-A ratio – has almost doubled.

Table 3.4. **Descriptive statistics for the indicators of gender equality in employment**

		Indicator	Age group	Education level	N	% missing	Mean	Standard deviation	Between-country standard deviation	Within-country standard deviation	Minimum	Maximum
Labour market activity	1a	Gender gap in the labour force participation rate	25-54	-	504	2%	20.64	11.93	9.94	9.94	9.94	9.94
	1b	Gender gap in the labour force participation rate	25-34	-	502	2%	18.22	8.80	6.60	5.91	3.78	49.37
	2	Gender gap in usual weekly working hours	25-54	-	428	17%	8.18	3.40	3.20	1.08	2.80	17.50
Segregation and attainment	3	Gender gap in the proportion of employees in 'female-type' occupations	All ages	-	301	41%	22.97	7.62	7.56	1.82	7.51	38.38
	4	Female share of managerial employment (%)	All ages	-	339	34%	29.82	5.37	4.93	3.04	14.36	42.67
	5	Gender gap in the proportion of employees with top quintile earnings (5-year interval)	25-54	-	86	28%	19.84	4.94	4.47	2.37	8.20	29.87
Gender equality in employment by levels of education	6a	Gender gap in the labour force participation rate	25-49	Low	282	45%	26.70	12.51	11.97	4.62	3.70	54.50
				Medium	282	45%	15.91	8.80	8.34	3.33	2.40	40.80
				High	282	45%	7.71	3.83	3.45	1.85	-0.30	28.50
	6b	Gender gap in the labour force participation rate	25-29	Low	282	45%	27.74	9.42	7.83	5.42	4.10	52.10
				Medium	282	45%	11.11	5.10	4.16	3.02	-2.90	29.50
				High	282	45%	2.74	3.50	2.41	2.65	-14.10	13.90
	6c	Gender gap in the labour force participation rate	30-34	Low	282	45%	29.27	10.34	9.24	5.00	3.90	50.30
				Medium	282	45%	17.16	7.50	6.73	3.53	-0.40	39.20
				High	282	45%	8.40	4.49	3.57	2.82	-1.30	31.80
	7	Female share of managerial employment (%)	All ages	Low	263	48%	31.96	9.13	8.27	4.54	12.08	55.56
				Medium	274	47%	27.75	5.27	4.19	3.31	13.85	40.54
				High	273	47%	27.57	7.44	6.25	4.39	10.66	43.74
	8	Gender gap in the proportion of employees with top quintile earnings (5-year interval)	25-54	Low	80	33%	10.48	3.67	2.91	2.39	2.94	17.78
				Medium	81	32%	18.53	4.20	3.01	2.94	9.59	27.96
				High	82	31%	32.67	8.04	6.95	4.20	14.74	48.86

is on women's labour supply decision, rather than on their ability to find employment itself[45][46]. The indicator is constructed for two age groups – a broader measure of participation amongst all men and women aged 25-54, and a more specific indicator for those of 'prime' childbearing age between 25 and 34[47]. The former – or an equivalent broader measure – is used most often in the comparative family policy literature (see table **A.1** in appendix **A** (pp. 314-316)), and forms the 'main' measure here. However, because many – although not all[48] – family policies are designed to be used around or soon after the birth of the child, the effects of certain policies may be stronger or clearer when looking at the 25-34 year old age group. Data come from the OECD (2013a). There is a missing data rate of 2%.

Indicator 2. Gender gap in usual weekly working hours (25-54 year olds)

The second indicator of equality in labour market activity is the absolute difference in the average usual number of hours worked per week by male and female employees. It captures gender disparities in the distribution of working hours, and acts here as an indicator of equality the *extent* or *depth* of male and female activity. In other words, it complements indicator 1 by reflecting how *far* men and women are economically active once they have found employment. Data come from the OECD (2013a), and unfortunately are available only for the broader 25-54 year old age group. There is a missing data rate of 17%, with the United States missing entirely (13% missing within the rest of the sample).

Gender job segregation and equality in occupational attainment

The second set of indicators measure gender job segregation and equality in occupational attainment. In terms of specific theoretical interest, this set of indicators looks to capture

[45] Additionally, to some degree the use of the participation rate also helps avoid or at least dampens distortions to male and female activity from external factors such as economic downturns
[46] The two are not identical as participation rates also include those who are unemployed, and it is feasible that they may differ in terms of patterns, trends, and associations with family policy. In the event, the two are extremely similar: the Pearson's R correlation coefficient between the two across the sample is R = 0.99.
[47] In 2010, the average mean age of women at childbirth across the EU was 30, and in all countries was between 25 and 31 (Eurostat, 2014).
[48] In most countries, parents remain entitled to child benefit and child-related tax subsidies, credits and allowances until the child reaches 'adulthood' – normally between 16 and 18 but in some cases, such as Australia, as old as 21 (OECD, 2013g) – while marriage subsidies and spousal allowances are generally not conditioned by age of children (OECD, 2013g). Additionally, in some countries and at some points in time parents have been entitled to use at least part of their parental leave entitlement at any point until the child reaches as old as eight (OECD, 2013c; in this specific case, Denmark between 1994 and 2002), while the second and third childcare indicators covers provisions for children up to their seventh birthday. Thus, several policies may continue to affect parents' labour supply decisions long after childbirth.

those aspects of employment which, according to Mandel and others (Mandel and Semyonov, 2005; Mandel and Semyonov, 2006; Shalev, 2008; Mandel, 2009; Mandel and Shalev, 2009; Mandel, 2011; Mandel, 2012), may be subject to adverse side effects from family policy provision. Accordingly, they look to reflect the concentration of women in 'feminised' areas of the economy – which may be considered one side of horizontal job segregation – as well as the relative position of men and women in the labour market and the strength of the glass ceiling on women's careers.

Both gender job segregation and in particular equality in occupational attainment are fairly abstract concepts that are slightly less well defined than 'labour market activity'. As a result, capturing both comprehensively is challenging, not least because of constraints on available comparable labour market data. The exact indicators chosen here are guided largely by those used in the cross-sectional studies by Mandel and others (Mandel and Semyonov, 2005; Mandel and Semyonov, 2006; Mandel, 2009; Mandel, 2011; Mandel, 2012). This aids comparability of results and ensures that findings remain theoretically relevant. However, it is acknowledged that there are other aspects or perspective on women's position inside the labour market that are not covered by these indicators.

Job segregation, for instance, is measured here by segregation in occupations only, but also of importance is sectoral segregation, that is, the concentration of men and women in certain areas of economic activity such as industry in the case of men and particularly various service and social service jobs in the case of women. From a cross-country perspective the two tend to correlate fairly strongly (Bettio and Verashchagina, 2009) but it is possible that trends and, importantly, the influence of policy may differ between segregation in occupations and segregation in employment sectors.

Similarly, women's relative occupational attainment is measured here by their relative access to top positions in terms of management and top earnings, but of perhaps equal importance is the over-representation of female employees at the bottom end of the labour market – the 'sticky floor' as opposed to the 'glass ceiling'. However, comparative data on gender differences in 'low quality' employment are fairly scarce and, importantly, the theoretical influence of family policy on the concentration of women at the bottom end of the labour market is not covered in so much depth by the policy paradox literature (Mandel and Semyonov, 2005; Mandel and Semyonov, 2006; Mandel, 2009; Mandel, 2011; Mandel, 2012). As a result, gender differences in 'low quality' employment are not covered but it is recognised that these form an important area of gender equality in occupational attainment.

Indicator 3. Gender gap in the proportion of employees in 'female-type' occupations (all ages)

Indicator 3 measures the difference in the proportion of male and female employees (all ages[49]) that work in 'female-type' occupations, and reflects the relative extent to which female labour is concentrated in certain types of job and areas of the labour market. Following Mandel and Semyonov (2006), 'female-type' occupations are defined as those occupational categories where, for a given country, the share of female employees is greater than 150% of the female share of total employment. To avoid erratic shifts in the gender gap across years, these classifications are based on the average female share of employment over the series and are held constant throughout. Unfortunately, only data based on the broader one-digit ISCO classification system are available over time, so this indicator reflects general rather than specific 'female-type' occupations. Data come from Eurostat (2013), the ILO (2013) and the OECD (2013a). There is a fairly high missing data rate (41%), largely because of unavailability for all countries and years before 1992, and because both Italy and Portugal have no empirically-determined 'female-type' occupations. The rate within the rest of the sample is 12%.

Indicator 4. Female share of managerial employment (all ages)

Indicator 4 captures the female share (%) of employment in ISCO88 group 1, that is, the proportion of employees (all ages[50]) working as 'legislators, managers and senior officials' that are female. It reflects women's relative representation in positions that are generally fairly senior, highly paid[51] and of high status, and as a result measures at least one aspect of the glass ceiling on women's occupational achievement (Mandel and Semyonov, 2005; Mandel and Semyonov, 2006). The indicator is presented as a 'share', rather than a gender gap, as the size of ISCO88 group 1 differ sharply across countries (Eurostat, 2013; ILO, 2014), and in some cases is very small[52]. As a result, in certain countries the gender gap would be artificially constrained. It should be noted, however, that use of the 'female share' means that this indicator runs in the opposite direction to most others – here, a higher value represents a greater level of equality. Data are the same as for indicator 3, so

[49] Unfortunately, data are not available for specific age groups.
[50] Unfortunately, data are not available for specific age groups.
[51] Data from Eurostat's Structure of Earnings Survey suggests ISCO88 group 1 has the highest mean pay of all 10 ISCO88 one-digit occupations (Eurostat, 2014).
[52] In Sweden in 2010, for example, employment in ISCO88 group 1 represented just 4.8% of total employment. In contrast, in the United Kingdom in 2010 15.3% of employees were classed as managers (Eurostat, 2013; ILO, 2014).

again are unavailable for all countries before 1992. This produces a fairly high missing data rate (34%) across the sample as a whole, with the missing rate within the rest of the sample 11%.

Indicator 5. Gender gap in the proportion of employees with top quintile annual earnings (dependent employees; 25-54 year olds; five-year intervals)

This final indicator captures gender differences in the proportion of dependent employees (25-54 year olds[53]) with annual labour earnings[54] that fall within the top-fifth of the earnings distribution. It measures the relative ability of men and women to access highly paid positions, and therefore reflects the strength of the 'glass ceiling' on women's earnings attainment (Mandel, 2009; 2011; Korpi et al, 2013). Data for this indicator are extracted from the Luxembourg Income Study (LIS) (2014), a cross-national archive of harmonised micro-datasets that allow for cross-national and temporal comparison.

Unfortunately, hourly or weekly earnings data are missing in the LIS dataset for a number of countries, so this indicator can make use of information on annual earnings only. As a result, it reflects gender differences in annual working hours as well as rates of pay. From one perspective, this is a disadvantage – variation in this gender gap may reflect variations in the depth of employment as much as pure gender pay differentials. On the other hand, hourly pay gaps may understate the true extent of earnings disparities and are likely to control-away a major component of gender inequality in economic independence (Mandel and Shalev, 2009: 10). Either way, the use of annual data should be kept in mind when interpreting results[55].

---

[53] Unfortunately, sample sizes become too small when looking at more specific age groups, so this indicator uses the broader 25-54 year old age group only.

[54] In most cases the annual earnings data refer to annual pre-tax and transfer paid employment income. However, in the following 17 cases annual paid employment income net of income taxes and contributions are used as gross income data are not available: Austria 1990-1994 & 2000-2004; Belgium 2000-2004; Greece, 1995-1999 & 2000-2004; Ireland, 1990-1994, 1995-1999 & 2000-2004; Italy 1985-1989, 1990-1994, 1995-1999; Luxembourg, 1985-1989, 1990-1994, 1995-1999; Spain 1990-1994, 1995-1999, 2000-2004. If tax rates are similar on average for men and women the use of net data should not distort results. However, because men are more likely to be sole earners and therefore benefit from various dependent spouse and family related tax subsidies, it is possible that men may on average face lower tax rates than women. This is dangerous as it may 'artificially' increase the number of men relative to women with top quintile earnings and as a result inflate the gender gap in those cases that use net earnings. However, inspection of the data reveals no substantial breaks in series inside countries where data switches from net to gross or vice versa, and a t-test on the gender gap within those countries that use both measures reports no significant difference in means ($t_{(30)} = -1.5173$, $p=0.139$). On this evidence the two types of earnings data are considered acceptably comparable.

[55] Several other articles that explore family policy 'trade-offs' also use annual earnings data (e.g. Mandel and Semyonov, 2005; Mandel, 2012; Korpi et al, 2013).

The LIS data are relatively incomplete in terms of sample years – harmonized survey data are available for only 113 of the 514 sample country-years covered in this thesis. In large part, this is because the LIS database is organised into waves at roughly five-year intervals. For many countries only one harmonised survey is available per wave, although in certain cases several surveys are available in certain waves. In order to produce a more complete and balanced panel, this indicator is measured at five-year intervals. More specifically, it is presented using the five-year mean average of any complete cases, with the five-year periods used – 1985-1989, 1990-1994, 1995-1999, 2000-2004, 2005-2009, and 2010 on its own – roughly corresponding to the LIS waves. This results in 86 out of a possible 119 complete country-waves, and a missing data rate of 28% across the sample as a whole and 20% within available countries and years (New Zealand and Portugal are missing entirely). Measurement at five-year intervals is of course not ideal, largely because it reduces the number of observations and obscures year-on-year variation. However, comparable gender-differentiated earnings data are scarce and the LIS database represents the most complete and detailed source available.

Gender equality in employment by levels of education

The final set of indicators measures gender equality in employment at varying levels of education. The theoretical interest here lies in exploring whether any benefits and adverse effects attached to family policy vary across levels of education. More precisely, the primary concern is in examining whether – as argued by Mandel and others (Shalev, 2008; Mandel, 2009; Mandel and Shalev, 2009; Mandel, 2011; Mandel, 2012) – any effects of policy on economic activity are concentrated mostly on less educated women and, conversely, whether any adverse constraints on occupational attainment fall largely on their relatively advantaged, highly educated counterparts. Accordingly, these three indicators look to capture elements of both aspects of gender equality in employment outlined above.

The indicators used in this set are in all cases replicas of measures also used above, but with data disaggregated by levels of education. Slight differences in samples and missing data prevent *full* comparability. However, to some degree at least the use of similar measures allows for the examination of how polices relate to a given outcome at the overall level, and how the relationship breaks down across levels of education.

It is again acknowledged that the three indicators used here do not fully capture equality in either activity or occupational attainment across levels of education. However,

comparable labour market data that are disaggregated by both gender and levels of education and that stretch across both countries and time are scarce. The indicators used here do suffer from missing data – in particular, the first two are available only for European countries and the years 1992-2010 – but represent some of the few areas for which suitable country-level labour market data are available in a form that is disaggregated by levels of education.

Indicator 6. Gender gap in the labour force participation rate, by education level (25-49 year olds; 25-29 year olds; 30-34 year olds; low, medium and high education)

Indicator 6 captures gender differences in headcount labour market activity across levels of formal educational attainment. It takes the form of three sub-indicators, each measuring the gender gap in participation rates amongst men and women with low, medium, or high levels of education, respectively. In all three cases, the indicator is produced for the age groups 25-49, 25-29, and 30-34[56], for reasons similar to those discussed earlier under indicator 1.

The education levels used here are drawn directly from Eurostat, where distinctions between 'low', 'medium' and 'high' education are based on the usual ISCED97 classification system: individuals with 'low' education are those whose highest level of formal education sits within ISCED97 stages 0-2 ('*pre-primary, primary of lower secondary education'* (UNESCO, 2006: n.p.)); 'medium' education reflects a highest level of formal education at ISCED97 levels 3 and 4 ('*upper secondary and post-secondary non-tertiary education*' (UNESCO, 2006: n.p.)); and 'high' education represents those whose highest formal educational qualification corresponds to ISCED97 stages 5 and 6 ('*first and second stage of tertiary education'* (UNESCO, 2006: n.p.)).

Data for this indicator come from Eurostat (2013), where participation rate data disaggregated by gender and education level are available from 1992 onwards. Unfortunately, no directly comparable education-differentiated participation rate data are available for those countries outside of the European Union (EU) plus Norway, so Australia, Canada, New Zealand and the United States are excluded entirely[57]. Together,

[56] Unfortunately, the age groups used by Eurostat do not correspond exactly to those used by the OECD. In particular, they do not produce participation rate data for 25-34 year olds as a single age group. As a result, separate measures for 25-29 year olds and 30-34 year olds are used here.
[57] There is a danger that excluding these countries and changing the sample so drastically could bias results relative to those for indicator 1 (the gender gap in overall labour force participation rates). However, as it turns out results for indicator 6 across levels of education are largely consistent with those for indicator 1 at the overall level (see chapter 5.3 and 7.3).

these constraints result in an overall missing data rate of 45%, although the rate is only 7.2% within the EU countries (plus Norway) between 1992 and 2010.

Indicator 7. Female share of managerial employment amongst managers with a given level of education (all ages[58]; low, medium and high education)

Indicator 7 measures the female share (%) of employment in ISCO88 group 1 – that is, employment as 'legislators, managers and senior officials' – amongst ISCO88 group 1 employees with a given level of education. In other words, it uses three sub-indicators to capture the proportion of managers with low, medium or high education that are female. In doing so, it reflects women's access to managerial employment relative to their similarly educated male counterparts and, by extension, provides information on the relative ability of women with varying levels of education to reach top positions. Data are from Eurostat (2013), so distinctions between levels of education are identical to those for the previous indicator. Similarly, the sample is again limited to the EU countries plus Norway and the years 1992-2010[59]. There is a missing data rate of 48% across the sample as a whole, and a rate of 13% within the EU countries (plus Norway) between 1992 and 2010.

Indicator 8. Gender gap in the proportion of employees with top quintile annual earnings, by education level (25-54 year olds; dependent employees; low, medium and high education; five-year intervals)

This final indicator measures the male-to-female difference in the proportion of dependent employees (25-54 year olds[60]) with annual labour earnings[61] that fall within the top-fifth of the earnings distribution, by education level. It uses three sub-indicators to capture gender differences in the ability of those with low, medium or high education to reach high earning positions. Put differently, it reflects the ability of women with varying

[58] Unfortunately, data are not available for specific age groups.
[59] Similar to indicator 6, there is a danger that restricting the sample to the EU countries plus Norway and excluding the four non-European countries may bias results relative to those for indicator 4 (the overall female share of managers). Results for indicator 4 and indicator 7 shown later in this thesis are a little inconsistent, with one possible cause the difference in sample used (see chapter 7.4). Unfortunately, however, comparable data on the female share of managers across levels of education are not obtainable for the four non-European countries, and the data used here are considered the best available.
[60] Unfortunately, sample sizes become too small when looking at more specific age groups, so this indicator uses the broader 25-54 year old age group only.
[61] Just as for indicator 5, most of the earnings data here is gross pre-tax and transfer. However, 17 cases use net annual earnings due to the unavailability of gross earnings data (see section indicator 6).

levels of education to reach top wages relative to their similarly educated male counterparts.

Like indicator 5, this measure uses annual[62] earnings data extracted from the harmonised LIS database. Education levels are based on a standardised variable included in LIS that is comparable to the classification used by Eurostat: those whose highest formal qualification falls within ISCED97 levels 0-2 are classified as having 'low' education; individuals with a highest qualification at ISCED97 levels 3 and 4 are classed as 'medium'; and those with qualifications at ISCED97 stages 5 and 6 are classified as holding a 'high' level of education. Also like indicator 5, this indicator is measured at five-year intervals – with the five-year average used where there is more than one complete case per five-year period – due to a high rate of missing survey years in the LIS database. This produces a final indicator with between 80 and 82 out of a possible 119 complete country-waves (depending on the exact level of education), and a missing data rate of between 31-33% across the sample as a whole and 23-25% within available countries and years (New Zealand and Portugal are again missing entirely).

3.4. Methods of analysis

Using country level measures of both family policy and gender equality in employment that stretch across countries and time produces what is termed pooled time-series cross-section (TSCS) data. TSCS data are similar in structure to panel or longitudinal data, in that the same set of cases – in this instance, twenty countries – are observed repeatedly over a period time – here, over twenty-six years. The resulting dataset can be pictured as twenty-six cross-sections of country-level data stacked on top of one another or, equivalently, as twenty comparable time-series for each country placed side-by-side.

As TSCS data stretch across two dimensions they contain two sources of variation, namely, between-country or cross-sectional variation, and within-country or temporal variation. It is the latter that is of primary interest here. More specifically, given this thesis' research questions, the major focus of analysis is on exploiting within-country variation in the various measures of both family policy and gender equality in employment in order to understand relationships between changes in policy provision and developments in gender equality in employment.

[62] As for indicator 5 it uses annual rather than hourly or weekly earnings information due to missing data on the latter two. This should again be kept in mind when interpreting results.

The primary method used throughout the thesis to understand these within-country relations is TSCS multiple linear regression. To be more specific, the main method of analysis is fixed effects linear regression, a regression technique that strips away all between-country variation to produce estimates based on within-country changes in the dependent and independent variables only (see later in this section). Both this general and specific method are common in the literature – of the ten 'over time' comparative family policy studies reviewed in chapter **2.3.2**, all use some form of regression analysis while seven use fixed effects regression, or some variant thereof. There are some important differences between the exact technical specifications used here and those used in the literature (see later in this section), but this broad similarity aids the comparability of findings.

TSCS linear regression does, though, have its drawbacks. In particular, and as discussed in more depth in the following subsection, results from regression analyses are not always fully transparent and the use of single coefficients as estimates may over-simplify and remove relations from a more complex reality (Shalev, 2007a; Hantrais, 2009). To increase the transparency of findings, this thesis complements its various regression analyses with fairly detailed descriptions of patterns, trends and developments in both policy and labour market equality, as well as descriptions of simple bivariate associations between the two. Any inferences emerging from these more descriptive analyses are strictly provisional, but provide a reasonably detailed empirical background against which results from the more formal regression analyses can be discussed.

The following subsections discuss both of the methods of analysis in some detail, starting first with the descriptive analyses.

3.4.1. Descriptive analysis

As touched on above, the use of regression analysis in macro comparative research is popular but is not without its limitations. One particularly vocal critic of the use of regression in cross-country comparative studies – and, indeed, of the large-N statistical approach to macro comparative research more generally – is Michael Shalev (2007a). He argues that statistical analyses often sacrifice much of the value of comparative data because methods such as regression transform real world cases into little more than observations and scores contained within variables. This is problematic, Shalev suggests, because country-cases are in themselves of great interest for cross-national comparative research. By making cases invisible and disguising proper country names, statistical

techniques dispose of valuable information and prevent the application of a researcher's substantive knowledge of the cases under consideration. As a result, regression analyses produce results that are lacking in transparency and conclusions that at times are difficult to verify against actual real world country experience (Shalev, 2007a).

To be clear, Shalev does not suggest abandoning macro-level quantitative comparative data analysis altogether. Rather, he suggests comparativists using macro-quantitative data should adopt '*low-tech'* (2007a:261) tabular, visual and graphical methods that convey quantitative information while also retaining clearly visible and identifiable country case names. According to Shalev, these techniques are somewhat more transparent and allow for the application of substantive knowledge of case context, while also aiding identification of outliers and those cases that require further in-depth attention (Shalev, 2007a; Shalev, 2007b).

This thesis acknowledges Shalev's critique of regression analysis and recognises the dangers of ignoring the real world cases from within which comparative data are generated. However, Shalev's 'low-tech' solutions are not themselves problem-free. In particular, tabular and graphical methods can quickly become unwieldy and incomprehensible when faced with large amounts of data. This is especially the case where there are several potential concurrent explanatory factors, as tabular and graphical techniques are generally restricted to displaying relations with only a few independent variables at any one time. Moreover, these relatively simple methods generally struggle to provide statistical control, in that for the most part they cannot estimate relations after accounting for the influence of alternative factors or after dealing with other statistical complications such as trending series (Pontusson, 2007: 329) [63].

These issues are highly relevant here. Firstly, this thesis looks to examine policies and employment outcomes across a number of countries and years and therefore faces a large number of data points – 415, where data are available for all countries and years[64]. Secondly, gendered employment outcomes are likely to be influenced by several factors

[63] An alternative method capable of dealing with these dual issues – the need to retain proper case names, and the need to handle large quantities of data that may influence an outcome simultaneously – is Qualitative Comparative Analysis (QCA) (Ragin, 1987; Rubinson and Ragin, 2007). By applying formal logic and set-theory to comparative data, QCA allows researchers to conduct rigorous analysis covering a reasonable number of cases, all the while retaining proper case names. However, since a substantial part of the rationale for this thesis is to expand upon and verify existing cross-sectional relations produced primarily through statistical analyses, use of QCA is not considered a suitable option here.

[64] The years 1985-1990 are set to missing for Germany in all cases due to the need to avoid distortions arising directly from reunification.

simultaneously. Even after accounting for the influence of the various policy indicators outlined earlier, this thesis will need to consider and control for the effects of several other important independent variables such as service sector size, educational equality and fertility (Polachek, 1995; Huber and Stephens 2000; Blau and Kahn, 2003; Polachek, 2004; Abendroth et al, 2011; Lips, 2013). It is in these circumstances that multiple regression and related statistical techniques remain useful. In comparison to Shalev's low-tech methods, they are better able to synthesise large quantities of policy and employment data, and most importantly can provide some level of statistical control between competing determining factors (Pontusson, 2007: 329).

Perhaps the best approach, then, is to combine analyses conducted using both statistical methods such as linear regression and Shalev's low-tech techniques. Indeed, this is the recommendation made by both Pontusson (2007) and Kenworthy (2007) in response to Shalev's (2007a) critique. Here, this is put into practice through a series of descriptive analyses that are presented for each indicator of gender equality in employment prior to the results of the corresponding regression analysis. Put differently, before the presentation of the relevant set of regression models, trends and changes in each indicator of gender equality employment and any immediate links with changes in family policy provision are summarised and described using relative simple yet transparent methods. Techniques used include tables, figures, descriptive statistics and measures of bivariate linear association such as Pearson's R correlation and, in certain cases, simple bivariate linear regression.

These descriptive analyses are unavoidably limited. In particular, in order to produce manageable and interpretable analyses it is necessary to simplify the data somewhat. In most cases, within-country changes in policy and equality are represented by the difference in a given indicator between two 'snapshot' years at the beginning and end of the period covered (1985 and 2010), or the earliest and latest years available in cases with missing data. This, of course, disguises the timing of changes and means that these descriptive analyses may miss important variations in the intervening period. As touched on above, these relatively simple methods also suffer from a lack of statistical control, so any emerging relations are fully open to omitted variables bias. With these limitations in mind, any inferences from these analyses are strictly provisional and offer only suggestions as to possible relations between changes in policy and gender equality in employment.

Nevertheless, the descriptive analyses provide a valuable complement to the subsequent and more formal regression analyses. The methods used for the descriptive analyses generally retain real country names, which helps with the identification of outliers, issues and complications. More broadly, results provide an empirical foundation for the later regression analyses, and ensure that relations between policy and equality are at least partly grounded within a 'real-world' context.

3.4.2. TSCS linear regression analysis

Regression analysis is conducted through eight sets of two-way fixed effects linear regression models, with each set using one of the eight indicators of gender equality in employment as its dependent variable. The key independent variables across all eight sets of models are the nine main indicators of family policy outlined in section **3.2**. Certain specifications do, though, use the alternative measures of leave policy – that is, total effective maternity and parental leave available to mothers, and effective childcare leave – in place of the main leave indicators for reasons outlined earlier. Each model also uses several additional control variables to account for alternative influences on the labour market outcome under consideration. These controls are described later in this subsection.

The general set-up of the regression models is similar across the various measures of gender equality in employment. This set-up is described in the subsections below. It should be noted here though, that using TSCS data in regression analysis can introduce a number of potential statistical issues that may complicate estimation, particularly within the usual ordinary least squares (OLS) setting. Many of these issues relate to the repeated observation of the same set of countries over time, which if uncorrected can lead to biased coefficients and incorrect standard errors (Beck and Katz, 1995; Beck, 2001; Wilson and Butler, 2007). Unfortunately, there is not enough space here to discuss these issues fully. The following offers only a summary of regression specifications, with a more detailed discussion of various issues concerning the regression models given in appendix **B.4** (pp. 327-339).

General two-way fixed effects model

The general econometric model is fairly similar to that used by Ruhm (1998) and later by Akgunduz and Plantenga (2012) and Thévenon and Solaz (2013) in their respective TSCS studies of changes in leave entitlements. Specifically, estimation takes place through a

form of fixed effects regression described by Ruhm (1998) as a 'difference-in-difference-in-difference' (DDD) model – effectively, a linear regression model that uses both country and time fixed effects and country-specific time trends plus a 'gender difference' measure as its dependent variable.

The starting point for the model is two individual two-way fixed effects difference-in-difference models for both the male and female sides of a given labour market indicator. Let subscript $_j$ represent a given country and $_t$ denote a given year, with $_m$ and $_f$ standing for male and female, respectively:

$$Y_{mjt} = \beta_1 C_j + \beta_2 T_t + \beta_3 C_j T_t + \beta_4 P_{jt} + \beta_5 X_{jt} + \varepsilon_{mjt} \quad (1)$$

$$Y_{fjt} = \beta_1 C_j + \beta_2 T_t + \beta_3 C_j T_t + \beta_4 P_{jt} + \beta_5 X_{jt} + \varepsilon_{fjt} \quad (2)$$

Where Y_{mjt} is the gender-specific value on a given labour market outcome, C_j and T_t are country and time fixed effects, respectively, $C_j T_t$ are country-specific time-trends, P_{jt} represents the indicators of family policy outlined in section **3.2** and X_{jt} are other included country-level control variables.

Country fixed effects – essentially, a set of country-specific dummy variables, less one to avoid multicollinearity – are used to deal with unit heterogeneity, that is, to remove unobserved time-invariant country-specific factors that could bias estimates (Dougherty, 2006: 412). In doing so, they also have the effect of completely absorbing all between-country differences in the *levels* of all included variables (Beck, 2001: 285; Wilson and Butler, 2007: 120; Bartels, 2008: 6), so that all that remains is within-country variation and with the model transformed into one of within-country change only (Plümper et al, 2005: 334). Time fixed effects – again, a set of year-specific dummy variables, less one – are included for similar reasons, that is, to control for unobserved year-specific effects that are common across countries (Wooldridge, 2009: 534). Lastly, country-specific time trends are used to de-trend the data so as to avoid bias from any country-specific time effects and to reduce the dangers of spurious relations arising from trending series (Wooldridge, 2009: 365; see appendix **B.4** (pp. 333-335) for more detail).

These individual gender-specific difference-in-difference models provide unbiased estimates of the effects of changes in family policy on a given employment outcome for a given gender if changes in family policy are uncorrelated with the error term, that is, uncorrelated with wider unobserved determinants (Thévenon and Solaz, 2013: 25). However, as discussed earlier in section **3.3**, it is likely that both male and female labour

market outcomes are at least partly determined by wider economic processes that influence the general level of a given outcome. If such processes are not properly captured by the included controls and happen to correlate with the measures of family policy, then estimates from (1) and (2) are open to bias. As also touched on in section **3.3**, one way to avoid at least part of this bias is to use the gender difference on a given labour market outcome as the dependent variable (Thévenon and Solaz, 2013: 25). In effect, this is equivalent to subtracting (2) from (1).

$$Y_{mjt} - Y_{fjt} = (\beta_{1mj} - \beta_{1fj})C_j + (\beta_{2mt} - \beta_{2ft})T_t + (\beta_{3mjt} - \beta_{3fjt})C_j T_t + (\beta_{4mjt} - \beta_{4fjt})P_{jt} + (\beta_{5mjt} - \beta_{5fjt})X_{jt} + (\varepsilon_{mjt} - \varepsilon_{fjt}) \quad (3)$$

or, equivalently,

$$\Delta Y_{jt} = \beta_1 C_j + \beta_2 T_t + \beta_3 C_j T_t + \beta_4 P_{jt} + \beta_5 X_{jt} + \varepsilon_{jt} \quad (4)$$

where,

$$\Delta Y_{jt} = Y_{mjt} - Y_{fjt}$$

This is Ruhm's (1998) fixed effects DDD model. The country and time fixed effects and country-specific time trends serve the same purpose as in (1) and (2), that is, the former two remove unobserved country and time effects and turn the model into one of within-country change only, while the country-specific time trends continue to de-trend the data and control for bias from linear country-specific time effects. The β coefficients on the various included policy and control factors estimate the influence of within-country change in the given factor on within-country changes in the gender gap in a given labour market outcome.

Cluster robust standard errors

Model (4) represents the general regression model used throughout the thesis. However, an additional concern that needs to be discussed here is the proper estimation of standard errors. More precisely, a standard OLS assumption is that regression errors are 'spherical', that is, errors are identically and independently distributed with constant variance across observations (homoscedastic) and with no systematic dependence or correlation between observations (no autocorrelation) (Beck and Katz, 1995: 636; Beck, 2001: 274; Stock and Watson, 2007: 182). TSCS data such as those used here often violate these assumptions, as

repeatedly observing the same countries over time often results in 'clustered' data and subsequently non-independent errors across units and time (Beck and Katz, 1995: 636; Plümper et al, 2005: 329; Bartels, 2008: 2). In particular, errors from models that use TSCS data tend to be panel heteroscedastic, with each country having their own and different error variance; contemporaneously correlated, with errors for a given country correlated with errors for other country at a given point in time; and serially correlated, with errors for a given country in a given year correlated with earlier and later errors for that country (Beck and Katz, 1995: 636; Plümper et al, 2005: 329). The result is that the normal OLS standard errors are unlikely to be correct, leading to over- or under-confidence in the coefficients and incorrect inferences (Beck and Katz, 1995: 636; Beck, 2001: 274).

Tests shown in appendix **B.4** (pp. 330-332) indicate that the regression models used in this thesis suffer from some but not all of the complications above. More specifically, the tests suggest that errors from models for all dependent variables are subject to the first and third issues, panel heteroscedasticity and serial correlation. Notably, though, all models do not appear to suffer from contemporaneous correlation of errors.

There are a variety of methods available for dealing with issues caused by non-spherical errors (see appendix **B.4** (pp. 330-332)). The approach used here is to estimate model (4) but with cluster robust standard errors (CRSEs) used in place of the normal OLS standard errors. CRSEs adjust standard errors to the clustered properties of the data so, accordingly, provide errors and inferences that are correct even in the presence of non-spherical residuals (Rogers, 1993; Angrist and Pischke, 2009: 312-313; Baum, 2006: 138; see appendix **B.4** for more detail).

Notably, most existing 'over time' TSCS family policy studies do not appear to use CRSEs or offer any alternative correction for serial correlation or any contemporaneous correlation. Of the 'over time' studies reviewed in chapter **2.3.2** and from their respective methodological discussions, only Ferrarini (2006) appears to correct standard errors for serial correlation. Winegarden and Bracy (1995) use no correction at all, but do state that their residuals do not suffer either serial correlation or heteroscedasticity. Several others (e.g. Ruhm, 1998; Jaumotte, 2003; Akgunduz and Plantenga, 2012) use Huber-White robust standard errors to correct for general heteroscedasticity but seem to ignore the possibility of temporally or cross-sectionally dependent residuals. It should be pointed out that without direct access to their data it is not possible to know whether the models used in these existing studies actually suffer from either serially or contemporaneously correlated errors. However, results shown later in this thesis – especially in chapter **5** –

suggest that the use of CRSEs may in certain instances impact at least slightly on inferences regarding the effects of family policies.

Homogenous slopes

It is worth briefly highlighting here that model (4) estimates fixed or homogenous coefficients that summarise the association between a given dependent and given independent variable across the entire sample, and thus reflects relations only as they exist across all sample countries and years. The assumption implicit in model (4), then, is that that the effects of a given policy are uniform or homogenous across all countries and time periods. Given the diversity of employment contexts both between countries and also within countries over time, this may not always be strictly accurate (see e.g. Shalev, 2007a). It would of course be valuable to explore whether – and, indeed, why – relations differ across countries or between subsets of the sample through, for example, the use of heterogeneous slopes[65] (Fairbrother, 2014; see appendix **B.4** (pp. 335-336)). However, such an exercise is likely to be costly – in terms of parameters and degrees of freedom (Beck, 2001: 286), but also and more practically in terms of the space needed to fully present results – and is beyond the scope of this thesis. Nonetheless, it should be pointed out that the presence or absence of a given association when estimated by model (4) does not necessarily mean that the *exact* same relation exists within a given country or in a given subset of the sample. It does mean, though, that the estimated association exists across the sample as a whole.

Control variables

Table **3.5** summarises variables used across regression models to account for alternative influences on the given labour market indicator. Seven controls are used in total[66]. Most are included in all models, although some are used only in certain specifications or models of certain labour market outcomes.

[65] Using multilevel models, for example (see Fairbrother (2014) for an illustration of the use of multilevel models with TSCS data).
[66] Other controls that were considered but that are not used include gross domestic product per head – which would reflect the influence of general economic development, but is rejected as it is found to contain a unit root (see appendix **B.4** (pp. 333-335)) – and gender differences in years of education, which could be used as an alternative indicator of gender equality in education but is rejected as it is found to correlate highly with service sector size.

Table 3.5. **Descriptive statistics for the seven control variables used in linear regression models**

	Indicator	N	% missing	Mean	Standard deviation	Between-country standard deviation	Within-country standard deviation	Minimum	Maximum
1	Service sector employment as a proportion of total employment	514	0%	67.35	7.63	6.32	4.47	42.17	81.27
2	Government employment as a proportion of the labour force	514	0%	17.13	6.14	6.18	1.17	9.19	34.04
3	Employment protection legislation index	514	0%	2.18	0.95	0.95	0.17	0.26	5.00
4	Economic freedom index	514	0%	7.53	0.64	0.50	0.41	5.10	8.80
5	Crude birth rate	514	0%	12.21	1.96	1.80	0.91	8.10	17.60
6	Female share of tertiary education enrolment	514	0%	50.58	4.76	2.97	3.83	36.53	60.49
7	Female employment-to-population rate, 25-54 year olds	504	2%	66.84	12.22	10.40	6.66	29.38	89.63

The first two controls – 'service sector employment as a proportion of total employment', and 'government employment as a proportion of the labour force' (see 'Data Sources' for sources) – are used in all models to capture the influence of labour market structures on gender differences in employment. The former measures the proportion of employees that work in 'service' activities – that is, activities in ISIC rev. 3 categories G to Q (UN, 2015) – as opposed to the agricultural or industrial secors. That latter captures the proportion of the labour force that work in all levels of government – central, local and, where appropriate, state government – plus also any publicly-owned companies and organisations[67] (OECD, 2013d).

The respective sizes of the service and public sectors are expected to have some effect on both gender equality in labour market activity and gender job segregation and occupational attainment. With regard to labour market activity, the expectation in both cases is that an increase in the size of both sectors should promote equal participation. Several authors identify service sector employment as central to women's activity, as service jobs tend to demand and appeal to female skills (Goldin, 1990; Charles, 1992; Esping-Andersen, 2002; Pettit and Hook, 2005; Thévenon, 2013). Likewise, government employment tends to be disproportionately female, perhaps again because many public sector jobs demand skills that tend to be held by women, but also at least in part because working conditions tend to be more 'female-friendly' (Esping-Andersen, 1990; Mandel and Semyonov, 2006; Thévenon, 2013). Accordingly, a larger service or public sector should increase opportunities for women to participate in the labour market relative to their male counterparts.

The expected effects of both service sector size and public sector size on job segregation and occupational attainment are a little more ambiguous. On the one hand, drawing women into employment through changes in the size of the service and public sectors risks inflating gender segregation and the concentration of female employees in feminised occupational 'niches' (Golding, 1990; Charles, 1992; Mandel and Semyonov, 2006). On the

[67] It is worth noting that 'government employment as a proportion of the total labour force' includes any employees working in public childcare services. As a result, it is possible that this variable could absorb at least a part of the effect of changes in the three childcare variables on gender differences in employment outcomes, particularly with regard to the possible damaging influence of public childcare services on gender segregation and equality in occupational attainment and especially for the gender gap in employees working in 'female-type' occupations. To check for this, the models shown later in chapters **6** and **7** were re-run with 'government employment as a proportion of the total labour force' omitted. Although 'government employment as a proportion of the total labour force' is itself statistically significant in many of these models, omitting it makes no difference to results for the three measures of public childcare policy and revealed no new relations as measured by significance at the 5% confidence level.

other, both tend to demand female skills and the public sector in particular strives to be a 'responsible' employer (Mandel, 2012: 244). As a result, it is feasible that an increase in either may afford women more opportunities to reach high-level positions than would otherwise be the case.

The second two controls – 'the employment protection legislation index' and 'the economic freedom index' (see 'Data Sources' for sources) – are used to reflect the influence of labour market institutions. The former is a summary indicator produced by the OECD to capture variation in the strictness of employment protection legislation across countries and time. It is a composite of 21 measures that reflect statutory requirements – such as notice periods and severance pay – faced by employers when conducting dismissals (both individual and collective), plus also the regulation of temporary contracts (OECD, 2013b). The latter is a composite of 42 measures designed to reflect economic 'freedom', in the classical or market liberal sense, again across countries and over time. It contains indicators from five broad areas: the size of government in terms of public expenditure and taxation; the strength and effectiveness of legal systems and property rights; 'sound' money, including measures of the level and volatility of inflation; trade openness, captured by barriers to and tariffs on trade, plus measures of controls on the movement of capital and people; and the regulation of business, labour and credit markets (Gwartney et al, 2013). Data for the 'economic freedom index' are collected primarily from international organisations, including the International Monetary Fund, the World Bank, and the World Economic Forum (Gwartney et al, 2013: 2).

For employment protection legislation, the expectation is that an increase in the strictness of legislation could damage gender equality in employment. Kahn (2005), for example, shows that the increased firing costs associated with employment protection discourage job creation, with the impact falling disproportionately on newly mobilised female workers. As a further consequence, new female entrants may be driven into low-status and insecure temporary employment (Kahn, 2005), which may in turn hamper their ability to build careers and subsequently access high-level positions. In contrast, an increase in economic competition – as measured here by the 'economic freedom index' (Gwartney et al, 2013) – is expected to increase women's ability to reach top positions and high wages as competitive pressures force firms to abandon discrimination in an effort to minimise costs and maximise productivity (Zweimüller et al, 2007). The theory in the latter case extends only as far as women's occupational attainment, so the economic freedom index is included only in models of the female share of managers and of equality in access to top quintile earnings. The employment protection legislation index, however,

is used across models of all gender equality indicators.

Two variables – 'the crude birth rate' and 'the female share of tertiary education enrolment' (see 'Data Sources' for sources) – are used to control for the role of demographics factors. The crude birth rate captures fertility and is defined as the number of live births per 1000 population (World Bank, 2012). The female share of tertiary education enrolment – that is, the female share of individuals enrolled in educational programmes classified in ISCED97 levels 5 or 6 (UNSECO, 2013) – meanwhile is used to measure gender equality in education.

The theoretical effects of fertility are complex and ambiguous (Englehardt et al, 2004). The presence of motherhood 'gaps' in activity and earnings (Misra et al, 2006; Misra et al, 2011) suggest that, for various reasons, parenthood damages women's participation and occupational attainment relative to their male counterparts. The intuition, then, is that higher birth rates should translate into lower female activity (Winegarden and Bracy, 1995) and inflated inequalities in career attainment, all else equal. However, cross-national evidence also suggests that fertility tends to be higher in countries with greater female participation (Jaumotte, 2003). That said, the causal links here are likely to be complex – it is possible that high female participation drives high fertility through increases in household resources, or that both may be caused by third factors such as policies and institutions that facilitate both female employment and parenthood (Stier, Lewin-Espstein and Braun, 2001; Misra et al, 2006; Misra et al, 2011). Recent time-series cross-section evidence suggests that changes in fertility share a strong, clear and negative association with female participation (Bloom et al, 2009), so on balance it is expected that increases in fertility should inflate gender differences in employment outcomes.

The impact of gender equality in education is expected to be more straightforward. Increases in the relative level of female education should raise relative female productivity, leading to decreases in gender differences in labour supply and in earnings (Blau et al, 2001; Bratti, 2003; Polachek, 2004; England et al, 2012; Thévenon, 2013). It should also promote women's relative ability to reach senior positions, although this receives little support from existing evidence (Abendroth et al, 2011).

Lastly, evidence produced later on in chapter **5** suggests that within-country variation in equality in working hours may be at least partly determined by changes in female headcount activity. Accordingly, the female employment rate is used as a control in models of the gender gap in usual weekly working hours. There is some danger, though, that

female employment may be endogenous with working hours, as increases in the availability of part-time employment may induce female participation (Thévenon, 2013). Thus, only certain models use the female employment rate with explicit comparisons made between those with and without this additional control.

Time lags

A final consideration for the regression analyses is the use of time lags on the independent variables. It is theoretically likely that the effects of at least some of the independent variables will not be felt immediately, but rather will take at least one year to register. This is particularly likely to be the case for leave policies aimed at or available to mothers – as given the length of many of these policies it is possible that any effects will take at least one year to manifest on a given outcome – but may also apply to other independent variables too. In this situation, it is desirable to apply time lags to the independent variables so as to properly capture the impact of a change in the variable.

Unfortunately, the family policy literature is unclear on the ideal or optimal length of time lags on family policies. Some authors lag one or several policy variables by one year (Ruhm, 1998: 301; Pettit and Hook, 2005: 788; Thévenon and Solaz, 2013: 27), others by two years but under the suspicion that the true lag may be longer (Misra et al, 2011: 147), some use no apparent lags at all (Ferrarini, 2006; Nieuwenhuis et al, 2012), while Tranby (2010: 104) uses empirically-determined lags that range from one to five years. Each additional year of lag does however come at a cost – every year of lag used on any of the independent variables necessarily leads to the loss of one year of data on *all* other included variables.

The approach taken to time lags here is fairly cautious. Leaves that are available to mothers – mother-specific earnings-related leave, gender-neutral earnings-related leave, total flat-rate and childcare leave available to mothers, and total general leave for mothers – are lagged by one year in all models, with the exception of those for the gender gap in top quintile earnings due to this indicator being measured at five-year intervals. The female share of tertiary enrolment is lagged by five years in all models, although in this case the indicator is 'lagged' prior to its inclusion in the dataset to avoid the loss of five years of data. Lastly, the three dual earner childcare indicators and the measures of both service sector size and public sector size are lagged by one year in models of gender equality in labour market activity, while the crude birth rate is lagged by one year in all models. In these latter cases, however, the lags are used mostly as precautionary measures

with the intention of reducing the risk of reverse causality (see appendix **B.4** (pp. 337-338).

3.5. Conclusion

The methods and techniques outlined in this chapter of course suffer from limitations. The 'large N' quantitative comparative research strategy employed, for instance, necessitates the use of fairly abstract measures and limits the detail with which indicators can reflect policy provisions and gendered employment outcomes. It also restricts the depth and breadth of measures, as data are required to be available across the sample countries and years. As a result, the measurement of both family policy and of gender equality in employment is not perfect. Comparable data on public childcare provisions are particularly scarce, and even where it has been possible to construct indicators missing data rates remain high. Likewise, the three country-level indicators chosen to capture gender job segregation and equality in occupational attainment are unlikely to cover all relevant aspects of women's career attainment or the relative position of men and women within the labour market – they do not reflect cover gender differences in employment at the bottom end of the labour market, for instance, or the concentration of men and women in difference economic sectors – while the three education-differentiated measures of gender differences in employment only touch on the various ways in which gender equality may differ across levels of education. Lastly, all measures of gender differences in employment outcomes remain fairly aggregated even after differentiating certain indicators by levels of education and in some cases age. As a result, any findings from these measures should be read as the average effect across demographic and socio-economic groups – there remains at least some possibility that the impact of a given policy may differ with variations in male and particularly female charecteristics and socio-economic status.

Nevertheless, the various methods outlined above allow this thesis to go some way towards answering the three research questions stated earlier in chapter **1**. Through the use of both descriptive analyses and fixed effects multiple linear regression, this thesis is able examine how within-country variation in measures of family policy relate to within-country variation in measures of both gender equality in labour market activity and gender job segregation and occupational attainment at both the overall level and also across levels of education. More broadly, these methods and techniques allow this thesis to provide an empirical investigation into how changes in family policy provision influence and impact upon gender differences in a variety of employment outcomes.

The following four chapters put the methods described in this chapter into practice. The next chapter concentrates on family policies themselves. It uses descriptive techniques to identify trends and patterns in family policy provision, and to discuss how family policies have developed both within and across countries over the years following 1985. Chapter **5** focuses on links between changes in family policy and gender differences in labour market activity. It contains both the descriptive and fixed effects regression analyses of relations between changes in family policy and developments in the two measures of gender differences in overall economic activity. Chapter **6** does the same for the three indicators of gender segregation and equality in occupational attainment, while chapter **7** explores relations between changes in policy and developments in the three education-differentiated indicators of gender differences in employment.

Chapter 4. Changes and developments in family policy, 1985-2010

Family policies have changed considerably in many countries in recent decades (Ferragina et al, 2013). A fairly substantial body of research details and describes the evolution of family policy provision within countries, with the bulk pointing towards widespread if diverse patterns of reform (Mätzke and Ostner, 2010). However, much of this literature takes the form of small-N case study research, with each individual article concentrating on developments in only one or a few countries (e.g. Rønsen and Sundström, 2002; Brennan, 2007; Lewis and Campbell, 2007; Lewis, 2009; Abrahamson, 2010; Knijn and Saraceno, 2010; Leitner, 2010; Mätzke and Ostner, 2010; Ostner, 2010; Eydal and Rostgaard, 2011). This is not necessarily problematic in itself – indeed, these case studies provide rich and detailed accounts not just of policy developments, but also of the policymaking process and the causes of and constraints on any reforms – but it does mean that many existing findings are country-specific and limited in terms of generalisability (Mätzke and Ostner, 2010: 387). Only a few studies take a broader approach and examine cross-national trends and developments in family policy from a more generalisable, large-N comparative perspective (Gauthier, 2002; Ferrarini, 2006; Ferragina et al, 2013).

For the most part, findings from these few large-N studies suggest that the past few decades can be characterised by a general expansion in family policy provision, albeit with the extent and direction of increases differing somewhat across counties. Both Gauthier (2002) and Ferrarini (2006) chart developments in leave entitlements and in family-related tax and cash transfers policies between 1970 and the end of the 20th century[68], with the former looking at 22 and the latter 18 OECD countries[69]. Both report widespread increases in provision in the years following 1970. However, they also find that the extent of expansion and the types of policy provided differ between states and in particular between groups of countries (Gauthier, 2002: 467; Ferrarini, 2006: 65-67). Leave policies with a dual earner orientation developed more strongly in the Scandinavian nations (Ferrarini, 2006: 59, 65-66). Conversely, family-related tax and cash transfer policies and those leaves programmes aimed more at supporting the family as a caregiving unit tended to develop more in the traditional conservative continental European countries (Gauthier,

[68] Gauthier's (2002) study runs 1970-1999, while Ferrarini's (2006) runs 1970-2000.
[69] Gauthier (2002): Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Japan, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, the United Kingdom, the United States. Ferrarini (2006): Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Italy, Japan, the Netherlands, New Zealand, Norway, Sweden, Switzerland, the United Kingdom, the United States.

2002: 459; Ferrarini, 2006: 66-67). The end result is that both studies describe a pattern of growth and divergence in the provision of family policy across countries.

More recently, Ferragina et al (2013) explore developments in leave programmes, child benefits and public child care expenditure for 18 OECD countries[70] between 1980 and 2008. This investigation is only one part of a wider article on welfare state change, and as a result is fairly brief. Nonetheless, findings again suggest that most countries shifted towards a more generous package of family policy provision over the years following 1980 – indeed, the authors go as far as to suggest that the general process represents a '*socialization of family policy*' (2013: 799). Only the Netherlands and Denmark decreased provision, although the authors explain that in both cases this may be the result of a move towards employer responsibility for the payment of parental leave benefits (2013: 800).

This chapter looks to build on and complement these few existing large-N studies. Using the thesis' nine main indicators of family policy and their three corresponding policy indices, it charts the development of family policy across the twenty sample OECD countries over the years 1985–2010. In doing so, it expands upon Gauthier (2002) and Ferrarini (2006) by extending the analysis up to 2010, and on Ferragina et al (2013) by adding detail to their relatively brief investigation. The chapter also serves a more practical function, in that it helps familiarise the reader with the policy data used in the thesis and provides a policy context for the following analytical chapters.

The chapter is structured as follows. The next section – **4.1** – outlines and clarifies the data and techniques used to examine developments in family policy. Section **4.2** offers a brief overview of between-country difference in family policy provision, in part with the intention of providing a background and foundation for the subsequent examination of change, but also to help validate the measures of policy used throughout the chapter and, indeed, rest of the thesis. Sections **4.3**–**4.5** form the core of the chapter. Each explores and describes changes and developments in one of the three areas of family policy outlined earlier in chapter **2** – specifically, they examine changes in dual earner-carer leave policy, dual earner childcare policy, and general family support policy, respectively. Lastly, section **4.6** draws together findings from the previous three sections, discusses any broad trends or common patterns of development, and concludes.

[70] Ferragina et al (2013): Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Italy, Japan, the Netherlands, New Zealand, Norway, Sweden, Switzerland, the United Kingdom, the United States.

4.1. Data and methods

Family policies are measured in this chapter mostly through the three policy indices outlined earlier in chapter **3.2**, that is, through the dual earner-carer leave policy index, the dual earner childcare policy index, and the general family support policy index. To some extent, it may be preferable to explore developments in each of the nine individual indicators of family policy themselves, since this would provide a more detailed picture of trends and patterns in provision. However, focusing on changes in each of the nine individual measures would quickly lead to a bloated and unmanageable analysis, and would increase the difficulty of identifying any general trends and patterns in policy provision. Thus, in much of what follows the indicators are presented mostly in the form of the simpler policy indices, albeit with support from the nine individual indicators at certain points across the chapter where appropriate.

Changes in measures of family policy are examined through the use of tables, charts and descriptive statistics. As describing developments across each and every year in the sample would be unwieldy at best – each of the indicators contains up to 415 data points – the data presented in these tables and charts is limited mostly to results in and changes between two or three 'snapshot' time points at the beginning, middle and end of the series (1985, 1998 and 2010). Such a simplification means that the analysis cannot identify the exact timing of changes in policy and may miss variations between the snapshot years, but is necessary to produce a manageable investigation. Full results for each individual indicator and each policy index are presented in tables **C.1-C.14** in appendix **C** (pp. 342-355).

It should be noted here that much of the discussion in this chapter refers to and is organised around some general family policy typology, as is shown in table **4.1** (overleaf). This general typology is the same as that outlined earlier in table **3.2** in chapter **3.1,** and is derived from the various country clusters produced by Esping-Andersen (1999), Lewis (1992), Korpi (2000), Leitner (2003) and Misra et al (2006). As discussed in chapter **2**, there is considerable debate around the extent to which such a typology properly describes variation in policy provision – indeed, results presented in the next section suggest that certain countries may deviate slightly from their classification in these usual country groups. Nonetheless, the typology is useful for structuring discussion and provides a means of highlighting similarities and differences in the development of policies between countries that are, for the most part, considered reasonably similar in their approach to family policy.

Table 4.1. **General family policy typology**

Country	General family policy country group
Denmark	Scandinavian
Finland	
Norway	
Sweden	
Belgium[1]	Conservative European
France[1]	
Austria	
Germany	
Ireland	
Luxembourg	
Netherlands	
Greece	Southern European
Italy	
Portugal	
Spain	
Australia	Liberal
Canada	
New Zealand	
United Kingdom	
United States	

Source: Adapted from Esping-Andersen (1999); Lewis (1992); Korpi (2000); Gauthier (2002); Leitner (2003) and Misra et al (2006)

1. Belgium and France are partially separated from the remaining conservative European countries to reflect the observation made by many (e.g. Esping-Andersen (1999), Leitner (2003) and Misra et al (2006) that these two deviate slightly from the other conservative European countries in the extent to which they provide public childcare services.

Finally, it should also be noted that it is not the purpose of this chapter to analyse the causes and drivers of any developments in family policy. Indeed, doing this properly would likely require an entire thesis in itself – especially given the number of countries in the sample – and might be better conducted through a method that retains more qualitative information. Rather, this chapter focuses almost entirely on describing developments and identifying any broad cross-country trends in family policy provision over the past few decades.

4.2. Between-country differences in family policy

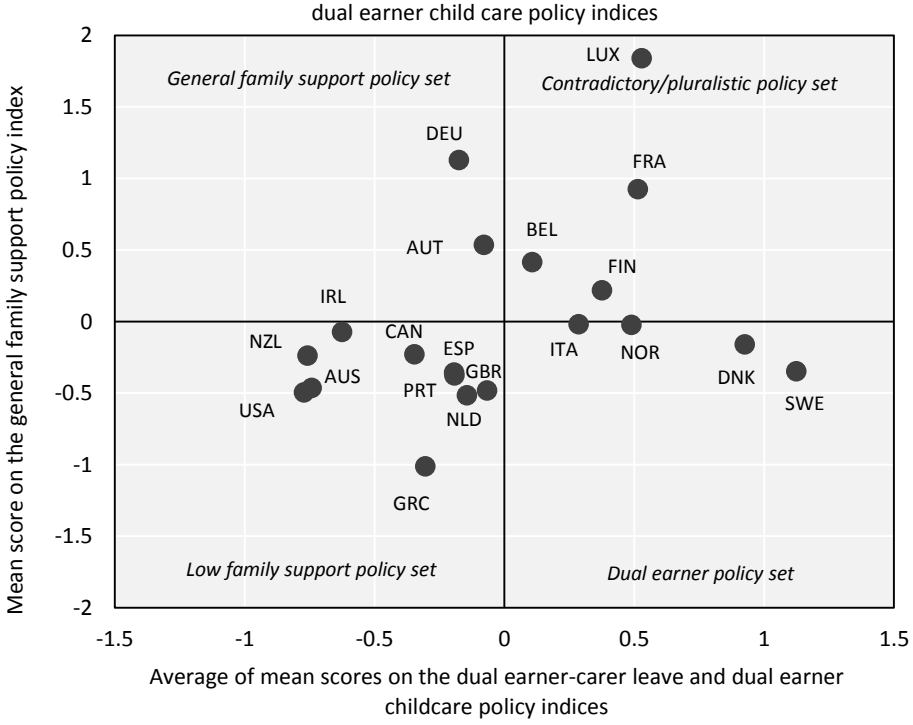
It is well documented that patterns and configurations of family policies differ substantially between countries (Esping-Andersen, 1999; Korpi, 2000; Leitner, 2003; Misra et al, 2006; Ferrarini, 2006; Korpi et al, 2013). The Scandinavian states are usually found to be generous providers of 'female-friendly' leave and childcare policies (Esping-Andersen, 1999; Korpi, 2000; Misra et al, 2006; Mischke, 2011; Korpi et al, 2013), while

the conservative European countries tend to be oriented more towards the provision of policies that support the family in its caring function (Korpi, 2000; Misra et al, 2006; Ferrarini, 2006; Mischke, 2011; Korpi et al, 2013). The Southern European and liberal-type countries, meanwhile, are often found to be scant providers of all forms of family policy (Esping-Andersen, 1999; Korpi, 2000; Leitner, 2003; Misra et al, 2006; Ferrarini, 2006; Korpi et al, 2013).

As a starting point for the chapter, figure **4.1** illustrates between-country differences in configurations of family policy as they are captured by average scores across the series on the three family policy indices. Country series-mean scores on the general family support policy index are set on the vertical axis, while for ease of comparison the horizontal axis shows the average of series-mean scores on the two dual earner policy indices.

Figure 4.1. **Country family policy configurations, mean average 1985-2010**

Mean country scores on the general family support policy index and the mean average of mean country scores on the dual earner-carer leave and dual earner child care policy indices



Note: AUS = Australia, AUT = Austria, BEL = Belgium, CAN = Canada, DNK = Denmark, FIN = Finland, FRA = France, DEU = Germany, GRC = Greece, IRL = Ireland, ITA = Italy, LUX = Luxembourg, NZL = New Zealand, NLD = the Netherlands, NOR = Norway, PRT = Portugal, ESP = Spain, GBR = United Kingdom, USA = United States. For Germany, country average scores 1991-2010.

The plot is divided into quarters around the origin, which represents the overall mean score on each policy index across the sample. Following Ferrarini (2006), it is possible to characterise the resulting quartiles as differing sets or configurations of family policies,

although it is important to note that these sets are relative to observed provision across the sample and not to some theoretical benchmark. Mean country scores that fall below zero on both axes represent a 'low family support' approach to family policy (Ferrarini, 2006: 13; Engster and Olofsdotter Stensöta, 2011), while scores that are above zero one of the dual earner or general family support axes and below on the other signify, on average over the series, a 'dual earner' or 'general family support' policy set, respectively. Lastly, mean country scores that are above zero on both axes represent something of a 'contradictory' or 'pluralistic' configuration of family policy. Here, on average, countries provide a set of policies that support both dual earning and the family in its caring function, and thus to some extent present families with a 'choice' as to how they reconcile work and childcare responsibilities (Ferrarini, 2006: 13).

Figure **4.1** confirms a certain level of between-country variation in patterns of policy provision, at least on average over the series. All four policy quartiles are populated by at least two countries, although notably it is the low family support quartile that is – with ten constituent countries – by far the most populous. In other words, on average over the series, half of the twenty sample countries are below average providers of *both* dual earner and general family support policy. The remaining ten countries are fairly evenly distributed between the other three policy quartiles. On average over the period, four countries hold a dual earner set of policies, four a contradictory or pluralistic configuration, and two a general family support policy set. The latter is particularly notable, in that it suggests that few countries provide extensive general family support without also providing generous dual earner policies, although again only on average over the series.

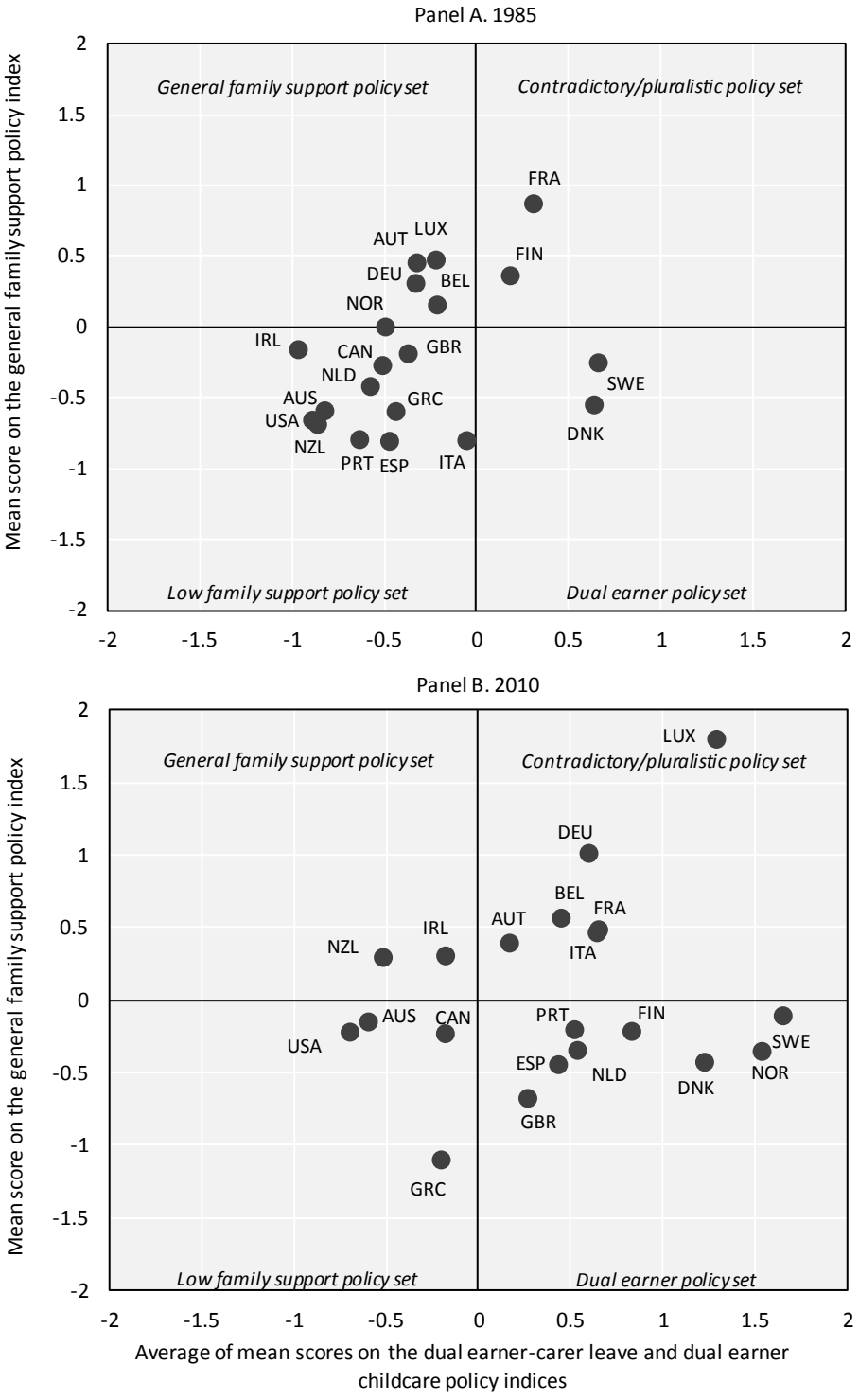
The placement of individual countries around figure **4.1** is fairly consistent with the usual distinctions made between groups of countries, albeit with certain deviations. Three of the four Scandinavian countries – Denmark, Sweden and, just, Norway – are placed within the dual earner policy quartile, which is as expected given that policies in these countries are usually found to be strongly supportive of female employment (Esping-Andersen, 1999; Korpi, 2000; Misra et al, 2006; Mischke, 2011; Korpi et al, 2013). Finland is the exception, falling as it does within the contradictory/pluralistic policy set. This is not an entirely novel finding – Mischke (2011), for example, finds that Finland is more similar in its policy configuration to Belgium and France than to the other Scandinavian countries – and is due mostly to Finland's comparatively strong support for familial care provided through its generous home care allowance.

The conservative European countries are slightly more diverse in their placement across figure **4.1**. Averaged over the series, Austria and Germany both display the expected general family support policy configuration – with scores above zero on the general family support index and below zero on the dual earner axis – while Belgium, France and Luxembourg all hold a more contradictory set of policies. In the case of the former two countries in particular, this contradictory approach to family policy is not altogether unexpected – as noted in chapter **2**, a number of authors suggest that France and Belgium deviate slightly from the rest of the conservative pack, especially in the extent to which they are generous providers of childcare services (Leitner, 2003; Misra et al, 2006; Mischke, 2011). Ireland, meanwhile, falls within the low family support policy quartile but is on the border of the general family support policy set. Again, this is not entirely unexpected. Several authors find that Ireland is fairly similar to the United Kingdom (Lewis, 1992; Leitner, 2003) and the other liberal-type countries (Esping-Andersen, 1999) in its policy orientation, while Korpi (2000) suggests it is something of a borderline case.

Finally, the placement of countries from the final two country groups – the Southern European group, and the liberal group – is almost entirely consistent with expectations. In both cases, countries are usually found to provide little in the way of either dual earner or general family support policy (Esping-Andersen, 1999; Korpi, 2000; Leitner, 2003; Misra et al, 2006; Engster and Olofsdotter Stensöta, 2011). Accordingly, almost all countries from these two clusters are found in the low family support policy quartile in the bottom left of figure **4.1**. The single and clear exception is Italy, which finds itself with a dual earner policy configuration mostly on account of fairly generous mother-specific earnings-related leave and father-specific leave provisions. Italy probably represents figure **4.1**'s largest and most unexpected departure from the usual country classifications. Its placement here does, however, derive some support from Ferrarini (2006), who also finds it a reasonably generous provider of dual earner support.

Notably, these familiar patterns of policy provision also remain evident at least to some extent across years, albeit with the general level and 'centre of gravity' of provision shifting over time. To illustrate, figure **4.2** (overleaf) recreates figure **4.1** but for configurations of dual earner and general family support policy at the start and end of the series in 1985 and 2010.

Figure 4.2. **Country family policy configurations, 1985 and 2010**
Country scores on the general family support policy index and the mean average ofcountry scores on the dual earner-carer leave and dual earner child care policy indices



Notes: for country abbreviations, see figure 4.1. For 1985, data for Germany refer to 1991.

Panel **A** in figure **4.2** shows that levels of family policy provision in 1985 were, by the standards of the entire series, generally low. Indeed, in 1985 only three of the twenty countries score over 0.5 on either of the two axes, with twelve scoring below the mean on

both. Yet, for the most part between-country differences in configurations in 1985 were largely similar – in relative terms at least – to those shown in figure **4.1** (pg. 125). The Scandinavian countries, for example, were with the exception of Norway generally the most generous providers of dual earner policy, while the conservative European countries (plus Finland) were the most generous providers of general family support. The liberal- and Southern European-type countries, meanwhile, were again generally the least generous providers of family policy overall. In other words, while most of the twenty sample countries were in 1985 comparatively ungenerous providers of family policy, it remains possible at least to some extent to identify the usual country clusters and between-country variations in groupings of policy provision.

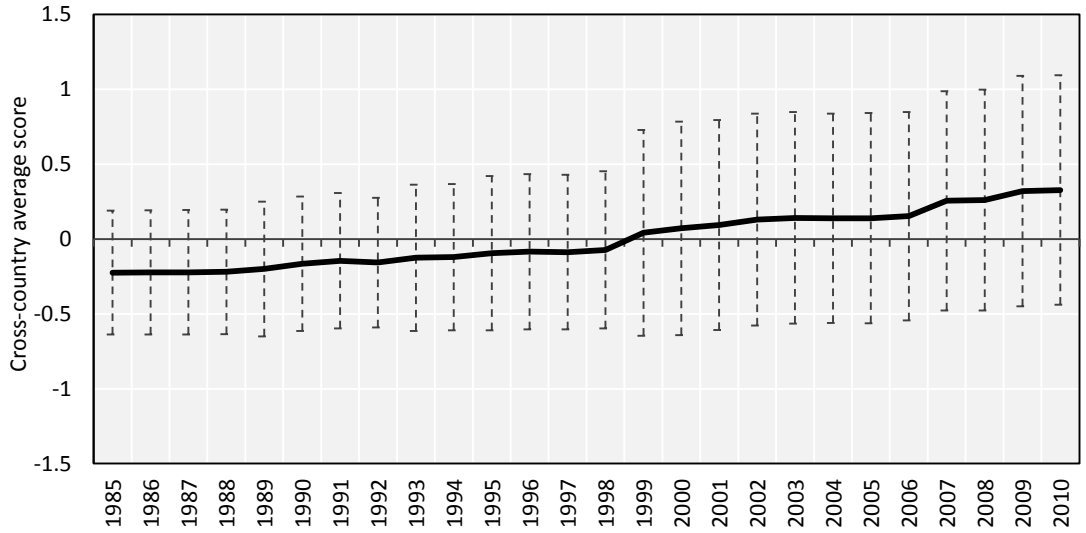
Provision of family policy in 2010 was across most countries generally far higher than in 1985 (panel **B** in figure **4.2**). Between the two panels, a majority of the twenty sample countries shift to the right – indicating at least some increase in the provision of one or both types of dual earner policy – while many also move upwards – suggesting fairly widespread increases in the provision of general family support policies – producing a general shift 'north-east' for most countries. Again though, the usual policy groups remain largely identifiable. All four Scandinavian countries remain among the most generous providers of dual earner policy and the least generous providers of general family support, while the conservative European countries continue to provide the highest level of general family support policy. Similarly, the liberal and Southern European-type countries generally remain the lowest providers overall even if, by 2010, many offer a set of policies that is comparatively generous relative to the standards set across the sample as a whole.

Broadly then, the measures of family policy used in this thesis produce familiar patterns of provision that are mostly similar to those in the existing comparative family policy literature, both when looking at average levels of provision over the course of the series and at specific configurations at the beginning and end of the sample. Yet, as figure **4.2** illustrates, *levels* of family policy provision are far from static over time – indeed, the initial suggestion from figure **4.2** is that the years between 1985 and 2010 may be characterised by a general expansion across countries in policy provision, a suggestion that is itself compatible with and to some extent mirrors the findings of Gauthier (2002), Ferrarini (2006) and Ferragina and Seeleib-Kaiser (2013). The following sections detail and describe these developments for each area of family policy individually, starting first with changes in the provision of dual earner-carer leave policies.

4.3. Dual earner-carer leave policy

On average across countries, the years following 1985 see a steady and sustained increase in the provision of dual earner-carer leave policies. Figure **4.3** plots the cross-country mean average score on the dual earner-carer leave policy index for all years between 1985 and 2010, along with error bars set at one standard deviation to reflect between-country variation in index scores in each year.

Figure 4.3. **Cross-country unweighted average score on the dual earner-carer leave policy index, 1985-2010**
With +/- one standard deviation error bars



The average index score rises over the series, from -0.22 in 1985 to just over 0.32 in 2010. Notably, much of this increase occurs over the latter half of the period. Change in the average index score stands at only 0.15 between 1985 and 1998, compared to 0.40 between 1998 and 2010 – in other words, growth in dual earner-carer leave policy provision is consistent across the period but seems to have accelerated in more recent years. Also notable, though, is that the standard deviation of index scores also increases over the series – indeed, the standard deviation almost doubles from an initial 0.41 in 1985 to 0.77 in 2010. Thus, although the general trend across the period is for increasing supply of dual earner-carer leave policy, there is some suggestion that cross-national differences in provision have also become more pronounced.

Table **4.2** summarises how dual earner-carer leave policies have developed across individual countries. It shows scores on both the dual earner-carer leave policy index and its three individual component indicators in 1985 and 2010, and change in each between the two snapshot time points. It also contains country group labels according to the

Table 4.2. **Summary of change in dual earner-carer leave policy**

Scores on the dual earner-carer leave policy index and its three component indicators in 1985 and 2010, with change between the two. Countries are ranked according to the size of change in the dual earner-carer leave policy index

		Dual earner-carer leave policy index			Mother-specific earnings-related job protected leave, in effective weeks			Father-specific job protected leave, in effective weeks			Gender-neutral earnings-related job protected parental leave, in effective weeks			General family policy country group
		Change 1985[a]-2010	1985[a]	2010	Change 1985[a]-2010	1985[a]	2010	Change 1985[a]-2010	1985[a]	2010	Change 1985[a]-2010	1985[a]	2010	
1	Luxembourg	1.73	0.01	1.74	0.00	16.00	16.00	17.24	0.40	17.64	0.00	0.00	0.00	Conservative European
2	Norway	1.50	-0.21	1.29	2.68	6.00	8.68	9.02	0.00	9.02	14.03	12.00	26.03	Scandinavian
3	Germany	1.38	-0.14	1.24	0.00	14.00	14.00	4.54	0.00	4.54	29.11	0.00	29.11	Conservative European
4	Portugal	1.32	-0.20	1.11	-3.22	12.90	9.68	11.54	0.00	11.54	10.71	0.00	10.71	Southern European
5	Sweden	0.83	0.36	1.19	6.21	0.00	6.21	6.01	1.80	7.81	-3.90	34.71	30.82	Scandinavian
6	Netherlands	0.82	-0.25	0.57	4.00	12.00	16.00	5.96	0.00	5.96	0.00	0.00	0.00	Conservative European
7	Italy	0.66	0.22	0.88	5.28	16.00	21.28	5.28	0.00	5.28	-5.16	7.80	2.64	Southern European
8	Canada	0.58	-0.49	0.09	-0.65	7.80	7.15	0.00	0.00	0.00	19.25	0.00	19.25	Liberal
9	Spain	0.57	-0.30	0.27	5.50	10.50	16.00	2.60	0.40	3.00	0.00	0.00	0.00	Southern European
10	Finland	0.45	0.49	0.95	0.78	13.33	14.12	4.85	0.00	4.85	-2.38	21.04	18.66	Scandinavian
11	Belgium	0.44	-0.24	0.20	0.40	11.13	11.53	4.14	0.60	4.74	0.00	0.00	0.00	Conservative European
12	Greece	0.32	-0.25	0.07	5.00	12.00	17.00	0.40	0.00	0.40	0.00	0.00	0.00	Southern European
13	United Kingdom	0.31	-0.48	-0.16	4.80	7.98	12.78	0.44	0.00	0.44	0.00	0.00	0.00	Liberal
14	New Zealand	0.24	-0.93	-0.69	0.00	0.00	0.00	0.00	0.00	0.00	7.62	0.00	7.62	Liberal
15	Ireland	0.12	-0.38	-0.26	2.09	9.80	11.89	0.00	0.00	0.00	0.00	0.00	0.00	Conservative European
16	Australia	0.00	-0.93	-0.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Liberal
17	Austria	0.00	-0.03	-0.03	0.00	16.00	16.00	0.00	0.00	0.00	0.00	0.00	0.00	Conservative European
18	United States	0.00	-0.93	-0.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Liberal
19	France	-0.05	0.08	0.03	-2.17	16.80	14.64	0.74	0.60	1.34	0.00	0.00	0.00	Conservative European
20	Denmark	-0.28	0.20	-0.08	-6.59	13.48	6.89	-0.62	1.28	0.66	4.76	7.49	12.25	Scandinavian
	Average	0.55	-0.22	0.33	1.21	9.79	10.99	3.61	0.25	3.86	3.70	4.15	7.85	

a. Germany, 1991 - 2010.

general family policy typology outlined earlier in table **4.1** (pg. 124) to facilitate comparison. Countries are ranked in descending order according to the degree of change on the dual earner-carer leave policy index.

Consistent with the trend in the cross-country average, most of the twenty sample countries see at least some increase in their scores on the dual earner-carer leave policy index over the series. Growth is particularly large in Luxembourg, Norway, Portugal and Germany, but also reasonable in a majority of the countries examined. Scores are unchanged in three countries, while France and Denmark alone see decreases in index scores between 1985 and 2010. Broadly, though, table **4.2** suggests the period between 1985 and 2010 can be characterised as one of widespread growth in the provision of leave policies the hold some form of dual earner or dual carer orientation.

It is noticeable from table **4.2** that these developments tend to cut across the usual country policy groups. The ranking of countries in table **4.2** generally shares little association with the general family policy country typology, although there is perhaps some clustering of the liberal countries towards the bottom of the table and Southern European countries are more likely to be ranked further towards the top. However, the Scandinavian and conservative European countries are distributed throughout the rankings, and the largest reforms in dual earner-carer leave policy come from a diverse set of countries.

That said, it is also apparent from table **4.2** that countries with very low initial scores on the policy index are also more likely to see little or no expansion in provision over subsequent years. This is illustrated best by Australia and the United States – both of whom provide no paid leave policies that can be classified as 'dual earner-carer' in either 1985 or at any other point over the series – but also evident in New Zealand and, to a lesser degree, the United Kingdom. This is not to say that there is a strict or linear divergence in scores on the policy index over the series[71]. Many of those countries with very high initial scores see only moderate increases (Finland, Italy and Sweden) or decreases (Denmark) over the series, while the biggest gains in dual earner-carer leave policy are observed in countries that held comparatively moderate scores in 1985 (Germany, Luxembourg, Norway and Portugal). However, it does provide some explanation for the increased dispersion of index scores touched on earlier – while most

[71] The Pearson's R correlation coefficient between scores on the index in 1985 and change in the index over the series is 0.23, indicating only a fairly weak positive linear association between initial provision and subsequent expansion.

countries have, to varying extents, expanded dual earner-carer leave policies over the series, those with very low initial provision have for whatever reason failed to introduce major reforms and as a result have drifted even further from the pack.

In terms of specific policies, table **4.2** shows that much of the growth in the dual earner-carer leave policy index has been driven by changes in paternity leaves or other weeks of leave reserved for the father. Eight countries introduce some form of father-specific leave at some point over the series, while five others extend existing father-specific provisions. Particularly notable is the increase in Luxembourg, where an individual entitlement to six months paid parental leave was added in 1999 to the existing two-day birth related leave. The new leave is paid through an extremely generous flat-rate benefit – so that, by 2010, Luxembourg held the most generous package of effective weeks of father-specific leave – and is sufficient to drive entirely the large increase in Luxembourg's score on the overall policy index.

Several countries also increase provision of mother-specific earnings-related leave over the series, although growth in terms of effective weeks is generally slightly smaller than for father-specific leave. The largest increase in mother-specific earnings-related leave is in Sweden, where since 1995 both parents have been reserved a period of earnings-related parental leave. Most of the other increases range somewhere between two and five effective weeks. Only four countries reduce effective weeks of mother-specific earnings-related leave over the series. The most notable decrease is in Denmark, where effective weeks fall because the ceiling on the earnings-related maternity leave benefit fails to keep pace with wage growth. However, as Ferragina et al (2013) note, this may be at least partly explained by a shift towards employer responsibility for the payment of parental leave benefits (2013: 799).

Fewer countries introduce or expand effective weeks of gender-neutral earnings-related parental leave, although changes are generally large in those countries that do alter this aspect of dual earner-carer leave. Particularly striking is Germany, where in 2007 the former flat-rate parental leave scheme was replaced by a relatively generous earnings-related parental leave programme, complete with bonus weeks for take-up by the father. Canada, Norway and Portugal also introduce or extend reasonably generous earnings-related parental leave schemes over the series. Again, only a few countries – Finland, Italy and Sweden – reduce effective weeks of gender-neutral parental leave between 1985 and 2010. In the latter two, this is mostly the result of rearrangements that see each parent

reserved – or, in Italy, effectively reserved[72] – a period of the parental leave. In Finland, the decrease can be explained by a gradual reduction in the actual proportion of wages replaced by the earnings-related benefit across the leave.

In summary then, developments in dual earner-carer leave policies as they are measured here generally match the trends described by Gauthier (2002), Ferrarini (2006) and Ferragina et al (2013). The data outlined in this section show a general and widespread expansion of dual earner-carer leaves in the years following 1985, with the pace of development increasing if anything in more recent years. Yet, cross-national differences in provision also continue to grow, mostly because a few countries – particularly Australia, New Zealand and the United States – persist in providing little or nothing in the way of dual earner-carer leave policy. Thus, the general pattern is one of increases in both provision and variation. Nonetheless, by 2010, most countries provided a more extensive set of dual earner or dual carer leave policies than they had done in 1985.

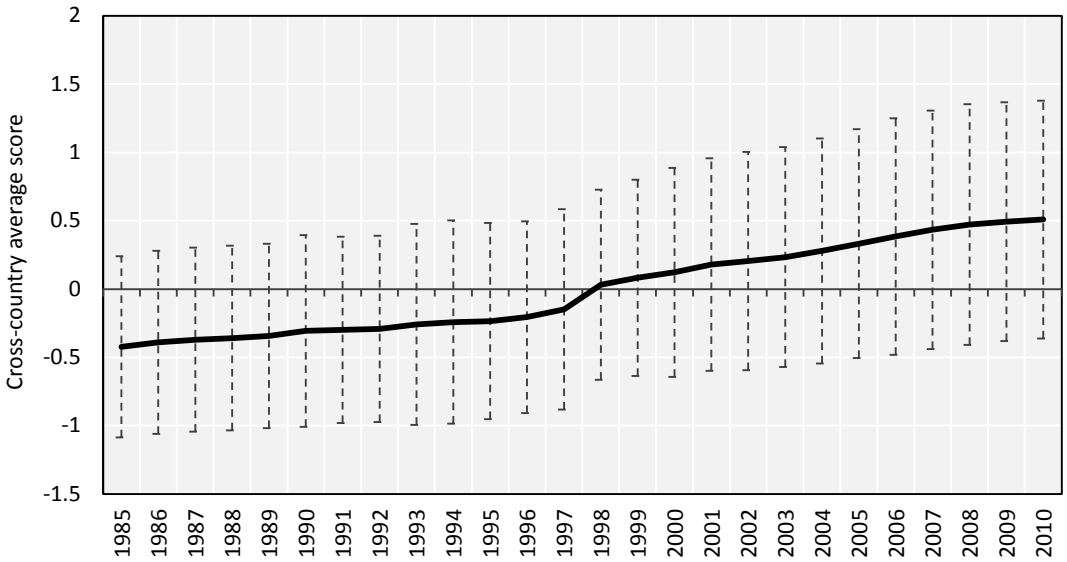
4.4. Dual earner childcare policy

Dual earner childcare policies also undergo considerable expansion over the years between 1985 and 2010. Figure **4.4** plots the cross-country mean average score on the dual earner childcare policy index for all years between 1985 and 2010, alongside error bars set at one standard deviation to represent between-country variation in the index in each year.

The cross-country mean average index score again increases over the series, from -0.42 in 1985 to 0.51 in 2010. Growth is a little more consistent than in dual earner-carer leave policy – change in the mean dual earner childcare index score was 0.46 between 1985 and 1998, and 0.48 between 1998 and 2010 – suggesting that the expansion of childcare policy was fairly steady and sustained over the period. Notably, the standard deviation of index scores also again increases across the series. However, in this case the change is only fairly small – the standard deviation stood at 0.67 in 1985, and 0.87 in 2010. Thus, the general trend is again for increase and expansion with some slight growth in between-country variation in provision.

[72] Technically, since 2000, Italian parents both hold an individual entitlement to six months paid parental leave. However, the leave is limited to ten months per family (Knijn and Saraceno, 2010: 448; OECD, 2013c). This effectively means that four months are reserved for each parent, with the remaining two classified here as gender-neutral or sharable leave.

Figure 4.4. **Cross-country unweighted average score on the dual earner childcare policy index, 1985-2010**
With +/- one standard deviation error bars.



This pattern of increase is seen across all twenty of the sample countries, to varying degrees of course. Table **4.3** (overleaf) summarises change in dual earner childcare policy for each individual country. It shows change in the policy index and in each of the three component indicators between 1985 and 2010. Again, it also contains country group labels, and countries are ranked in descending order according to the degree of change on the dual earner childcare policy index.

All countries see at least some increase in scores on the dual earner childcare policy index between 1985 and 2010. Growth in provision is exceptionally large in Norway and substantial in Denmark, Ireland and the Netherlands, but many others also see considerable growth in index scores over the series. Change in Greece and Canada is only marginal, but no county sees a decrease in their score on the index between the two ends of the series. Thus, as far as the data suggest, expansions in dual earner childcare policy appear fairly widespread across the sample countries over the years 1985-2010.

Much of the growth in index scores is driven by expansions in public expenditure on childcare services. Norway leads the way, with expenditure growing from just over $1,500 (2005 USD PPP) per child under six in 1985 to over $7,500 per child in 2009. Increases are also considerable in the United Kingdom – with an increase in expenditure of just under $5,000 per child under six between 1985 and 2009 – and in France, at just over $4,500. All but two countries see expenditure per child under six grow by at least $1,000 over the series.

Table 4.3. **Summary of change in dual earner childcare policy**

Scores on the dual earner childcare policy index and its three component indicators in 1985 and 2010, with change between the two. Countries are ranked according to the size of change in the dual earner childcare policy index.

		Dual earner childcare policy index			Proportion of children under three years of age in publicly supported childcare (%)			Proportion of children between three and six years of age in publicly run pre-primary education or in primary school (%)			Public expenditure on childcare services per child aged under six (US$ 1000's, 2005 prices 2005 PPPs)			General family policy country group
		Change 1985[a]-2010	1985[a]	2010	Change 1985-2010[b]	1985[b]	2010[b]	Change 1985-2010[c]	1985[c]	2010[c]	Change 1985-2010[d]	1985[d]	2010[d]	
1	Norway	2.57	-0.79	1.78	42.00	12.00	54.00	37.22	27.47	64.69	6.03	1.63	7.66	Scandinavian
2	Ireland	1.46	-1.57	-0.11	1.00	1.00	2.00	49.42	11.83	61.25	3.33	0.07	3.40	Conservative European
3	Denmark	1.46	1.07	2.53	23.67	42.00	65.67	20.05	58.67	78.72	3.66	5.48	9.14	Scandinavian
4	Netherlands	1.41	-0.91	0.50	4.00	2.00	6.00	39.66	35.70	75.36	3.73	1.30	5.03	Conservative European
5	Luxembourg	1.30	-0.46	0.84	17.22	1.00	18.22	22.07	63.33	85.40	3.22	0.92	4.13	Conservative European
6	Spain	1.24	-0.66	0.59	14.60	2.00	16.60	27.22	58.53	85.75	2.61	0.05	2.65	Southern European
7	Sweden	1.16	0.95	2.11	14.67	32.00	46.67	15.67	63.39	79.06	3.50	5.69	9.19	Scandinavian
8	Portugal	1.00	-1.08	-0.08	15.00	4.00	19.00	23.00	34.63	57.63	1.43	0.00	1.44	Southern European
9	Austria	0.99	-0.63	0.36	14.10	3.00	17.10	16.72	51.67	68.38	2.32	0.95	3.28	Conservative European
10	United Kingdom	0.96	-0.27	0.69	1.87	2.00	3.87	9.75	78.88	88.63	4.95	0.00	4.95	Liberal
11	Belgium	0.89	-0.19	0.69	10.37	20.00	30.37	6.12	58.98	65.10	3.60	0.33	3.94	Conservative European
12	Finland	0.84	-0.14	0.71	-4.33	32.00	27.67	28.35	32.62	60.97	2.69	2.30	4.98	Scandinavian
13	France	0.74	0.53	1.27	2.00	20.00	22.00	-0.09	94.49	94.40	4.67	0.63	5.29	Conservative European
14	Italy	0.73	-0.34	0.40	7.70	5.00	12.70	7.89	69.17	77.06	2.74	0.35	3.09	Southern European
15	Germany	0.47	-0.53	-0.05	6.35	10.32	16.67	1.48	44.68	46.16	2.02	1.43	3.45	Conservative European
16	Australia	0.45	-0.73	-0.27	6.30	2.00	8.30	-2.60	52.53	49.93	2.62	0.14	2.77	Liberal
17	New Zealand	0.45	-0.81	-0.36	0.00	1.00	1.00	-1.51	50.79	49.28	3.39	0.03	3.41	Liberal
18	United States	0.39	-0.86	-0.47	5.00	1.00	6.00	1.22	49.26	50.48	1.68	0.01	1.70	Liberal
19	Greece	0.15	-0.63	-0.48	5.00	2.00	7.00	-0.56	58.60	58.05	0.25	0.26	0.51	Southern European
20	Canada	0.08	-0.54	-0.46	0.00	5.00	5.00	4.15	54.56	58.71	0.02	0.88	0.90	Liberal
	Average	0.94	-0.43	0.51	9.33	9.97	19.29	15.26	52.49	67.75	2.92	1.12	4.05	

a. Germany, 1991 - 2010.

b. Austria, 1994-2009; Belgium, 1985-2006; Canada, 1985-1998; France, 1985-2002; Germany, 1991-2010; Greece, 1985-2004; Ireland, 1985-2003; Italy, 1985-2008; the Netherlands, 1985-2004; New Zealand, 2000-2010; Portugal, 1985-2004; Spain, 1993-2004; the United Stated, 1985-2000.

c. Australia, 2001-2010; Denmark, 1992-2010, Finland, 1992-2010; Germany: 1993 - 2010; Greece, 1992-2010; Luxembourg, 1986-2010; New Zealand, 2004-2010; Portugal, 1988-2010; Sweden, 1992-2010.

d. Austria, 1985-2009; Belgium, 1985-2009; Canada, 1998-2010; Denmark, 1985-2009; Finland, 1985-2009; France, 1985-2009; Germany, 1991-2010; Greece, 1990-2010; Italy, 1985-2009; Luxembourg, 1985-2009; the Netherlands, 1985-2009; Norway, 1985-2009; Portugal, 1985-2009; Spain, 1985-2009; Sweden, 1985-2009, the United Kingdom, 1985-2009, the United Stated, 1991-2010.

But increases are also relatively widespread in the other two dual earner childcare indicators. As noted earlier in chapter **3**, these two indicators are not perfect and should be treated with some degree of caution. The measure of service coverage for children under three suffers from a high rate of missing data and, for certain countries, what data does exist may not fully reflect public provisions. The indicator of provision for older children, meanwhile, captures enrolment in publicly owned or run pre-primary institutions or primary school only and not children in publicly supported pre-primary education. Nonetheless, both indicate some degree of growth in public provision across most countries over the series.

For children under three, expansions in the proportion enrolled in public or publicly supported care are particularly substantial in Norway and Denmark, with both achieving an enrolment rate of well over 50% by 2010. There are also indications of sizable expansions in Austria, Luxembourg, Spain, Portugal, Sweden and, to a lesser extent, Belgium. Notably, only Finland sees a decrease in the proportion of children under-three in publicly supported childcare over the series. This can be explained by a steady decline in demand for formal childcare following the introduction of the home care allowance in 1985, rather than a reduction in public supply itself (Randall, 2000: 358).

Several countries also see large increases in the proportion of three-to-six year olds in public pre-primary education or primary school. In certain cases – namely, Ireland and the Netherlands[73] – these increases are at least partly the result of a decrease in the age at which children enter compulsory schooling. In others – such as Denmark, Finland, Luxembourg, Portugal and Spain – it is a consequence of an increase in the number of children enrolled in pre-primary institutions recognised as 'public' by the OECD data. Only three countries see a decrease in the proportion of three-to-six year olds in public pre-primary education or primary school. In Greece, the change is marginal. Decreases are larger in Australia and New Zealand, although importantly these changes are for years between 2001-2010 and 2004-2010 only, due to missing data.

Notably, there is again no real strong association between changes in dual earner childcare policy and country policy groups. Table **4.3** shows that growth in the policy index is strong in three of the four Scandinavian countries - with both Denmark and Sweden further expanding an already generous set of childcare policies, and with Norway

[73] In the Netherlands there is effective rather than formal lowering of school entry age, as since 2008 primary schools have been obliged to offer full-day childcare to children aged four and over (Knijn and Saraceno, 2010: 451).

shifting from a comparatively low level of provision in 1985 to become the third most generous provider by 2010 – but is far less dramatic in Finland. Increases are also generally small in the liberal-type countries, but nonetheless all see at least some expansion over the series and the United Kingdom in particular shifts to become a reasonably high spender on childcare by 2010. The Southern European and conservative European countries, meanwhile, are distributed throughout the table. Similar to dual earner-carer leave policy then, there is only limited evidence to suggest that certain types of countries see stronger or weaker growth in the provision of dual earner childcare policy over the period.

To sum up, the broad picture for dual earner childcare policy is, at least as far as the data indicate, one of sustained and widespread growth in provision across most of the 20 sample countries. There appears little in the way of either convergence or divergence in policy, while growth in both expenditure and provision come from a range of countries. Indeed, the general inference is that, across the years 1985-2010, there has been a fairly common shift towards more generous provision of public childcare policies, albeit very much to varying extents across countries.

4.5. General family support policy

Broadly speaking, trends and developments in general family support policy are a little more complex and less coherent than those seen in the previous two sections for the two areas of dual earner family policy. Figure **4.5** again plots the cross-country mean average score on the general family support index for the years 1985-2010, together with error bars set at one standard deviation of the index score for each year.

Similar to the two dual earner policy indices, average provision of general family support increases between 1985 and 2010. However, the change is only small – the cross-country mean average score on the index was -0.23 in 1985, and 0.05 in 2010 – and the average index score fluctuates over the series. The index increases steadily to a peak of 0.14 in 2002, before falling away slightly across the remainder of the 2000s. Notably, the standard deviation of index scores also exhibits a similar pattern – it increases from 0.50 in 1985 to a high of 0.87 in 1999, before decreasing steadily to 0.64 in 2010. Both of these trends are returned to and expanded upon later in this section, but for now the broad picture appears one of growth and slight subsequent decline in both the average provision of, and cross-national variation in, general family support policy.

Figure 4.5. **Cross-country unweighted average score on the general family support policy index, 1985-2010**
With +/- one standard deviation error bars.

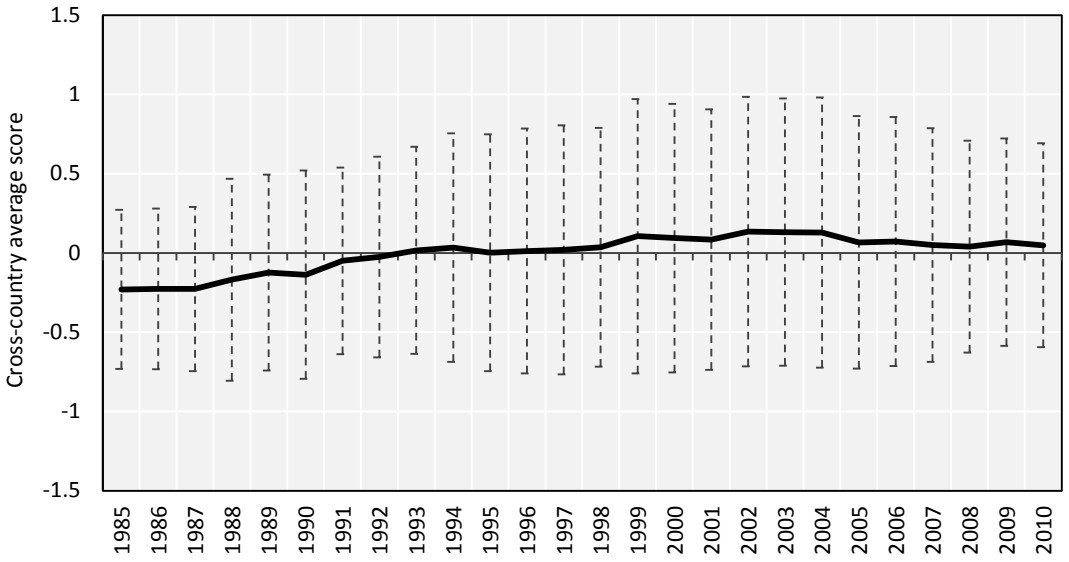


Table **4.4** (overleaf) summarises how general family support policies have developed across the individual countries. It shows changes in both scores on the policy index and in provision of the three individual component indicators in each country between 1985 and 2010. Once more, countries are ranked in descending order according to the degree of change on the general family support policy index.

Fourteen of the twenty sample countries expand general family support policy between 1985 and 2010. Increases are particularly large in Luxembourg and Italy, but also considerable in New Zealand, Germany and Portugal and to a lesser extent in Australia, Ireland and the United States. A sizeable minority of six countries, however, decrease provision between the two ends of the series. These decreases are particularly noteworthy, as together they represent the most widespread shift *away* from generous provision observed across the three areas of family policy.

Notably, several of those countries that decrease provision between 1985 and 2010 were initially relatively generous providers of general family support. This is particularly the case in Finland and France, but also to a lesser degree Austria. All three started the period with index scores well above the series mean, but to varying extents all three shift away from generous provision over the series. Moreover, a number of countries with at least moderate growth – namely, Australia, Italy, New Zealand, Portugal and the United States – were comparatively very low providers of general family support policy in 1985. Taking

Table 4.4. **Summary of change in general family support policy**

Scores on the general family support policy index and its three component indicators in 1985 and 2010, with change between the two. Countries are ranked according to the size of change in the general family support policy index.

		General family support policy index			Child benefit per month for two children, as a proportion of average earnings (%)			Tax support for the family[c]			Flat-rate job protected parental leave and childcare leave available to mothers, in effective weeks			General family policy country group
		Change 1985[a]-2010	1985[a]	2010	Change 1985[a]-2010	1985[a]	2010	Change 1985-2010[b]	1985[b]	2010[b]	Change 1985[a]-2010	1985[a]	2010	
1	Luxembourg	1.33	0.48	1.81	3.50	7.57	11.07	-4.50	14.56	10.07	49.46	0.00	49.46	Conservative European
2	Italy	1.27	-0.80	0.47	11.64	2.85	14.48	4.59	2.20	6.80	0.00	0.00	0.00	Southern European
3	New Zealand	0.98	-0.68	0.30	15.00	3.50	18.50	-3.04	3.04	0.00	0.00	0.00	0.00	Liberal
4	Germany	0.70	0.31	1.02	5.38	4.53	9.91	9.69	9.71	19.40	-15.52	15.52	0.00	Conservative European
5	Portugal	0.59	-0.79	-0.20	1.06	4.11	5.17	6.99	0.90	7.89	0.00	0.00	0.00	Southern European
6	Ireland	0.47	-0.15	0.31	7.81	3.20	11.01	-2.22	10.67	8.45	0.00	0.00	0.00	Conservative European
7	Australia	0.44	-0.59	-0.14	8.64	3.28	11.91	-3.45	4.62	1.17	0.00	0.00	0.00	Liberal
8	United States	0.44	-0.65	-0.21	0.00	0.00	0.00	6.05	7.33	13.39	0.00	0.00	0.00	Liberal
9	Belgium	0.41	0.16	0.57	0.26	10.35	10.61	3.94	7.10	11.04	3.75	0.00	3.75	Conservative European
10	Spain	0.36	-0.80	-0.44	1.99	0.52	2.51	2.79	4.71	7.51	0.00	0.00	0.00	Southern European
11	Sweden	0.15	-0.25	-0.10	-1.56	9.24	7.69	-1.73	1.73	0.00	14.30	2.51	16.81	Scandinavian
12	Denmark	0.12	-0.55	-0.42	2.76	2.90	5.66	-1.36	5.62	4.26	0.00	0.00	0.00	Scandinavian
13	Netherlands	0.07	-0.41	-0.34	-2.20	6.95	4.75	0.89	2.92	3.81	6.76	0.00	6.76	Conservative European
14	Canada	0.04	-0.27	-0.22	2.86	3.21	6.07	-2.59	9.11	6.52	0.00	0.00	0.00	Liberal
15	Austria	-0.06	0.46	0.40	-2.97	13.81	10.84	-0.40	2.63	2.23	7.49	12.43	19.92	Conservative European
16	Norway	-0.35	0.01	-0.35	-2.94	7.92	4.98	-5.14	7.64	2.50	9.26	0.00	9.26	Scandinavian
17	France	-0.38	0.88	0.49	-5.83	11.54	5.71	-1.75	7.60	5.84	7.59	21.07	28.66	Conservative European
18	United Kingdom	-0.49	-0.18	-0.67	-3.55	8.51	4.96	-2.79	4.39	1.60	0.00	0.00	0.00	Liberal
19	Greece	-0.50	-0.59	-1.10	-3.09	4.52	1.43	-3.51	3.17	-0.34	0.00	0.00	0.00	Southern European
20	Finland	-0.58	0.37	-0.21	0.71	6.11	6.82	-5.95	5.95	0.00	-7.33	22.77	15.45	Scandinavian
	Average	0.25	-0.20	0.05	1.97	5.73	7.70	-0.17	5.78	5.61	3.79	3.72	7.50	

a. Germany, 1991 - 2010.

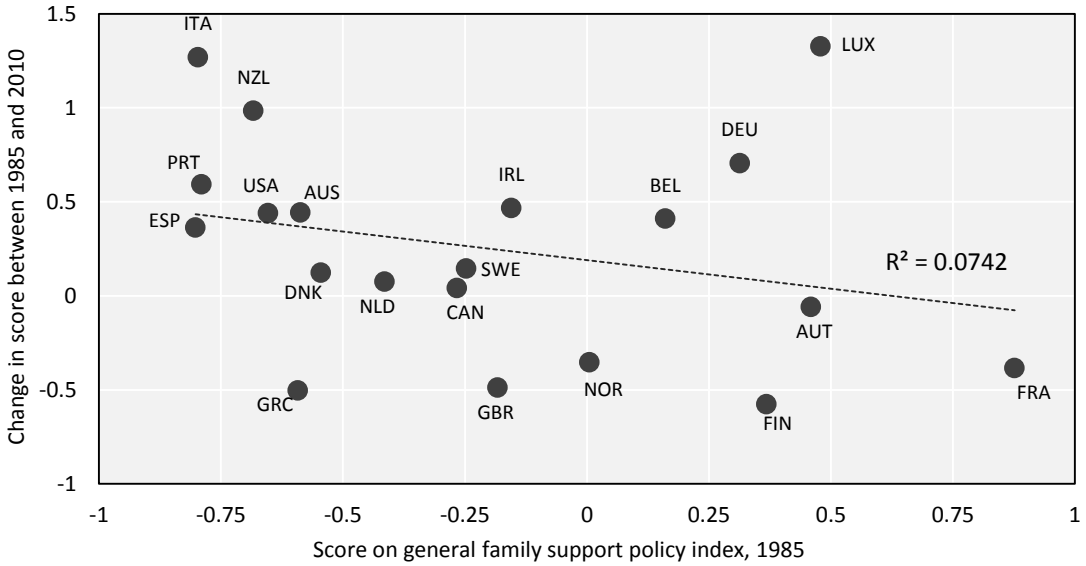
b. Australia, 1990-2010; Germany, 1991-2010.

c. Difference between the post-tax (income tax and social security contributions) earnings of a single earner couple with two children on 100% of the average wage and the post-tax earnings for single individual with no children, also on 100% of average earnings, as a proportion of the average wage (%)

the two together, there appears at least some tendency over the years examined for provision to shift towards some more moderate form of middle ground.

Indeed, it is possible to say that there has been some degree of convergence in general family support policy over the series. Figure **4.6** plots changes in scores on the general family support policy index between 1985 and 2010 against initial scores on the index in 1985, along with a linear fit line. Broadly, countries with low initial scores appear more likely to see large positive changes in the index over the series, while those with moderate-to-high initial provision are more likely to see a decrease in index scores between 1985 and 2010. This is not to say that there has been strict convergence[74] – Luxembourg, for example, extends and expands what was already a relatively generous set of family support policies. However, there appears to have been some degree of 'catch up' amongst many of those countries that started the series as low providers and, vice versa, cutbacks in provision in several initially high providers. That said, even in 2010 the highest levels of provision remain in the conservative European countries – particularly Luxembourg, but also Germany, Belgium and France – that are traditionally the most generous providers of general family support.

Figure 4.6. **Scores on the general family support policy index in 1985 and change in scores between 1985 and 2010**



Notes: AUS = Australia, AUT = Austria, BEL = Belgium, CAN = Canada, DNK = Denmark, FIN = Finland, FRA = France, DEU = Germany, GRC = Greece, IRL = Ireland, ITA = Italy, LUX = Luxembourg, NZL = New Zealand, NLD = the Netherlands, NOR = Norway, PRT = Portugal, ESP = Spain, GBR = United Kingdom, USA = United States. * = p<0.05 ** = p<0.01 *** = p<0.001. ^ = p<0.1. For Germany, change in scores 1991-2010.

[74] Indeed, as noted earlier, the standard deviation of index scores does actually increase slightly over the series. However, this is heavily influenced by the extreme change in Luxembourg. When removed, the standard deviation falls slightly from 0.47 in 1985 to 0.42 in 2010.

These developments in the overall general family support policy index are produced by a complex mixture of changes in the three individual component indicators. Patterns of change in child benefit perhaps come closest to matching those in the overall index. Table **4.4** (pg. 140) shows that a majority of the twenty sample countries see a least some increase in the generosity of child benefit payments between 1985 and 2010, with the increases in Italy and New Zealand particularly substantial. Indeed, in New Zealand the expansion is sufficient to drive its large increase in the overall index despite a decrease and no change in the remaining two component indicators. However, several countries towards the bottom of table do reduce the value of child benefit payments over the series. France, in particular, shifts from being the second most generous provider in 1985 to a relatively ungenerous position by 2010.

A majority of countries reduce tax support for the nuclear family over the series. Thirteen countries see at least some decrease in the difference between the post-tax income of a single-earner two-child couple and single childless individual, with the decreases in Finland, Luxembourg and Norway particularly substantial. Notably, of all the nine main indicators of family policy, this is the only measure to see a cross-country average decrease in provision between 1985 and 2010 – in other words, this is the only area of family policy in which there appears to have been a general cutback in generosity over the series. That said, several countries do expand tax support for the family between 1985 and 2010. Increases are largest in Germany, Portugal and the United States. The latter is particularly notable, given that the United States is amongst the most ungenerous of providers on all eight other indicators of family policy.

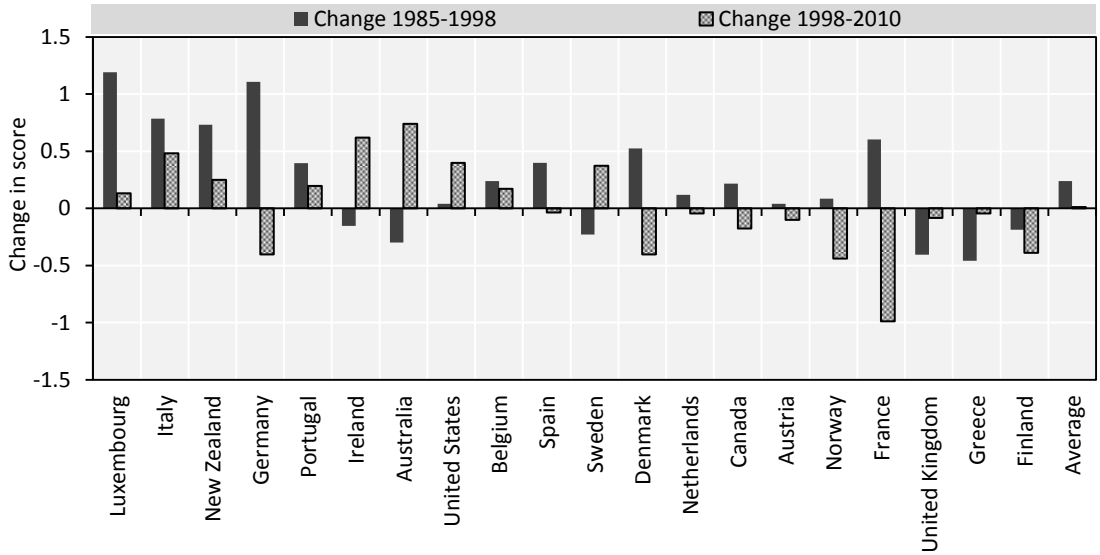
Only ten countries introduce or adjust their provision of 'general family support' leave programmes between 1985 and 2010[75]. Both Finland and Germany see decreases in the number effective weeks offered. This is due in the former to a decline in the proportion of wages replaced by the home care leave benefit, and in the latter to the replacement in 2007 of the flat-rate parental leave scheme with an earnings-related system. The remaining seven countries introduce or increase effective weeks of flat-rate parental leave or childcare leave. Changes are large in Norway and Sweden, due in both to the introduction of home care leaves in 1998 and 2008[76], respectively. By far the most substantial increase, however, is in Luxembourg. This is the result of two reforms – first,

[75] Only nine of these are visible in table **4.4**. The tenth is Denmark, which introduced and later abolished a childcare leave in 1992 and 2001, respectively (see table **C.29** in appendix **C** (pg. 370)).
[76] Sweden first introduced a home care allowance in 1994. However, this was abolished after only one year and was not reintroduced until 2008 (OECD, 2013c)

the introduction in 1988 of a two-year childcare leave paid at a relatively low flat rate, and second the launch in 1999 of a six month flat-rate mother-specific parental leave that was paid, initially at least, at close to 100% of average female manufacturing wages. These two leaves are the major driver behind Luxembourg's comparatively large increase in overall general family support policy.

Finally, before summarising it is worth briefly returning to the observation made earlier that average provision of general family support appears to expand and then retract over the series. Figure **4.7** plots changes in individual country scores on the general family support policy index over the first and second halves of the series, that is, between 1985 and 1998, and 1998 and 2010. Countries are ranked in descending order according to the degree of change over the series.

Figure 4.7. **Change in scores on the general family support index between 1985 and 1998 and between 1998 and 2010**
Countries ranked by overall change on the general family support index



Between 1985 and 1998, fifteen countries post at least some increase in the general family support policy index. Changes are largest in Luxembourg, Germany, Italy and New Zealand, but the general trend across countries appears mostly one of expansion. Notably, the picture changes somewhat in the years following 1998 – here, eleven countries see a decrease in their scores on the policy index. Particularly interesting are the cuts to provision in France, Germany and Denmark – as well as, to a lesser extent, Canada, Spain, the Netherlands and Norway – as these countries had all previously increased general family support over the first half of the series. The cross-country average change in the

general family support policy index for 1998-2010 does remain very slightly positive at 0.01[77]. Nonetheless, there is perhaps some evidence to suggest the beginnings of a broad shift away from generous provision of general family support in more recent years, albeit following earlier general growth between 1985 and the late 1990s.

Developments in general family support policy then, may be best described as 'mixed'. As was also found by Gauthier (2002) and Ferrarini (2006), most countries do increase provision of general family support policy between the two ends of the series. However, there is also evidence to indicate that several countries are moving away from extensive general family support, particularly through reductions in tax subsidies to the nuclear family, and especially in more recent years. Notably, several of those countries that cut back on provision were, at the outset, amongst the most generous providers, while conversely countries with low initial levels of general family support were more likely to see large increases in provision over the series. Thus, perhaps the most noteworthy finding from this section is that there appears to have been some degree of convergence towards more moderate levels of general family support across most of the 20 sample countries examined. Nevertheless, and as stated earlier, the most generous providers in 2010 remained, generally, the conservative European states.

4.6. Overview and discussion

The dominant trend emerging from the previous three sections is one of general expansion. While a minority of countries cut back on general family support and a couple decrease provision of dual earner-carer leave, the broad pattern is for growth and increase across the three areas of family policy – in other words, between 1985 and 2010, the twenty sample countries have become more generous providers of family policy in general. This pattern of increase at least partly echoes the findings of Gauthier (2002), Ferrarini (2006) and Ferragina et al (2013). There as here, results suggest a shift towards increased generosity and widespread growth in the provision of family policy in general.

This broad trend is notable in itself. As both Gauthier (2002) and Ferragina et al (2013) note, these developments mean that over the past few decades family policy has across countries become a major feature of national social policy despite pressures on welfare budgets and wider welfare retrenchment (Korpi and Palme, 2003; Starke, 2006; Ferragina et al, 2013). However, one result of this fairly common pattern is that developments

[77] The fall in the cross-country average index score observed earlier was between 2002 and 2010.

between countries are for the most part distinguishable only in the magnitude or the extent of growth in provision, rather than in the direction or type of change. This is shown by table **4.5**, which summarises change by country on each of the three family policy indices.

Table 4.5. **Summary of change on the three family policy indices**
By general policy country group

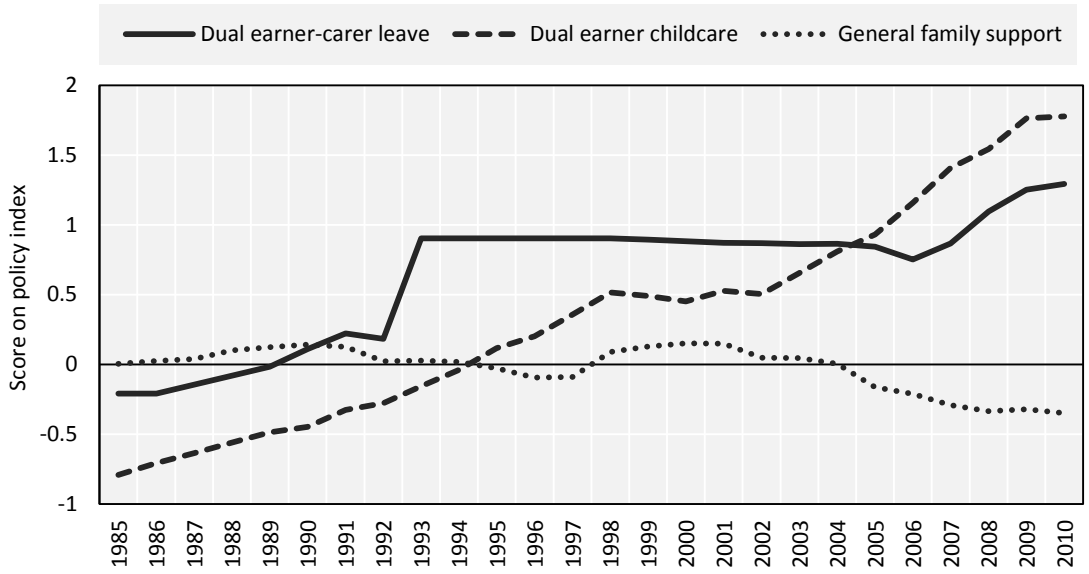
	Change on index, 1985-2010[a]		
	Dual earner-carer leave policy index	Dual earner childcare policy index	General family support policy index
Denmark	-0.28	1.46	0.12
Finland	0.45	0.84	-0.58
Norway	1.50	2.57	-0.35
Sweden	0.83	1.16	0.15
Belgium	0.44	0.89	0.41
France	-0.05	0.74	-0.38
Austria	0.00	0.99	-0.06
Germany	1.38	0.47	0.70
Ireland	0.12	1.46	0.47
Luxembourg	1.73	1.30	1.33
Netherlands	0.82	1.41	0.07
Greece	0.32	0.15	-0.50
Italy	0.66	0.73	1.27
Portugal	1.32	1.00	0.59
Spain	0.57	1.24	0.36
Australia	0.00	0.45	0.44
Canada	0.58	0.08	0.04
New Zealand	0.24	0.45	0.98
United Kingdom	0.31	0.96	-0.49
United States	0.00	0.39	0.44
Average	0.55	0.94	0.25

Note : The bars symbolize the magnitude of change on each index between 1985 and 2010. Lighter grey bars show positive change, darker grey negative change.

a. Germany, 1991 - 2010.

A small group of countries have, over the series, shifted towards a 'dual earner' set of family policies through increases in provision of dual earner leave and childcare policies and a reduction in the generosity of general family support. In other words, to varying extents, these countries have reconfigured family policy so as to provide a set of policies that, by 2010, are more encouraging of female labour market activity and employment than was the case in 1985. This group includes Finland, France, Greece, the United Kingdom and, to a very limited extent, Austria. Norway, however, provides perhaps the clearest example, as illustrated by figure **4.8** (overleaf).

Figure 4.8. **Scores for Norway on the three family policy indices, 1985-2010**



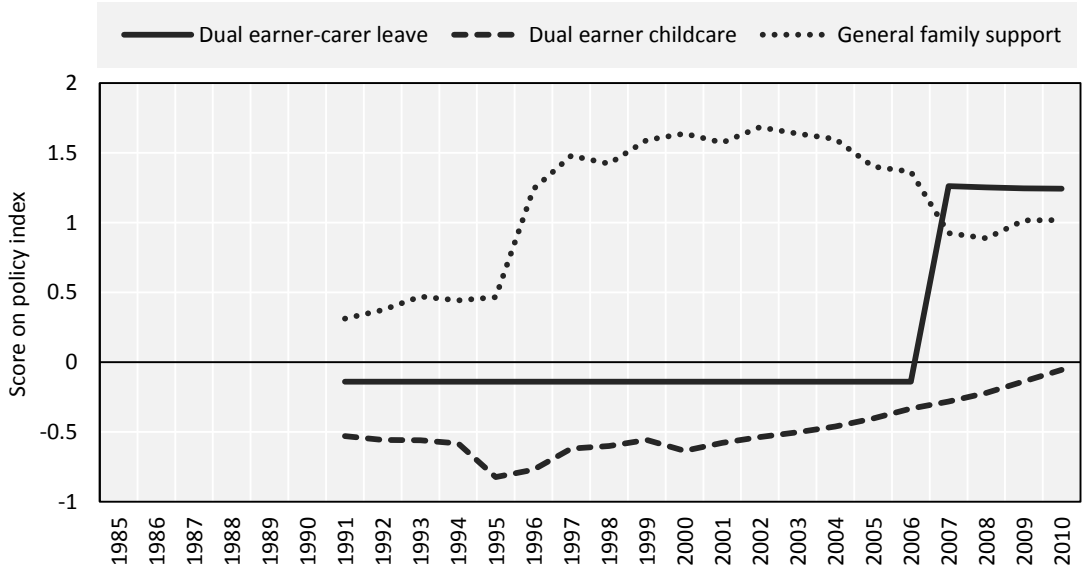
At the start of the series, Norway was a relatively low provider across all three aspects of family policy, particularly in comparison to the other three Scandinavian counties. However, a series of expansions in dual earner-carer leave policy – including several extensions to earnings-related parental leave in the late 1980's and early 1990's, and the introduction of a father quota in 1993 and subsequent extensions in the late 2000's – and large sustained increases in childcare spending see Norway become the second most generous provider of dual earner policy by 2010. At the same time, decreases in financial support for the family – particularly through reductions in family tax subsidies and decreases in the real value of the home care allowance in the 2000's – shift Norway towards a comparatively low level of general family support provision. The result is that, by 2010, Norway was far more 'dual earner' in its orientation than it was in 1985.

However, most of the twenty sample states have increased provision of *both* dual earner and general family support policy over the period, and as result have moved towards a set of policies that are more contradictory or pluralistic in their orientation. In other words, the majority countries have become more generous providers of policy all-round. In practical terms, such a shift means that in most cases policies in 2010 were both more supportive of female employment and more encouraging of female homemaking than in 1985. This of course produces conflicting incentives, although from a more optimistic perspective these developments could be seen as providing mothers with greater choice or improved options regarding work and family responsibilities (Ferrarini, 2006: 13).

Of course, the magnitude of the shift again varies across and between countries. For some, such as the Netherlands and Sweden, increases in dual earner provision are large and growth in general family support policy comparatively small, while in a few countries – particularly Australia and the United States – all changes are marginal. Others, however, see considerable expansion across the board. This is particularly the case in Luxembourg, where increases in all three policy indices are substantial. In fact, by 2010 Luxembourg holds a set of policies that are at once amongst the most generous in terms of support for both dual earning parents *and* the nuclear family unit.

That said, and as covered in the previous section, in more recent years several countries that had previously expanded general family support policy have begun to cut back on the generosity of provision. Combined with continued increases in dual earner policies, this implies some form of shift towards a dual earner configuration over the latter years of the series. This pattern of development is observed, to varying degrees, in Canada, Denmark, the Netherlands and Spain. Perhaps the clearest example, however, comes from Germany, as is shown in figure **4.9**.

Figure 4.9. **Scores for Germany on the three family policy indices, 1991-2010**



For much of the series, Germany is the archetypal 'general family support' state. Throughout the 1990s and early 2000s, Germany provides a long, low paid flat rate parental leave scheme and generous tax subsidies for single earner families, while childcare provision is low and dual earner-carer leave policy consists only of a moderate earnings-related maternity leave. From around the mid-2000s, however, Germany family policy undergoes something of a co-ordinated transformation. The generosity of child

benefit payments and tax support fall slightly, while the replacement of the former flat rate leave with an earnings-related system in 2007 drives a sharp and relatively simultaneous increase in dual earner-carer leave provision. This is not a complete shift to a dual earner model. Indeed, while Germany has abandoned much of the 'breadwinner' system, there remain several elements of German family policy that are likely to reinforce female caregiving (Lewis et al, 2008; Ostner, 2010) – as an example, even by 2010 tax subsidies for single earner families remain generous. Nonetheless, German reforms towards the end of the series create a policy system that, in theory at least, is far more encouraging of female labour market activity than was the case for much of the period examined.

As touched on at several points over the previous three sections, it is noticeable that none of these patterns of development operate along the usual distinctions made between country policy groups. Indeed, an examination of table **4.5** (pg. 145) suggests there is little general association at all between developments in family policy and the typical country policy clusters. The liberal group does average the smallest level of change across the three policy indices, while the Scandinavian countries tend to see at least reasonable growth in dual earner childcare policy and low or negative growth in general family support policy. However, there are exceptions and intra-cluster variations in all groups, and broadly very little to suggest that any of the four clusters have their own specific pattern of change, or that certain types or sets of countries have developed in certain ways.

This is not to say that countries depart from their usual policy groups – indeed, even by the end of the series in 2010 it remains possible to distinguish some degree of clustering in patterns of policy provision. The results shown in tables **4.2** (pg. 131) and **4.3** (pg. 136), for example, indicate that the Scandinavian countries remain generally the most generous providers of dual earner policy, while those in table **4.4** (pg. 140) show that the provision of general family support continues to be strongest in the conservative European countries. Results from across the tables also show that the lowest levels of overall provision remain in the liberal or southern European-type states, although by the standards of the entire series several are, by 2010, relatively generous providers of dual earner policy.

However, even if country policy clusters remain at least partially visible in the cross-section, the important point to take away here is that *changes* in family policy cut across and vary within the various country groups. In other words, between 1985 and 2010, each

policy cluster fails to develop in manner that is internally homogeneous and externally distinct. As a result, there is little evidence of any divergence in policy provision between different groups of countries, as was so strongly found by both Gauthier (2002) and Ferrarini (2006). Indeed, this chapter provides little evidence of any kind of general divergence at all, be it between or within policy clusters. Admittedly, section **4.3** does show some increase in cross-national variation in dual earner-carer leave policy. However, section **4.5** finds a certain level of *convergence* in the provision of general family support, and more widely there is little indication that different countries have moved along radically different policy paths. Rather, the general pattern of change found in this chapter – between the two ends of the series at least – is one of fairly common increase across the three areas of family policy.

In summary then, this chapter finds a considerable level of change in the provision of family policy over the years between 1985 and 2010. The broad trend is for growth and expansion across aspects of policy and over most of the twenty sample countries. Degrees of change of course vary between states. However, with the partial exception of those few countries that cut back on general family support, most countries were more generous providers of general family policy in 2010 than was the case in 1985. Theories of family policy suggest that such changes in provision should have some visible impact on gender differences in employment outcomes. As discussed in detail earlier in chapter **2**, changes in provision are expected to influence equality in economic activity – albeit in a somewhat ambiguous manner in those countries that have expanded both dual earner and general family support policy – and may also impact upon gender job segregation and women's relative career attainment. The following chapters examine how the changes and developments outlined in this chapter relate to observed levels of gender equality in employment, starting first with gender differences in labour market activity.

Chapter 5. Do changes in family policy influence gender differences in economic activity? Descriptive and time-series cross-section regression analyses of links between changes in family policy provision and gender equality in labour market activity

At the centre of theories of family policy and the comparative family policy literature is the argument that family policies are likely to have some influence over the relative extent to which men and women are active in the labour market (e.g. Korpi, 2000, Mandel and Semyonov, 2006; Korpi, 2010; Thévenon, 2013; see chapter **2** for a detailed discussion). Providing dual earner-carer leave policies, for example, should boost relative female participation through improved incentives to build a career prior to pregnancy, increased employment continuity following childbirth, and possibly also through the encouragement of male participation in domestic labour, depending on the exact policy under discussion (Korpi, 2000; Ferrarini, 2006; Korpi, 2010; Akgunduz and Plantenga, 2013; Korpi et al, 2013). Likewise, public childcare policies should facilitate female market activity through a reduction in the female care burden and – to the extent that public childcare costs are lower than the market rate – through decreases in the effective childcare tax on second earning (Korpi, 2000; Blau et al, 2001; Blau and Currie, 2003; Misra et al, 2011). Conversely, general family support-type policies may constrain equal participation. Child benefit payments and extensive tax support for the nuclear family are expected to discourage second earning through income substitution (Jaumotte, 2003; Blau et al, 2001), while long, flat-rate parental and childcare leaves may reinforce gendered divisions of labour (Korpi, 2000; Ferrarini, 2006; Korpi, 2010; Korpi et al, 2013).

Existing empirical evidence on links between family policy and gender equality in labour market activity is broadly supportive of these theoretical expectations. Simplifying slightly, cross-sectional comparative studies show that female employment or activity tends to be higher in countries with more generous packages of dual earner leave and childcare provision (Gornick et al, 1998; Pettit and Hook, 2005, Mischke, 2011; Misra et al, 2011; Korpi et al, 2013) and fairly low in countries that provide extensive general family support policy (O'Connor, 1996; Gornick, 1999a; Van der Lippe and Van Dijk, 2002:230; Korpi et al, 2013). Employment rates are inconsistent in those 'low family support' countries that provide little in the way of either type of policy - the Southern European states, with their emphasis on familial care, tend to see the lowest rates of female employment, while women's activity is generally moderate-to-high in the liberal, market-

oriented states (O'Connor, 1996; Gornick, 1999a; Korpi, 2000; Van der Lippe and Van Dijk, 2002:230; Korpi et al, 2013). Generally though, cross-country patterns of female participation mostly correspond to between-country differences in family policy provision (see chapter **2.3** for more detail).

The emerging 'over time' comparative literature on associations between *changes* in family policy and gender equality in labour market activity also generally lends support to the theory. Several studies (Winegarden and Bracy, 1995; Ruhm, 1998; Akgunduz and Plantenga, 2012; Thévenon and Solaz, 2013) find that increases in the length of maternity and parental leave programmes encourage female employment or labour market participation – at least for adjustments up to a certain length – and promote female working hours (Akgunduz and Plantenga, 2012; Thévenon and Solaz, 2013). Similarly, Jaumotte (2003) and Thévenon (2013) both find a positive association between changes in public childcare expenditure and female activity. Others produce at least some evidence to suggest that changes in general family support policy can constrain female participation (Jaumotte, 2003; Nieuwenhuis et al, 2012), although Ferrarini (2006) finds such a relation falls just short of statistical significance. Broadly, though, the theorised effects of both dual earner and general family support policy on labour market activity find at least some empirical support whether studies look at differences between countries or at within-country changes in provision over time (see chapter **2.3** for more detail).

This chapter examines whether associations between changes in family policy and gender equality in labour market activity hold across the twenty sample countries and years 1985-2010. More specifically, it uses both descriptive and regression techniques to explore how the various developments in policy outlined in the previous chapter relate to changes in gender differences in both labour market participation and working hours. In doing so, it focuses predominately on providing answers to this thesis' first research question – that is, how do within-country changes in family policy relate to within-country changes in gender equality in labour market activity?

The chapter is organised as follows. The next section – **5.1** – offers a brief review of the data, methods and techniques used in the chapter. As these methods were outlined in some depth earlier in chapter **3**, this section provides a short reminder only. Section **5.2** gives a brief overview of cross-sectional or between-country relations between indicators of family policy and measures of gender equality in both labour participation and working hours. This provides a background for the rest of the chapter, and to some degree also allows for the validation of the chosen labour market indicators. Sections **5.3** and **5.4** form

the main focus of the chapter, in that each contains descriptive and fixed effects regression analyses for one of the two measures used to capture gender equality in labour market activity. The gender gap in the labour force participation rate is covered in **5.3**, and the gap in usual weekly working hours in **5.4**. Finally, **5.5** brings together and discusses results, and concludes the chapter.

5.1. Data and methods

This chapter examines relations through the analysis of country-level measures of both family policy and gender equality in labour market activity. Family policies are captured principally through the nine main indicators described earlier in chapter **3.2**. For the most part these nine policy indicators are used as individual measures in their own right, although their three corresponding policy indices are also used at certain points in the more descriptive parts of the chapter. Because splitting leave entitlements into several indicators of various types may disguise underlying relations with the total length of general leave available to mothers, this chapter also uses at various points the alternative measures of leave policy outlined earlier in chapter **3.2**. Gender differences in labour market activity are measured by the gender gap in the labour force participation rate, and the gender gap in usual weekly working hours (see chapter **3.3** for details). The former offers a measure of headcount activity and reflects the relative extent to which men and women participate in the labour market at any level of engagement. The latter captures the depth or extent of male and female economic activity once they have managed to find employment. The gap in participation rates is measured for two age groups - all men and women aged 25-54, and those of 'prime' childbearing age between 25-34. Data on working hours are unfortunately available for 25-54 year olds only.

Analysis is conducted primarily through fixed effects multiple linear regression. However, as discussed in depth earlier in chapter **3.4**, regression analysis does suffer from drawbacks, particularly with regard to the transparency of results. In an effort to overcome at least some of these limitations, this chapter complements its regression analyses with fairly detailed accounts of trends and changes in each measure of gender equality in economic activity, as well as descriptions of any immediate links with developments in policy provision. More specifically, it uses relatively simple methods – including tables, charts and bivariate measures of linear association – to outline patterns of change and highlight any direct relations prior to the presentation of regression results for the labour market indicator under consideration. Of course, descriptive methods also have their limits. In this case, the descriptive analyses require some simplification of the

data and provide no statistical control for the influence of alternative factors. Nevertheless, they provide a valuable initial exploration of possible relations and produce a more transparent empirical background for the subsequent regression analyses.

Details of the regression models themselves were outlined in some detail earlier in chapter **3.4**. It is however worth providing a brief refresher. Each of the indicators of labour market activity are examined though their own set of fixed effects regression models. In each set the 'gender gap' measure is the main dependent variable. However, to help illustrate the mechanism behind any emergent relations with gender equality, each and every specification is also replicated with the respective individual male and female indicators used as dependent variables. The key independent variables across models are the main nine individual indicators of family policy, although for reasons touched on above certain specifications do use the alternative measures of leave policy. Each model also includes several control variables to account for alternative influences on labour market activity. Justifications for and details of these controls were given earlier in chapter **3.4**.

In all cases models use two-way fixed effects – that is, both country and time fixed effects – to account for unobserved unit and period heterogeneity. The use of country fixed effects also has the upshot of producing estimates based only on within-country variation in the dependent and independent variables – in other words, estimated relations are based entirely on changes in the included variables with all between-country variation removed entirely. All models also include country-specific time trends to de-trend the variables and reduce the likelihood of spurious relations. Lastly, all specifications use cluster robust standard errors (CRSEs) to correct for non-spherical errors. As the tests shown in appendix **B.4** (pp. 330-332) suggest that contemporaneous correlation is not generally a problem, one-way CRSEs are used to correct for panel heteroscedasticity and serial correlation only (see appendix **B.4** for further discussion of these technical details).

It is worth noting again that this method is similar to that used in much of the existing 'over time' comparative family policy literature – as touched on in chapter **3**, all ten 'over time' studies reviewed earlier in chapter **2.3** use some form of regression analysis and seven use fixed effects regression. This similarity aids the comparability of findings. However, as also noted in chapter **3**, the exact technical specification used here is slightly 'harder' or more conservative than that employed in much of the existing literature, particularly with regard to the use of CRSEs. The use of this 'harder' specification protects against false positives and does in certain instances impact on results – although,

generally, not broader inferences – as discussed in more detail later on in section **5.5**.

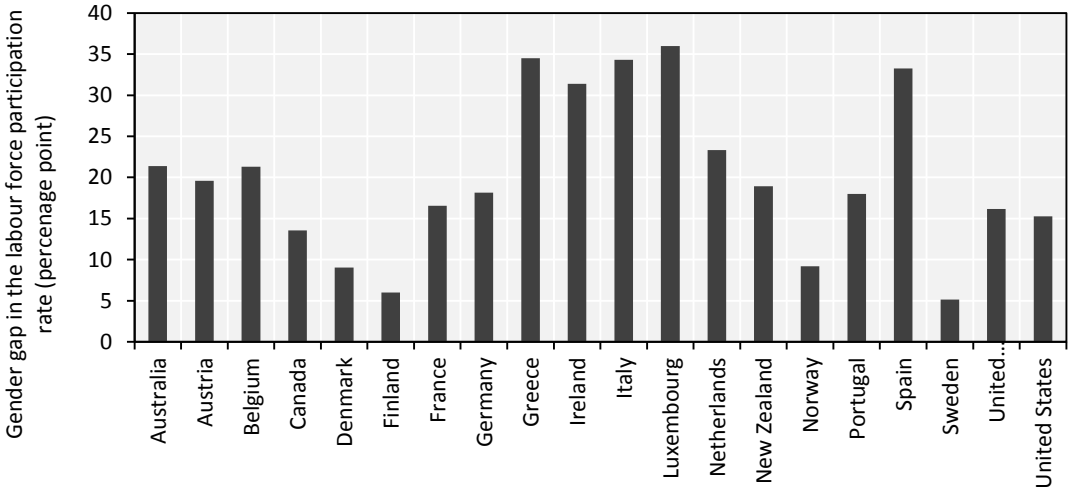
5.2. Cross-sectional associations

Cross-country associations between family policy provision and women's relative economic activity are of course fairly well established (e.g. O'Connor, 1996; Gornick et al, 1998; Pettit and Hook, 2005, Korpi, 2000; Mischke, 2011; Misra et al, 2012; Korpi et al, 2013; see chapter **2.3**). However, as way of starting the chapter and to provide background, it is worth examining briefly how this thesis' measures of family policy relate to gender differences in labour market activity in the cross-section before moving on to focus on change. The following uses tables, charts and measures of bivariate linear associations – namely, Pearson's R correlation – to outline cross-sectional relations in the year 1998, a mid-point in the series, starting first with links between policy provision and the gender gap in the labour force participation rate (25-54 year olds).

Gender gap in the labour force participation rate

As is well known, gender differences in labour participation differ considerably across countries. Figure **5.1** shows the gender gap in the labour force participation rate (25-54 year olds), by country and for the year 1998.

Figure 5.1. **Gender gap in the labour force participation rate (25-54 year olds)**
1998



The figure shows substantial variation in the gender gap in 1998. Differences between male and female participation rates range from as high as around 35 percentage points in Greece and Luxembourg to as low as 5 percentage points in Sweden, with most countries

registering a gender gap of somewhere between 10 and 30 percentage points. Gaps are generally largest in the Southern European countries – plus Luxembourg – and are smallest in the four Scandinavia states, while the liberal and particularly conservative-type countries tend to perform more moderately. This pattern of cross-country variation is familiar of course, but differences are striking nonetheless.

Table **5.1** shows how these variations relate to cross-country differences in the provision of family policy. It contains a series of Pearson's R correlation coefficients between the three policy indices and nine individual indicators of family policy, and the two measures of gender differences in labour market activity used in this chapter, with all data for 1998[78]. Correlations with the gender gap in the labour force participation rate (25-54 year olds) are shown in column **A**, while those for the gender gap in usual weekly working hours – discussed in the next subsection – are in column **B**.

Associations between family policy provision and the gender gap in the labour force participation rate are mostly but not fully in-line with expectations. Column **A** shows that the gender gap is negatively correlated with both dual earner policy indices or, put differently, that gender differences in market participation are smaller in countries that provide more extensive sets of dual earner policy. This is as expected, particularly given that the countries with the smallest observed gender gaps – the four Scandinavian states – were also found in chapter **4** to be amongst the most generous providers of dual earner policy. That said, the correlation with the dual earner-carer leave policy index is only weak, mostly on account of inconsistent relations between the gender gap and the three individual dual earner-carer leave component indicators – while both father-specific leave and gender-neutral earnings-related parental leave share the expected negative relation with gender differences in labour participation, the association for mother-specific earnings-related leave is positive and large. Nonetheless, the broader inference remains that the provision of dual earner policy is associated with decreased gender differences in labour participation.

[78] Relations do differ slightly if different years are used. 1998 is chosen here as it is a mid-point in the overall series. Unfortunately there is not enough space to present or discuss cross-sectional correlations for other years.

Table 5.1. **Correlations between measures of family policy and indicators of gender equality in labour market activity, 1998**

	Pearson's R correlation coefficients	
	A Gender gap in the labour force participation rate (25-54 year olds)	**B** Gender gap in usual weekly working hours (25-54 year olds)[a]
Dual earner-carer leave policy index	-0.20	-0.63 **
Mother-specific earnings-related leave, in effective weeks	0.47 *	-0.44 ^
Father-specific leave, in effective weeks	-0.43 ^	-0.37
Gender-neutral earnings-related parental leave, in effective weeks	-0.57 **	-0.34
Dual earner childcare policy index	-0.42 ^	-0.37
Proportion of children under three years of age in publicly supported child care	-0.62 **	-0.47 *
Proportion of children between three and six years of age in publicly run pre-primary education or in primary school	0.19	-0.06
Public expenditure on childcare services per child aged under six	-0.50 *	-0.28
General family support policy index	0.02	-0.13
Child benefit per month for two chlldren, as a proportion of average earnings	-0.06	-0.14
Tax subsidy for the family	0.16	0.07
Flat-rate parental leave and childcare leave available to mothers, in effective weeks	-0.06	-0.28
	20	18

Note: * = p<0.05 ** = p<0.01 *** = p<0.001. ^ = p<0.1

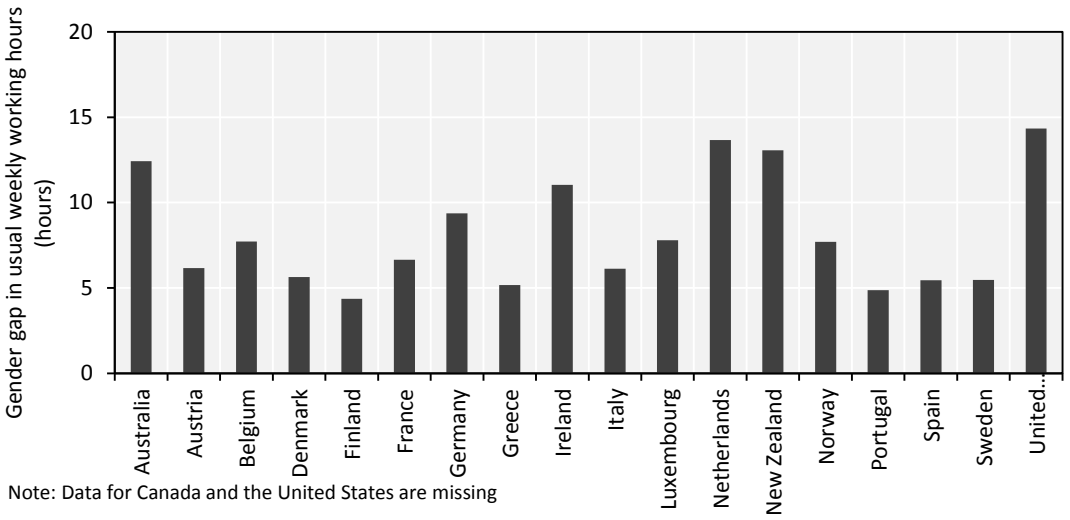
a. Canada and the United States are missing

Cross-sectional associations between the gender gap and general family support policy are, however, less consistent with expectations. More specifically, column **A** suggests that the provision of general family support is generally unrelated to gender differences in labour participation. There is a weak positive correlation between the gender gap and tax support for the nuclear family, but no association between the gap and either the generosity of child benefit transfers or the length of flat-rate parental and childcare leave. This is of course inconsistent with existing studies, where results suggest that gender differences in participation rates tend to be higher in countries that are more generous providers of general family support-type policies (e.g. Korpi, 2000; Mischke, 2011; Korpi et al, 2013). It is though driven in large part by the exceptionally large gender gaps in the Southern European countries, which as noted in chapter **4** tend to be very low providers of general family support policy.

Gender gap in usual weekly working hours

Similar to the gender gap in labour participation, gender differences in working hours show considerable variation across countries. Figure **5.2** shows the gender gap in average usual weekly working hours (25-54 year olds) for each of the twenty sample countries in 1998.

Figure 5.2**. Gender gap in usual weekly working hours (25-54 year olds)**
1998



Note: Data for Canada and the United States are missing

The gender gap in weekly working hours ranges from as high as around 14 hours per week in the Netherlands and the United Kingdom to just over 4 in Finland, with the gap in most countries somewhere between 5 and 10 hours per week. Notably, in terms of working hours it is the liberal-type states that tend to be the most unequal, mostly on account of relatively large gender differences in the likelihood of part-time employment (OECD, 2013a). Gender gaps are generally smaller in the Scandinavian states and particularly in the Southern European countries, where despite large gender differences in participation most employed women tend to work full-time (OECD, 2013a).

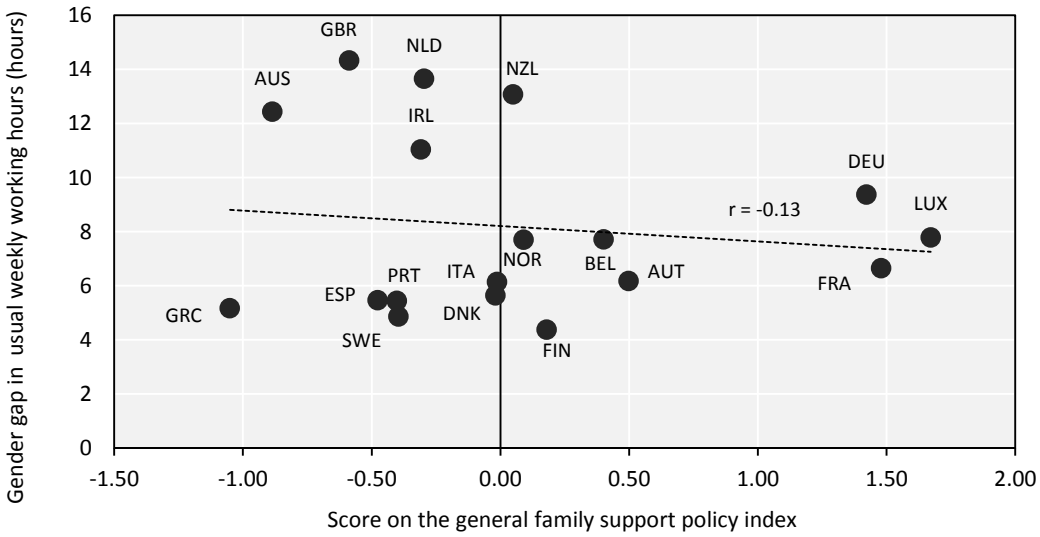
Column **B** in table **5.1** (pg. 157) shows how these variations in gender differences in working hours correlate with cross-national differences in family policy. Generally, cross-sectional associations here tell a fairly similar story to those outlined above for the headcount participation rate.

Both dual earner policy indices are again negatively correlated with the gender gap, implying that gender differences in working hours are smaller where the provision of dual earner policy is higher. Moreover, with the exception of childcare provision for children aged three-to-six, associations are negative and at least moderate in strength for all

individual indicators within the two dual earner policy areas. The general inference, then, is that in 1998 male and female working hours were more equal in countries that were more generous providers of dual earner policy.

Again, though, associations with general family support are at least partly inconsistent with expectations. In this case, the correlation coefficient on the general family support policy index is actually negative, if fairly weak. At first glance at least, this implies that countries with more extensive general family support policies tend to see, at least to some degree, *smaller* gender differences working hours. However, figure **5.3** – which plots scores on the general family support policy index against the gender gap in weekly working hours for 1998 – suggests that any real association is at least a little more complicated.

Figure 5.3. **The general family support policy index and the gender gap in usual weekly working hours**
1998, with fit line



Note: * = p<0.05 ** = p<0.01 *** = p<0.001. ^ = p<0.1. See figure **4.1** for abbreviations

The negative association between the general family support policy index and the gender gap in working hours is driven largely by a cluster of five countries – mostly, the liberal-type countries – with low provision and very high gender differences in weekly working hours. The relation amongst the remaining thirteen countries is actually strong and positive (r = 0.58), with the three most generous providers of general family support policy – Luxembourg, France and Germany – all holding gender gaps of at least moderate size. There is no good reason to exclude the cluster of five countries from the cross-sectional relation, but the pattern amongst the remaining thirteen countries means that any suggestion that general family support provision can *promote* equality in working

hours may be just little premature. Rather – just as for the headcount participation rate discussed above – the safest inference here is that general family support provision is generally unrelated to gender differences in working hours, in the cross-section at least.

Summary

Taking the two sets of associations together, cross-sectional links between family policy provision and this thesis' measures of gender differences in labour market activity are partly but not fully consistent with both the theory and existing empirical findings. Associations with dual earner policy fit well with expectations – broadly, in 1998 at least, male and female patterns of economic activity are more equal in countries that are more generous providers of dual earner leave and childcare policies. However, links with general family support provision do not match existing findings. The evidence here suggests that gender differences in economic activity share no real cross-sectional association with levels of general family support– again, in 1998 at least – and there certainly is no indication here that general family support policies lead to *inflated* inequalities in labour market activity. It is against this partially familiar background that the following two sections explore relations between changes in policy and gender equality in labour market activity.

5.3. Gender gap in the labour force participation rate

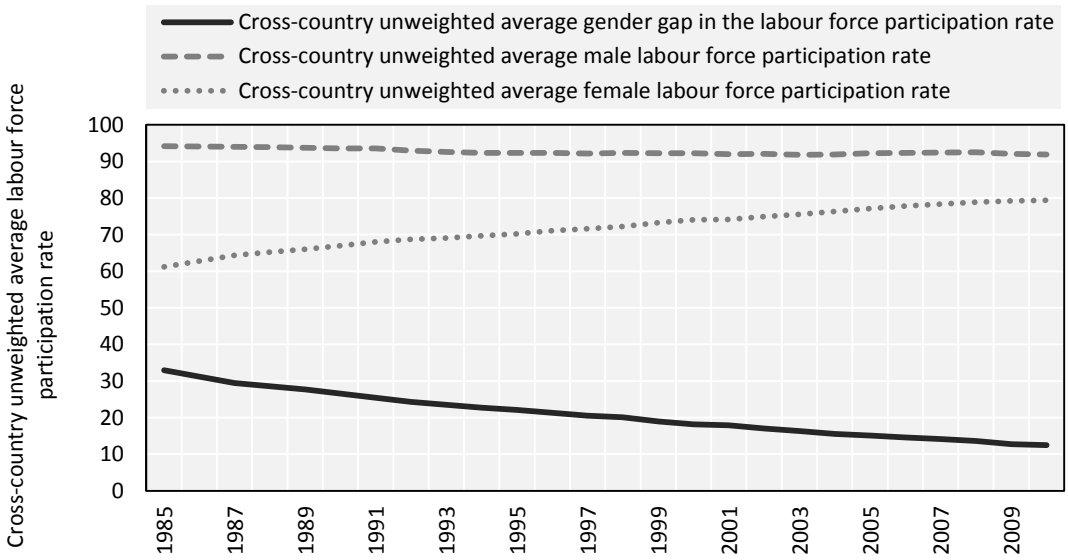
Closing gender differences in labour participation is central to the attainment of gender equality in employment generally. Disproportionate inactivity amongst women carries its own '*economic risks and psychic costs for women*' (Pettit and Hook, 2009: 19), but also contributes to inequalities in market attainment by reducing female experience and skills and indeed to wider gender inequalities by strengthening gender norms and reinforcing female financial dependence (Young et al, 1994; Pettit and Hook, 2009: 19). Accordingly, links between family policy and gender differences in labour participation have received much attention in comparative family policy research, and indeed form the primary focus of much of the emerging 'over time' comparative family policy literature (see chapter **2.3** for a detailed review). This section adds to this literature by examining how changes in this thesis' measures of family policy relate to changes in the gender gap in the labour force participation rate. It begins with a description of trends and developments in the gender gap and an overview of simple relations with changes in policy provision, before moving on to present the results from fixed effects regression models. It should be noted that because space is limited, the former concentrates on the gap in participation rates

amongst 25-54 year olds only. The regression analyses, however, cover gender differences amongst both 25-54 year olds and the more specific 25-34 year old age group.

Description of trends and changes in the gender gap in the labour force participation rate (25-54 year olds), and links with changes in family policy

On average across countries, the years following 1985 see a sharp and sustained shift towards gender equality in headcount participation. Figure **5.4** plots the cross-country unweighted average gender gap in the labour force participation rate (25-54 year olds) for the twenty sample countries over the years 1985-2010, alongside the unweighted average male and female participation rates.

Figure 5.4. **Cross-country unweighted average gender gap in the labour force participation rate (25-54 year olds), 1985-2010**
With cross-country unweighted average male and female participation rates



The average difference between the male and female rates falls dramatically over the series, from just under 33 percentage points in 1985 to just over 12.5 percentage points in 2010. For the most part, this decrease can be attributed to gains in female activity, rather than a reduction in the equivalent male rate. On average across the twenty countries covered, the male participation rate decreases only very slightly from 94.2% at the start of the series to 91.9% at the end. Female activity rates, in contrast, experience steady growth. In 1985 the cross-country average stood at just under 61.2%. By 2010, this had increased to 79.4%.

Such decreases in the gender gap are observed across all of the twenty sample countries,

albeit to varying degrees of course. Table **5.2** ranks countries in ascending order by the degree of change in the gender gap in the labour force participation rate between 1985 and 2010. To illustrate any crude links with changes in policy provision, it also summarises change on the indicators of family policy over the equivalent period and contains descriptive statistics and measures of linear association.

Shifts towards equal participation are most pronounced in Spain, Ireland, the Netherlands and Luxembourg – in all four, the gender gap falls by over 30 percentage points across the series. A majority of countries see more moderate but still considerable reductions in gender differences in labour participation. Only Denmark, Finland and Sweden show little or no movement towards equality – these three are the only countries to see a decrease in the gender gap of less than ten percentage points, with the changes in Finland and Sweden only nominal. Generally, though, the pattern is for considerable gains in equality in labour participation across most of the countries examined.

These widespread decreases in gender differences are broadly in-line with expectations, given the general increase in dual earner policy provision observed in chapter **4**. Put differently, consistent with the theory, almost all of the sample countries couple an increase in dual earner policy provision with a decrease in gender differences in labour participation over the years 1985-2010. That said, both theory and existing evidence would also suggest that the degree of growth in equality should at least roughly correspond to the magnitude of change in policy or, in other words, that countries with larger changes in policy should see larger gains in equality. The correlation coefficients shown at the bottom of table **5.2** – which capture linear associations between the *size* of changes in policy and in the gender gap – suggest that this may not strictly be the case.

Changes in the gender gap in the labour force participation rate are negatively correlated with changes in both dual earner policy indices, indicating that, to some degree, countries with larger expansions in dual earner policy also tend to be those with larger decreases in the gender gap. However, in both cases relations are surprisingly weak and inconsistent. Several countries – Ireland, Spain, and Belgium, for example – combine large gains in equality with only small increases in dual earner-carer leave provision. A number of others twin large increases in one or both of the dual earner policy indices with only moderate or small reductions in the gender gap – particularly Norway, but also Germany, Denmark and Sweden. The general inference with regard to dual earner policy, then, is that a large expansion in dual earner provision is not a necessary or sufficient condition for a large decrease in the gender gap in the labour force participation rate.

Table 5.2. **Summary of change in the gender gap in the labour force participation rate (25-54 year olds), 1985-2010[a]**

With changes in the nine indicators of family policy and three policy indices (1985-2010[a]), and descriptive statistics. Countries are ranked in ascending order by change in the gender gap in the labour force participation rate

					Change in policy, 1985-2010 [a]												
					Dual earner-carer leave policy				Dual earner childcare policy				General family support policy				
	Country	Gender gap in the labour force participation rate (25-54 year olds)			Dual earner/carer leave policy index	Mother-specific earnings-related leave	Father-specific leave	Gender-neutral earnings-related parental leave	Dual earner childcare policy index	Proportion of children under three in publicly supported child care	Proportion of children three to six in public pre-primary education or primary school	Public expenditure on childcare services per child aged under six	General family support policy index	Child benefit per month for two children	Tax support for families	Flat-rate parental leave and childcare leave available to mothers	Total general maternity and parental leave available to mothers
		Change, 1985-2010[a]	1985[a]	2010[a]													
1	Spain	-45.2	59.4	14.2	0.57	5.50	2.60	0.00	1.24	14.60	27.22	2.61	0.36	1.99	2.79	0.00	5.50
2	Ireland	-37.5	55.4	18.0	0.12	2.09	0.00	0.00	1.46	1.00	49.16	3.33	0.47	7.81	-2.22	0.00	2.09
3	Netherlands	-36.2	47.3	11.1	0.82	4.00	5.96	0.00	1.41	4.00	39.66	3.73	0.07	-2.20	0.89	6.76	10.76
4	Luxembourg	-33.3	51.7	18.4	1.73	0.00	17.24	0.00	1.30	17.22	22.32	3.22	1.33	3.50	-4.50	49.46	23.66
5	Belgium	-25.2	36.9	11.8	0.44	0.40	4.14	0.00	0.89	10.37	6.12	3.60	0.41	0.26	3.94	3.75	4.16
6	Greece	-25.1	47.1	22.0	0.32	5.00	0.40	0.00	0.15	5.00	-0.12	0.25	-0.50	-3.09	-3.51	0.00	5.00
7	Portugal	-24.6	32.2	7.6	1.32	-3.22	11.54	10.71	1.00	15.00	23.05	1.43	0.59	1.06	6.99	0.00	7.49
8	Italy	-22.2	47.1	25.0	0.66	5.28	5.28	-5.16	0.73	7.70	7.89	2.74	1.27	11.64	4.59	0.00	0.12
9	Australia	-20.8	36.2	15.4	0.00	0.00	0.00	0.00	0.45	6.30	-4.15	2.62	0.44	8.64	-3.45	0.00	0.00
10	France	-17.0	27.6	10.5	-0.05	-2.17	0.74	0.00	0.74	2.00	-0.09	4.67	-0.38	-5.83	-1.75	7.59	13.03
11	Canada	-16.5	24.8	8.2	0.58	-0.65	0.00	19.25	0.08	0.00	4.15	0.02	0.04	2.86	-2.59	0.00	18.60
12	United Kingdom	-14.9	27.6	12.7	0.31	4.80	0.44	0.00	0.96	1.87	9.75	4.95	-0.49	-3.55	-2.79	0.00	4.80
13	Norway	-14.1	20.0	5.8	1.50	2.68	9.02	14.03	2.57	42.00	37.22	6.03	-0.35	-2.94	-5.14	9.26	16.71
14	New Zealand	-13.2	28.1	14.9	0.24	0.00	0.00	7.62	0.46	0.00	-2.33	3.40	1.05	15.24	-2.44	0.00	7.62
15	Austria	-11.7	21.5	9.8	0.00	0.00	0.00	0.00	0.81	14.10	11.67	1.80	-0.41	-2.27	-3.32	0.51	-4.04
16	Germany	-10.4	22.1	11.8	1.38	0.00	4.54	29.11	0.47	6.35	1.60	2.02	0.70	5.38	9.69	-15.52	13.59
17	United States	-10.3	24.3	14.0	0.00	0.00	0.00	0.00	0.39	5.00	1.22	1.68	0.44	0.00	6.05	0.00	0.00
18	Denmark	-2.2	9.0	6.7	-0.28	-6.59	-0.62	4.76	1.46	23.67	19.72	3.66	0.12	2.76	-1.36	0.00	-1.82
19	Finland	-0.4	6.7	6.3	0.45	0.78	4.85	-2.38	0.84	-4.33	28.36	2.69	-0.58	0.71	-5.95	-7.33	-1.60
20	Sweden	-0.1	6.4	6.3	0.83	6.21	6.01	-3.90	1.16	14.67	15.81	3.50	0.15	-1.56	-1.73	14.30	2.75
Mean		-19.04	31.56	12.52	0.55	1.21	3.61	3.70	0.93	9.33	14.91	2.90	0.24	2.02	-0.29	3.44	6.42
Pearson's r coefficent with change in gender gap			-0.96***	-0.52*	-0.20	-0.30	-0.22	0.17	-0.15	0.04	-0.36	0.05	-0.31	-0.10	-0.14	-0.27	-0.28

Note: * = p<0.05 ** = p<0.01 *** = p<0.001. ^ = p<0.1. The bars symbolize the magnitude of change between 1985 and 2010[a]. Lighter grey bars show positive change, darker grey negative change.

[a] Austria 1994-2010, Germany 1991-2010, New Zealand 1986-2010

Notably, table **5.2** also shows a *negative* correlation between changes in the gender gap and changes in the general family support index. This of course stands in contrast to the theorised effect of general family support provision, which is that increased provision should inflate gender differences in labour participation (Korpi, 2000; Korpi et al, 2013). Moreover, although still fairly weak, the negative association here is actually slightly stronger and more consistent than that seen on the two dual earner policy indices. Indeed, of the nine countries with the largest decreases in the gender gap over the series, eight *increased* general family support provision, while those that cut back on provision generally see only moderate or small gains in equality. It is difficult to explain this negative relation using the theory – indeed, it remains more than possible that the association is spurious, particularly given its size – but these initial results certainly provide no evidence to suggest that increases in general family support damage equality in headcount activity.

The suggestion from table **5.2** then, is that changes in family policies are only loosely related to developments in gender differences in labour participation. This is a little striking given the strength of the theory and in particular the existing empirical literature, but initial findings here provide only weak evidence of the well-established links between family policy and gender equality in labour market activity. That said, there are a couple of possible complicating factors that may mask clearer underlying relations between changes in policy and equality in market activity.

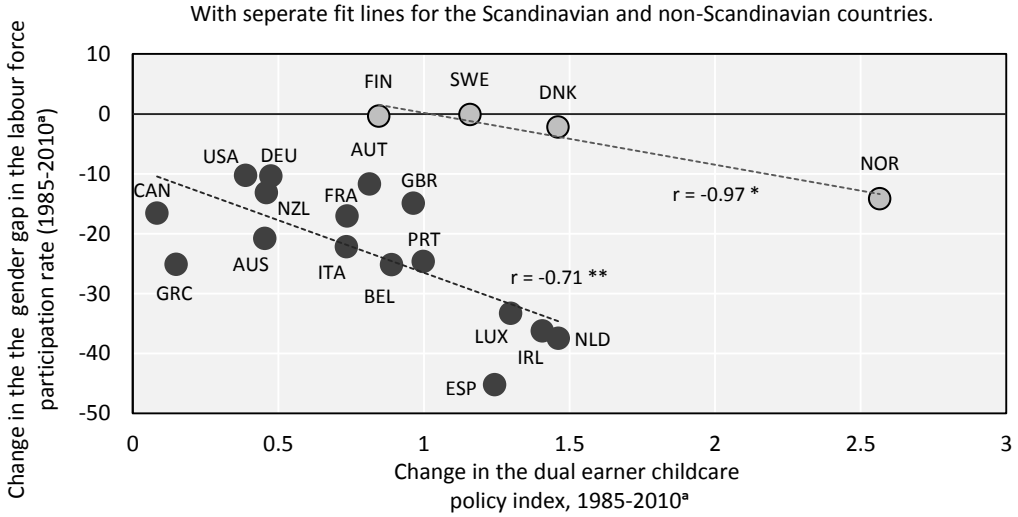
With regard to leave policies, and as discussed earlier in chapter **3,** it is possible that the use of several indicators that reflect various leave 'types' could obscure or disguise links between activity and leave in general. The final column in table **5.2** shows results for changes in total effective weeks of maternity and parental leave available to mothers, an indicator similar to that used in much of the literature (e.g. Ruhm, 1998; Nieuwenhuis et al, 2012; Akgunduz and Plantenga, 2012; Thévenon, 2013; Thévenon and Solaz, 2013). The correlation here is negative and moderate, suggesting that shifts towards equal labour participation are greater in those countries with larger extensions in total leave for mothers. However, the relation is driven in large part by the experience of Luxembourg – when removed, the correlation with the gender gap remains negative but falls to r = -0.17.

It is also possible that relations could be distorted by outliers. For example, it is noticeable from table **5.2** that the Scandinavian countries – with the partial exception of Norway – are slight anomalies with regards to patterns and trends in the gender gap in the labour force participation rate. These countries see little or no gains in equality in activity over the series, but notably were already fairly equal at the start of the period in 1985 – indeed,

at 6.7 and 6.4 percentage points, respectively, the gender gaps in Finland and Sweden were smaller in 1985 than in any other non-Scandinavian country over the period as a whole (see table **C.15** in appendix **C** (pg. 356). Thus, the absence of progress towards equality in these countries may perhaps be the result of a lack of scope for growth towards parity in crude activity. In any case, given that all have seen expansions in dual earner policy of at least reasonable size, the atypical pattern of change generally observed in the four Scandinavian countries may help explain why the relations seen in table **5.2** appear weak at best.

Excluding the Scandinavian countries from table **5.2** does produce stronger associations between changes in dual earner policy and gender differences in labour participation. The difference for dual earner-carer leave policy is fairly small – when the Scandinavian countries are omitted, the association between changes in the gender gap and the dual earner-carer leave policy index increases slightly in strength but remains moderate at r = -0.26[79]. However, the difference for relations with dual earner childcare policy is substantial. This is illustrated by figure **5.5**, which plots change in the gender gap in the labour force participation rates between 1985 and 2010 against change in the dual earner childcare policy index. The four Scandinavian countries are shaded in light grey and the sixteen remaining non-Scandinavian countries in dark grey, with separate fit lines for each group.

Figure 5.5. **Change in the dual earner childcare policy index and change in the gender gap in the labour force participation rate, 1985-2010[a]**
With seperate fit lines for the Scandinavian and non-Scandinavian countries.



[a] Austria 1994-2010, Germany 1991-2010, New Zealand 1986-2010.
Note: * = p<0.05 ** = p<0.01 *** = p<0.001. ^ = p<0.1. See figure **4.1** for abbreviations

[79] For reference, when the Scandinavian countries are removed relations for the three component indicators stand at r = -0.43 for mother-specific leave, r = -0.36 for father-specific leave, and notably r = 0.38 for gender-neutral earnings related leave

The figure shows a clear strong and negative correlation (r = -0.71) between change in the gender gap and change in the dual earner childcare policy index amongst the non-Scandinavian countries[80]. Interestingly, there is also an extremely strong and negative correlation (r = -0.97) amongst the Scandinavian countries themselves. Removing the Scandinavian countries from the remaining sample is clearly not ideal – although relatively close, participation rates in Scandinavia have not yet reached equality so any distorting effects on relations cannot be explained away entirely. Nonetheless, when the Scandinavian countries are treated separately from the remaining countries, there is at least some evidence to suggest that countries with larger increases in dual earner provision also see larger decreases in gender differences in headcount participation.

Fixed effects regression analysis for the gender gap in the labour force participation rate (25-54 year olds, and 25-34 year olds)

The fairly simple descriptive associations above then, suggest that links between changes in policy and gender differences in labour participation are either fairly weak or are conditional on the sample used. Table **5.3** builds on these initial findings by summarising results from fixed effects regression models for changes in the gender gap in the labour force participation rate for men and women aged 25-54. It contains two sets of models, each of which consist of three identical specifications with the gender gap and the individual male and female labour force participation rates as dependent variables. Specifications **A-C** are the main fixed effects models. They use all nine of the main family policy indicators, plus five control variables. Specifications **D-F** are similar but contain an additional set of interaction terms between the six dual earner policies indicators and a 'Scandinavia' dummy, for reasons explained a little later on.

Results from the main specifications in **A-C** show strikingly few clear relations between changes in family policy provision and the gender gap in the labour force participation rate. There is a negative and significant association between changes in the gender gap and the proportion of children aged between 0 and 3 in publicly funded childcare, indicating that an expansion in public provision for very young children may promote equality in activity. Likewise, there is also some suggestion of a negative relation between gender differences in participation and public childcare services for slightly older children.

[80] Correlations with the three component indicators stand at r = -0.33 for provision for under threes, r = -0.15 for public expenditure on childcare services, and most strikingly r = -0.77 for public provision for older children.

Table 5.3. **Two-way fixed effects models for the gender gap in the labour force participation rate (25-54 year olds)**

	Specification set:	Main specification						Interaction terms between the dual earner policy indicators and a 'Scandinavia' dummy					
	Model:	**A**		**B**		**C**		**D**		**E**		**F**	
	Dependent variable:	Gender gap in the labour force participation rate (25-54 year olds)		Male labour force participation rate (25-54 year olds)		Female labour force participation rate (25-54 year olds)		Gender gap in the labour force participation rate (25-54 year olds)		Male labour force participation rate (25-54 year olds)		Female labour force participation rate (25-54 year olds)	
Lag	Variable	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE
	Dual earner-carer leave policy												
t-1	Mother-specific earnings-related leave	-0.107	(0.110)	0.124	(0.110)	0.231	(0.15)	-0.026	(0.116)	0.144	(0.100)	0.170	(0.171)
t	Father-specific leave	-0.014	(0.049)	-0.005	(0.049)	0.009	(0.07)	-0.012	(0.042)	0.007	(0.019)	0.019	(0.049)
t-1	Gender-neutral earnings-related parental leave	-0.034	(0.032)	0.014	(0.032)	0.047	(0.04)	0.019	(0.018)	0.009	(0.021)	-0.011	(0.027)
	Dual earner childcare policy												
t-1	Children under 3 in public childcare	-0.121	(0.048) *	0.059	(0.048) *	0.180	(0.06) *	-0.179	(0.085) *	0.052	(0.031)	0.230	(0.101) *
t-1	Children 3-6 in public pre-primary care or primary school	-0.017	(0.010) ^	0.008	(0.010)	0.025	(0.02)	-0.011	(0.009)	0.006	(0.010)	0.017	(0.014)
t-1	Public expenditure on childcare services	0.258	(0.179)	0.162	(0.179)	-0.097	(0.32)	0.379	(0.216) ^	-0.060	(0.106)	-0.439	(0.277)
	General family support policy												
t	Child benefit per month for two chlldren	-0.033	(0.039)	0.026	(0.039)	0.060	(0.05)	-0.037	(0.037)	0.024	(0.031)	0.061	(0.051)
t	Tax support for families	-0.038	(0.044)	0.000	(0.044)	0.038	(0.07)	-0.027	(0.049)	-0.001	(0.031)	0.026	(0.068)
t-1	Flat-rate parental leave and childcare leave	-0.004	(0.013)	0.011	(0.013)	0.015	(0.02)	-0.007	(0.010)	0.009	(0.015)	0.016	(0.021)
	Dual earner-carer leave policy interactions with 'Scandinavia' dummy												
t-1	Scandinavia * mother-specific earnings-related leave							-0.275	(0.199)	-0.074	(0.101)	0.201	(0.234)
t	Scandinavia * father-specific leave							0.114	(0.114)	-0.228	(0.041) ***	-0.342	(0.123) *
t-1	Scandinavia * gender-neutral earnings-related parental leave							-0.110	(0.042) *	0.023	(0.027)	0.133	(0.038) **
	Dual earner childcare policy interactions with 'Scandinavia' dummy												
t-1	Scandinavia * children under 3 in public childcare							0.123	(0.084)	-0.016	(0.043)	-0.138	(0.103)
t-1	Scandinavia * children 3-6 in public pre-primary or primary school							0.010	(0.023)	-0.012	(0.022)	-0.022	(0.041)
t-1	Scandinavia * public expenditure on childcare services							-0.767	(0.464)	0.914	(0.383) *	1.681	(0.806) ^
t-1	Service Sector Size	-0.087	(0.094)	0.025	(0.094)	0.112	(0.12)	-0.069	(0.081)	0.027	(0.048)	0.096	(0.110)
t-1	Public Sector Size	0.299	(0.173)	-0.019	(0.173)	-0.318	(0.24)	0.320	(0.166)	-0.001	(0.094)	-0.321	(0.231)
t-1	Crude birth rate	0.219	(0.215)	-0.011	(0.215)	-0.229	(0.29)	0.277	(0.181)	-0.068	(0.082)	-0.344	(0.217)
t-5	Female share of tertiary education students	-0.023	(0.085)	0.013	(0.085)	0.036	(0.11)	-0.012	(0.080)	0.003	(0.051)	0.015	(0.100)
t	Employment protection legislation index	-0.389	(0.675)	0.230	(0.675)	0.619	(0.95)	0.004	(0.760)	0.356	(0.544)	0.352	(1.083)
	n	486		486		486		486		486		486	
	r-squared (within)	0.985		0.756		0.971		0.986		0.781		0.975	

Note : * = p<0.05 ** = p<0.01 *** = p<0.001. ^ = p<0.1. Results are robust to the omission of potentially influential observations (see appendix **E** for diagnostics).

Specifications :

A-C. Two-way fixed effects (country and time) with country-specific time-trends and cluster robust standard errors (CRSEs). Main specification

D-F. Two-way fixed effects (country and time) with country-specific time-trends and CRSEs. Additional interaction terms between a 'Scandinavia' dummy (1=Denmark, Finland, Norway, Sweden) and the dual earner/carer leave policy and dual earner childcare policy indicators

This latter association is however significant only at the more lenient 10% level, and in any case the coefficient is only very small – the estimated effect of a 49 percentage point increase in the proportion of 3-6 year olds in public pre-primary education or school, the largest observed over the series, is a decrease in the gender gap of just 0.8 percentage points, all else equal. Thus, even if a p-value of less than 0.10 is considered statistically significant, the substantive impact of changes in public provision for older children is limited at best[81].

Elsewhere however, estimated coefficients on all other variables are generally small and in all cases far from statistical significance. There is no indication here then, that an expansion in general family support policy leads to inflated gender differences in market participation. Perhaps more surprisingly, there is also little to suggest that increases or extensions to the various dual earner-carer leave policies promote women's relative economic activity. Indeed, the general inference from specifications **A-C** is that, aside from the effects of childcare provision for children under three, changes in family policy appear mostly unrelated to changes in the gender gap in the labour force participation rate.

That said, there may again be a few complicating factors that obscure or disguise relations between changes in policy and economic activity. Firstly, as highlighted in the descriptive analysis above, it is possible that associations with dual earner provisions may be distorted somewhat by the experience of the Scandinavian countries. Specifications **D-F** in table **5.3** explore further through the inclusion of a set of interaction terms between the six dual earner policy indicators and a dummy variable[82] representing the Scandinavian countries (Denmark, Finland, Norway and Sweden). This has the effect of giving separate slopes on each dual earner indicator to the Scandinavian countries, with the 'main effect' on the original indicators reflecting relations within the remaining sixteen countries only.

The inclusion of the interaction terms makes little difference to results. Most of the interaction terms themselves are not significant, indicating that relations *within* the Scandinavian countries are no different to those in the remaining sixteen. The only exception is the interaction on gender-neutral earnings-related parental leave, which is negative and significant at the 5% level[83]. It would be premature to make firm inferences

[81] Furthermore, the sensitivity analyses in appendix **F** (pp. 413-417) show that the relation falls out of significance altogether if cases imputed using LVCF/NVCB are removed from the model.
[82] The Scandinavian dummy itself is dropped from all models as it is 'averaged-out' by the country fixed effects.
[83] This interaction remains statistically significant if values on the Scandinavia dummy are reversed so that the values for the Scandinavian are used as the 'main effect'. In other words, the relation

based on this coefficient alone given that the sample size for the interaction is only four countries, but this result perhaps provides some suggestion that changes in this particular dual earner-carer leave policy can promote equality in activity if only within the context of the Scandinavian countries. More importantly, though, the 'main effects' on each of the six dual earner policy indicators – that is, the estimates of relations across the remaining sixteen non-Scandinavian countries – are almost identical to those seen in models **A-C**. In other words, with or without the four Scandinavian countries, the only statistically significant relation remains that on childcare provision for children under three[84].

Secondly, as pointed out in the previous section and as discussed in some depth in chapter **3**, it is possible that splitting leave provisions into several indicators based on Korpi's (2000) theoretical types obscures some underlying relation with general leave. Table **5.4** (overleaf) presents results from models that use the alternative set of leave indicators outlined earlier in chapter **3**. More specifically, models **A-C** are similar to the main models (**A-C**) shown in table **5.3** but with 'total maternity and parental leave available to mothers' and 'childcare leave' substituted in for the indicators of mother-specific earnings-related leave, gender-neutral earnings-related parental leave and flat-rate parental and childcare leave. **D-F**, meanwhile, go a little further by adding a squared term on total maternity and parental leave available to mothers in order to capture any exponential or – more likely – diminishing effects from changes in total general leave.

Using this alternative measure of total general leave again makes little real difference to results. Model **A** does show a negative relation on total maternity and parental leave available to mothers that is significant at the more lenient 10% level, hinting perhaps that increases in the length of general leave on offer to mothers can promote equal participation. However, the coefficient here is only very small – the estimated effect of a 24 week extension to effective weeks of total maternity and parental leave, the largest observed in the sample, is a decrease in the gender gap of just 1.1 percentage points. Moreover, model **D** shows that the relation on total leave falls away from significance

---

between gender-neutral earnings-related leave and the gender gap in the labour force participation rate for the Scandinavian countries only is statistically significant in its own right.

[84] That said, the sensitivity analyses shown in Appendix **F** (pp. 413-417) suggest that when cases imputed using LVCF/NVCB are removed from the model, the positive coefficient on public expenditure on childcare services moves into significance at the 5% level. This is curious and difficult to explain using the theory, in that is suggests that an increase in public spending on childcare *increases* the gender gap in participation. It is possible though, that causation runs in the opposite direction, with an increase in childcare expenditure a response to little or no growth in female economic activity.

Table 5.4. **Alternative two-way fixed effects models for the gender gap in the labour force participation rate (25-54 year olds)**

		Specification set:	Alternative measures of leave policy						Alternative measure of leave policy, with squared term					
		Model:	**A**		**B**		**C**		**D**		**E**		**F**	
		Dependent variable:	Gender gap in the labour force participation rate (25-54 year olds)		Male labour force participation rate (25-54 year olds)		Female labour force participation rate (25-54 year olds)		Gender gap in the labour force participation rate (25-54 year olds)		Male labour force participation rate (25-54 year olds)		Female labour force participation rate (25-54 year olds)	
Lag	Variable		B	SE	B	SE	B	SE	B	SE	B	SE	B	SE
	Dual earner-carer leave policy													
t-1	Mother-specific earnings-related leave													
t	Father-specific leave		0.017	(0.051)	-0.017	(0.024)	-0.034	(0.064)	0.022	(0.051)	-0.021	(0.025)	-0.042	(0.063)
t-1	Gender-neutral earnings-related parental leave													
	Dual earner childcare policy													
t-1	Children under 3 in public childcare		-0.112	(0.046) *	0.064	(0.025) *	0.177	(0.060) **	-0.117	(0.047) *	0.068	(0.024) *	0.186	(0.060) **
t-1	Children 3-6 in public pre-primary care or primary school		-0.014	(0.012)	0.005	(0.010)	0.019	(0.019)	-0.014	(0.012)	0.005	(0.010)	0.019	(0.019)
t-1	Public expenditure on childcare services		0.245	(0.185)	0.170	(0.179)	-0.075	(0.336)	0.239	(0.185)	0.175	(0.176)	-0.064	(0.332)
	General family support policy													
t	Child benefit per month for two chlldren		-0.017	(0.034)	0.024	(0.030)	0.041	(0.045)	-0.026	(0.036)	0.030	(0.032)	0.056	(0.053)
t	Tax support for families		-0.035	(0.044)	0.008	(0.040)	0.043	(0.070)	-0.035	(0.042)	0.008	(0.038)	0.043	(0.066)
t-1	Flat-rate parental leave and childcare leave													
	Alternative measures of leave policy													
t-1	Total maternity and parental leave available to mothers		-0.046	(0.024) ^	0.026	(0.013) ^	0.072	(0.032) *	-0.109	(0.087)	0.072	(0.049)	0.180	(0.086) ^
t-1	(Total maternity and parental leave available to mothers)^2								0.001	(0.001)	-0.001	(0.001)	-0.002	(0.001)
t-1	Childcare leave		0.013	(0.014)	0.005	(0.015)	-0.009	(0.023)	0.011	(0.011)	0.007	(0.016)	-0.005	(0.021)
t-1	Service Sector Size		-0.082	(0.089)	0.024	(0.045)	0.106	(0.114)	-0.077	(0.088)	0.021	(0.047)	0.098	(0.117)
t-1	Public Sector Size		0.317	(0.178) ^	-0.008	(0.089)	-0.325	(0.240)	0.325	(0.173) ^	-0.013	(0.081)	-0.338	(0.230)
t-1	Crude birth rate		0.176	(0.202)	0.001	(0.111)	-0.175	(0.276)	0.165	(0.199)	0.008	(0.113)	-0.157	(0.279)
t-5	Female share of tertiary education students		-0.015	(0.084)	0.016	(0.053)	0.031	(0.107)	-0.023	(0.089)	0.022	(0.049)	0.046	(0.108)
t	Employment protection legislation index		-0.311	(0.523)	0.043	(0.342)	0.354	(0.741)	-0.406	(0.592)	0.112	(0.373)	0.519	(0.798)
	Joint F-test on total leave available to mothers and its square (d.f)								2.430	(2, 19)	2.400	(2, 19)	4.170	(2, 19) *
	n		486		486		486		486		486		486	
	r-squared (within)		0.985		0.751		0.971		0.985		0.752		0.972	

Note: * = p<0.05 ** = p<0.01 *** = p<0.001. ^ = p<0.1. The joint F-test on total maternity and parental leave available to mothers and its square tests the null that the two are jointly equal to zero. Results are robust to the omission of potentially influential observations (see appendix **E** for diagnostics).

Specifications :

A-C. Two-way fixed effects (country and time) with country-specific time-trends and CRSEs. Leave indicators simplified into 'Total effective weeks of maternity and parental leave available to mothers', plus 'Effective weeks of father-specific leave' and 'Effective weeks of childcare leave'.

D-F. Two-way fixed effects (country and time) with country-specific time-trends and CRSEs. Leave indicators simplified into 'Total effective weeks of maternity and parental leave available to mothers' and its sqaure, plus 'Effective weeks of father-specific leave' and 'Effective weeks of childcare leave'.

completely once the squared term is added to the specification[85]. Thus, evidence from table **5.4** on any link between changes in total leave and gender differences in labour participation should be considered only very weak at best.

Lastly, given that many – although not all[86] – of the family policies covered here are designed to be used either around childbirth or by the parents of very young children, it is possible that the effects of changes in certain provisions will be stronger or clearer when looking specifically at men and women of 'prime' childbearing age. Table **5.5** (overleaf) shows results from two sets of models that use participation rates for men and women aged 25-34 only as the dependent variables. Specifications **A-C** are similar to models **A-C** in table **5.3**, in that they use the main nine indicators of family policy as the key independent variables. **D-F** use the alternative measures of leave, plus a squared term on total general maternity and parental leave available to mothers.

Results here are slightly more consistent with expectations, at least with regard to leave policies. Starting with the second set of models, estimates in model **D** show a sizeable if slightly curvilinear relation on changes in total general maternity and parental leave available to mothers. The coefficient on the main term is large and negative and that on the squared term positive but very small, with both individually significant – at the 10% level at least – and the two highly jointly significant with a p-value less than 0.01. The inference then, is that increases in general leave are associated with decreases in gender differences in participation amongst 25-34 year olds, albeit with marginal effects that diminish slightly with the length of the change in leave.

Results from model **A** also show that leave entitlements may help close gender gaps in market participation. Notably, though, estimates here suggest that effects are not uniform across the various types of leave on offer. There is a large, negative and significant association between changes in the gender gap and mother-specific earnings-related leave – which, for the most part, means maternity leave – and some admittedly weaker

---

[85] It should be noted here that when testing the significance of the coefficients on total maternity and parental leave and its square, the important test is the joint F-test shown at the bottom of the table. The joint F-test tests the null that 'total maternity and parental leave available to mothers' and '(total maternity and parental leave available to mothers)^2' are jointly equal to zero, that is, that together both total leave and its square have no effect on the dependent variable. This is important for two reasons. Firstly, total leave and its square are highly correlated, so it is likely that each will have inflated individual standard errors and therefore deflated individual t-statistics (Stock and Watson, 2009: 209). Secondly, substantively the two *are* the same variable, so what matters most is knowing whether, when taken together, the two have an effect that is statistically different from zero.

[86] As noted earlier in chapter **3.3**, several policies – particularly child benefit and tax support for the family – may continue to affect parents' labour supply decisions long after childbirth.

Table 5.5. **Two-way fixed effects models for the gender gap in the labour force participation rate (25-34 year olds)**

	Specification set:	Main specification						Alternative measure of leave policy, with squared term					
	Model:	**A**		**B**		**C**		**D**		**E**		**F**	
	Dependent variable:	Gender gap in the labour force participation rate (25-34 year olds)		Male labour force participation rate (25-34 year olds)		Female labour force participation rate (25-34 year olds)		Gender gap in the labour force participation rate (25-34 year olds)		Male labour force participation rate (25-34 year olds)		Female labour force participation rate (25-34 year olds)	
Lag	Variable	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE
	Dual earner-carer leave policy												
t-1	Mother-specific earnings-related leave	-0.316	(0.123) *	0.094	(0.078)	0.410	(0.152) *						
t	Father-specific leave	-0.050	(0.075)	0.016	(0.026)	0.066	(0.081)	0.023	(0.072)	0.005	(0.033)	-0.018	(0.077)
t-1	Gender-neutral earnings-related parental leave	-0.088	(0.044) ^	0.014	(0.018)	0.101	(0.046) *						
	Dual earner childcare policy												
t-1	Children under 3 in public childcare	-0.207	(0.063) **	0.039	(0.023)	0.246	(0.071) **	-0.217	(0.066) **	0.049	(0.025)	0.267	(0.072) **
t-1	Children 3-6 in public pre-primary care or primary school	0.008	(0.021)	0.014	(0.009)	0.006	(0.027)	0.016	(0.022)	0.012	(0.009)	-0.004	(0.029)
t-1	Public expenditure on childcare services	0.215	(0.347)	0.218	(0.214)	0.003	(0.543)	0.171	(0.361)	0.229	(0.220)	0.058	(0.563)
	General family support policy												
t	Child benefit per month for two chlldren	-0.057	(0.063)	0.015	(0.043)	0.072	(0.086)	-0.049	(0.066)	0.022	(0.045)	0.071	(0.093)
t	Tax support for families	-0.078	(0.069)	0.000	(0.049)	0.079	(0.090)	-0.071	(0.069)	0.008	(0.047)	0.080	(0.081)
t-1	Flat-rate parental leave and childcare leave	-0.005	(0.021)	0.018	(0.016)	0.024	(0.027)						
	Alternative measures of leave policy												
t-1	Total maternity and parental leave available to mothers							-0.286	(0.108) *	0.076	(0.057)	0.362	(0.109) **
t-1	(Total maternity and parental leave available to mothers)^2							0.003	(0.002) ^	-0.001	(0.001)	-0.004	(0.002) *
t-1	Childcare leave							0.012	(0.015)	0.015	(0.015)	0.003	(0.019)
t-1	Service Sector Size	-0.120	(0.104)	-0.040	(0.051)	0.080	(0.121)	-0.096	(0.097)	-0.043	(0.051)	0.053	(0.118)
t-1	Public Sector Size	0.287	(0.213)	-0.072	(0.110)	-0.359	(0.242)	0.304	(0.208)	-0.069	(0.101)	-0.374	(0.230)
t-1	Crude birth rate	0.792	(0.347) *	0.070	(0.143)	-0.722	(0.439)	0.680	(0.342) ^	0.082	(0.143)	-0.598	(0.440)
t-5	Female share of tertiary education students	-0.112	(0.113)	-0.076	(0.071)	0.036	(0.138)	-0.125	(0.117)	-0.065	(0.070)	0.060	(0.138)
t	Employment protection legislation index	-0.043	(0.769)	0.650	(0.466)	0.694	(1.099)	0.031	(0.703)	0.592	(0.430)	0.562	(0.951)
	Joint F-test on total leave available to mothers and its square (d.f)							7.160	(2, 19) **	1.600	(2, 19)	11.830	(2, 19) ***
	n	485		485		485		485		485		485	
	r-squared (within)	0.959		0.734		0.928		0.959		0.734		0.928	

Note: * = p<0.05 ** = p<0.01 *** = p<0.001. ^ = p<0.1. The joint F-test on total maternity and parental leave available to mothers and its square tests the null that the two are jointly equal to zero. Results are robust to the omission of potentially influential observations (see appendix **E** for diagnostics).

Specifications :

A-C. Two-way fixed effects (country and time) with country-specific time-trends and cluster robust standard errors (CRSEs). Main specification

D-F. Two-way fixed effects (country and time) with country-specific time-trends and CRSEs. Leave indicators simplified into 'Total effective weeks of maternity and parental leave available to mothers' and its sqaure, plus 'Effective weeks of father-specific leave' and 'Effective weeks of childcare leave'.

indication of similar relation on gender-neutral earnings-related leave. In contrast, the estimated effect of changes in flat-rate parental and childcare leave is effectively zero. The latter association is notable in itself, in as much as it suggest that these 'general family support' flat-rate leaves at least do no harm to female economic activity. However, when the three estimates are compared the more striking inference is that the association between general leave and economic activity noted above appears driven entirely by dual earner-carer-type leave entitlements. In other words, results here support the argument made by Korpi (2010) and others (Ferrarini, 2006; Mischke, 2011; Korpi et al, 2013) that the structure and design of leave entitlements may have a meaningful impact on the extent to which they promote female market participation.

Finally, results across models in table **5.5** continue to suggest that changes in public childcare for children aged less than three can promote relative female participation. All other estimates, however, remain small and far from statistical significance[87]. The absence of any clear association on either child benefit or tax support for the family is particularly notable though – when combined with results elsewhere, the broader message is that changes in general family support policy in general appear to do no damage to gender differences in participation.

Summary

Findings from this section produce mixed support for the theorised effects of family policy on gender equality in employment. Results from across the various analyses provide no evidence to suggest that general family support provisions constrain female activity or inflate gender differences in labour participation. However, there is consistent indication that expanding public childcare services for children under three promotes female market activity, and also some suggestion that increasing or extending leave entitlements for mothers – both in general and particularly when designed so as to encourage dual earning – can help close gender gaps in labour force participation rates.

It is worth noting again that the associations on leave emerge only once measures concentrate on participation amongst men and women aged 25-34. Indeed, results from both the initial descriptive analysis and from the regression models suggest that links

[87] The sensitivity analyses shown in Appendix F (pp. 413-417) suggest that the positive coefficient on public childcare for 3-6 year olds does move into significance at the 10% level if cases imputed using LVCB/NVCF are removed from the model. The coefficient, however, remains tiny, so any substantive effect of a change in the provision of public services for 3-6 year olds remains effectively nil.

between leave and the gap in participation rates amongst the broader 25-54 year old age group are weak at best. There is nothing here that strictly conflicts with the theory – far from it, it makes theoretical sense for the effects of leave entitlements to be stronger and clearer amongst men and women of 'prime' childbearing age as these are the group most likely to make use of leaves programmes. However, given the strength of existing 'over time' evidence on associations between leave and economic activity – much of which relies entirely on data for broader age groups (Jaumotte, 2003; Ferrarini, 2006; Nieuwenhuis et al, 2012; Thévenon, 2013; Thévenon and Solaz, 2013) – it is a little surprising that links were not clearer for activity amongst 25-54 year olds. There may be technical or methodological reasons for the differences in results, as discussed later in section **5.5**. For now though, the general inference from this section remains that expanding dual earner leave and childcare provision can encourage equal participation, while general family support policies appear to do little harm to female economic activity.

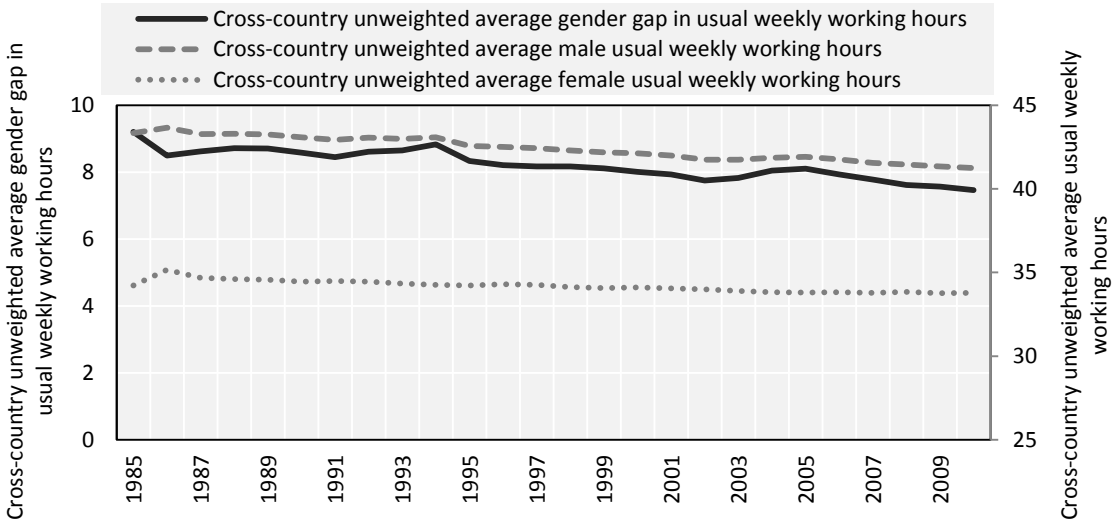
5.4. Gender gap in usual weekly working hours

While the effects of family policy on the headcount participation rate receives much of the attention in the literature, any influence on the extent of male and female economic activity in terms of working hours remains important. A limited number of 'over time' comparative studies do extend their analyses to include the influence of family policy on gender equality in working hours (Jaumotte, 2003; Akgunduz and Plantenga, 2012; Thévenon, 2013; Thévenon and Solaz, 2013). Generally, results in the literature are similar to those for the headcount activity. Akgunduz and Plantenga (2012) and Thévenon and Solaz (2013) find that increases in leave entitlements can reduce gender differences in working hours, while others (Jaumotte, 2003; Thévenon, 2013) find that changes in childcare coverage promote, and tax and transfers policies reduce, female full-time employment. The following turns attention to relations between changes in family policy and the gender gap in usual weekly working hours (25-54 year olds), again starting first with a description of trends and developments in equality in working hours.

Description of trends and changes in the gender gap in usual weekly working hours, and links with changes in family policy

Changes in equality in weekly working hours are fairly mild compared to the sharp trends observed in the previous section for gender difference in headline activity, on average across countries at least. Figure **5.6** plots the cross-country unweighted average gender gap in usual weekly working hours for the twenty sample countries over the years 1985-

Figure 5.6. **Cross-country unweighted average gender gap in usual weekly working hours (25-54 year olds), 1985-2010**
With cross-country unweighted average male and female weekly working hours



2010, alongside unweighted average male and female weekly working hours on the secondary y-axis.

Similar to the gender gap in the labour force participation rate, the average difference between male and female working hours declines over the series. The decrease is only slight, though, from just over nine hours in 1985 to around seven and a half in 2010. Notably, much of the drop can be attributed to a decrease in average male working hours, which fall from 43 hours per week at the beginning of the series to just over 41 at the end. Female hours are comparatively stable, changing by just over half an hour between 1985 and 2010, although the drop is larger if the deviation from trend in 1985 is discounted – between 1986 and 2010, average female working hours fall from just over 35 hours per week to just under 34. Nonetheless, on average across countries, equality in the depth of economic activity for those in employment changes only marginally between 1985 and 2010.

These fairly modest average trends do however mask diverse changes in working hours across countries. Table **5.6** (overleaf) ranks countries in ascending order by the degree of change in the gender gap in weekly working hours between the years 1985 and 2010. It also shows the gender gap at the beginning and end of the period for context, summarises change on the indicators of family policy over the equivalent period, and contains descriptive statistics.

Table 5.6. **Summary of change in the gender gap in usual weekly working hours (25-54 year olds), 1985-2010[a]**

With changes in the nine indicators of family policy and three policy indices (1985-2010[a]), and descriptive statistics. Countries ranked in ascending order by change in the gender gap in usual weekly working hours

		Gender gap in usual weekly working hours (25-54 year olds)			Change in policy, 1985-2010 [a]													
					Dual earner-carer leave policy				Dual earner childcare policy				General family support policy					
	Country	Change, 1985-2010[a]	1985[a]	2010[a]	Dual earner/carer leave policy index	Mother-specific earnings-related leave	Father-specific leave	Gender-neutral earnings-related parental leave	Dual earner childcare policy index	Proportion of children under three in publicly supported child care	Proportion of children three to six in public pre-primary education or primary school	Public expenditure on childcare services per child aged under six	General family support policy index	Child benefit per month for two children	Tax support for families	Flat-rate parental leave and childcare leave available to mothers	Total general maternity and parental leave available to mothers
1	United Kingdom	-6.5	16.9	10.5	0.31	4.80	0.44	0.00	0.96	1.87	9.75	4.95	-0.49	-3.55	-2.79	0.00	4.80
2	Denmark	-5.6	9.9	4.3	-0.28	-6.59	-0.62	4.76	1.46	23.67	19.72	3.66	0.12	2.76	-1.36	0.00	-1.82
3	New Zealand	-4.0	13.9	9.9	0.24	0.00	0.00	7.62	0.46	0.00	-2.33	3.40	1.05	15.24	-2.44	0.00	7.62
4	Norway	-3.5	8.7	5.2	0.39	-0.32	5.02	-2.97	1.66	32.00	19.58	3.73	-0.32	-5.10	-2.30	9.26	-3.29
5	Netherlands	-3.3	15.9	12.6	0.82	4.00	5.96	0.00	1.41	4.00	39.66	3.73	0.07	-2.20	0.89	6.76	10.76
6	Sweden	-2.6	6.7	4.1	0.31	2.95	2.95	-4.60	1.32	9.67	26.05	4.05	0.27	-2.01	0.00	15.44	-0.08
7	Australia	-2.2	12.7	10.4	0.00	0.00	0.00	0.00	0.45	6.30	-4.15	2.62	0.44	8.64	-3.45	0.00	0.00
8	Ireland	-2.0	10.5	8.4	0.12	2.09	0.00	0.00	1.46	1.00	49.16	3.33	0.47	7.81	-2.22	0.00	2.09
9	Portugal	-0.1	3.2	3.1	1.32	-3.22	11.54	10.71	0.99	15.00	22.49	1.43	0.47	-0.20	6.69	0.00	7.49
10	Finland	0.0	3.9	3.9	0.48	2.57	2.97	1.30	1.00	9.67	25.94	1.91	-0.71	-5.15	0.00	-10.49	3.87
11	France	0.6	5.8	6.4	-0.05	-2.17	0.74	0.00	0.74	2.00	-0.09	4.67	-0.38	-5.83	-1.75	7.59	13.03
12	Belgium	1.2	6.5	7.7	0.44	0.40	4.14	0.00	0.89	10.37	6.12	3.60	0.41	0.26	3.94	3.75	4.16
13	Greece	1.5	3.6	5.1	0.32	5.00	0.40	0.00	0.15	5.00	-0.12	0.25	-0.50	-3.09	-3.51	0.00	5.00
14	Spain	2.2	3.9	6.1	0.57	5.50	2.60	0.00	1.19	14.60	24.62	2.60	0.39	2.04	3.11	0.00	5.50
15	Luxembourg	2.3	5.8	8.1	1.73	0.00	17.24	0.00	1.30	17.22	22.32	3.22	1.33	3.50	-4.50	49.46	23.66
16	Germany	2.7	7.6	10.4	1.38	0.00	4.54	29.11	0.47	6.35	1.60	2.02	0.70	5.38	9.69	-15.52	11.49
17	Italy	3.1	4.6	7.8	0.66	5.28	5.28	-5.16	0.73	7.70	7.89	2.74	1.27	11.64	4.59	0.00	0.12
18	Austria	4.6	5.6	10.2	-0.41	0.00	-4.05	0.00	0.75	12.09	10.97	1.77	-0.22	-2.14	-3.17	6.50	1.96
19	Canada	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	United States	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mean		-0.64	8.10	7.46	0.46	1.13	3.28	2.27	0.97	9.92	15.51	2.98	0.24	1.55	0.08	4.04	5.35
Pearson's r coefficent with change in gender gap			-0.76***	-0.03	0.29	0.17	0.20	0.13	-0.38	-0.01	-0.19	-0.58*	0.23	0.02	0.34	0.08	0.31

Note: * = p<0.05 ** = p<0.01 *** = p<0.001. ^ = p<0.1. The bars symbolize the magnitude of change between 1985 and 2010[a]. Lighter grey bars show positive change, darker grey negative change.

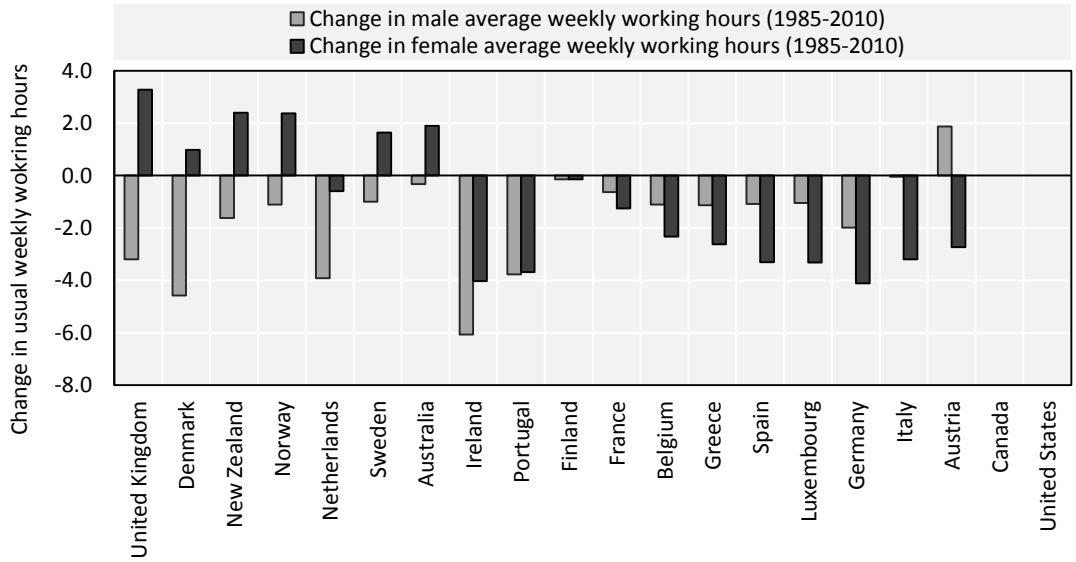
[a] Austria, 1995-2010; Finland, 1995-2010, Germany, 1991-2010; New Zealand, 1986-2010; Norway, 1995-2010; Portugal, 1986-2010; Spain, 1987-2010, Sweden, 1995-2010. The United States is missing entirely. Canada is omitted because data are available only until 1995.

The gender gap in weekly hours falls, to varying extents, in nine of the 18 countries for which data are available. Decreases are particularly large in the United Kingdom and Denmark, both of which see the gap fall by over five hours per week. In nine other countries, however, the gap either remains constant or increases. Most notable are the expansions in Germany, Italy and especially Austria, where the gender gap grows by just over four and a half hours per week.

Figure **5.7** explores the drivers behind these differential shifts in the gender gap. It shows change between the beginning and end of the series in both male and female average weekly working hours by country. Countries are sorted in ascending order according to change in the gender gap in weekly working hours.

Figure 5.7. **Change in male and female usual weekly working hours between 1985 and 2010**

Countries ranked in ascending order by change in the gender gap in weekly working hours



[a] Austria, 1995-2010; Finland, 1995-2010, Germany, 1991-2010; New Zealand, 1986-2010; Norway, 1995-2010; Portugal, 1986-2010; Spain, 1987-2010, Sweden, 1995-2010. Canada and the United States are missing entirely.

Male weekly working hours fall, to varying extents, in all but one of the 18 countries over the series. In most of those countries that see a decrease in the gender gap, the fall in male hours is coupled with an increase in female average weekly working hours – in other words, both male and female hours shift towards a more equal middle ground. In contrast, in those countries that see an increase in the gender gap, female weekly working hours decrease over the series and by more than the equivalent decrease for men[88].

[88] It is worth noting that the effects of the financial crisis make little difference to these patterns of development. If hours in 2007 are used in place of 2010, country rankings remain identical while

It is noticeable from figure **5.7** that many of those countries that see a decrease in female weekly hours over the series are also those that saw large decreases in the gender gap in headcount participation earlier in section **5.3**. Belgium, Ireland, Spain and Luxembourg, for example, all twin substantial gains in equality in crude activity with a decrease in female working hours. Likewise, many of those that see female hours increase – such as the United Kingdom and New Zealand, and particularly Denmark and Sweden – also saw lesser gains in equality in headcount activity earlier in **5.3**. Indeed, changes in average female weekly working hours are negatively correlated with changes in female activity rates more generally (r = -0.62). To some degree then, gains in female participation appear to be at least slightly offset by decreases in the average hours worked by female employees – in other words, there appears some 'trade off' whereby average female working hours fall in countries that have seen large gains in female market participation.

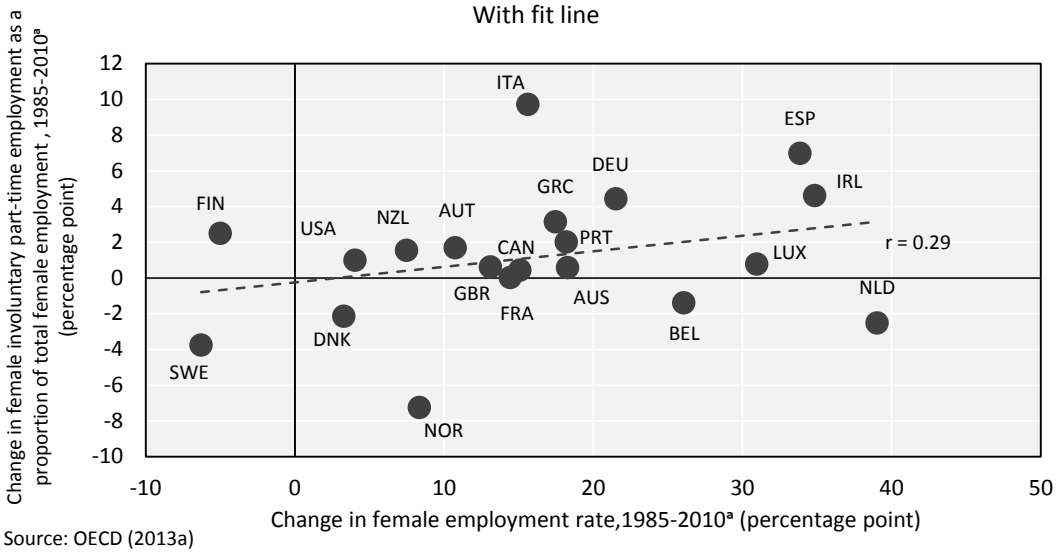
It is not easy to isolate the drivers of such an activity 'trade off' with the aggregate data used here. It is possible that many of those women that are entering the market and driving down gender gaps in headcount activity also wish to work only part-time, simultaneously inflating the gender gap in working hours. It is also possible though, that many newly encouraged women want to work full-time but are unable to find appropriate employment. The latter is supported to some degree by figure **5.8**, which plots changes in female employment rates between 1985 and 2010 against changes in the proportion of employed women that are in involuntary part-time employment. 'Involuntary' here is defined as those who are in part-time employment because they '*could not find a full-time job' (OECD, 2013f).*

Despite a few outliers – particularly Italy, Norway and the Netherlands – the correlation between changes in the two rates is moderate and positive (r = .29), that is, those countries that have seen the largest (smallest) increases in female employment between 1985 and 2010 also tend to be those with larger increases (decreases) in the proportion of employed women in involuntary part-time employment. Put differently, in countries where large numbers of women have entered the labour force, an increasing number of employed women have found themselves working shorter hours only because they could not find a full-time job. The inference then, is that labour markets struggle to fully accommodate newly mobilised female labour in cases where increases in female participation are large.

---

decreases in male weekly hours are observed in almost all countries. Changes in female hours continue to vary across countries, and in a manner similar to that seen in figure **5.7**.

Figure 5.8. **Change in the female employment rate and change in female involuntary part-time employment, 1985-2010**
With fit line



Source: OECD (2013a)
Note: * = p<0.05 ** = p<0.01 *** = p<0.001. ^ = p<0.1. See figure 4.1 for abbreviations
ª Australia, 2001-2010; Austria, 1995-2010; Finland, 1989-2010; Germany, 1991-2010; New Zealand, 1986-2010; Norway, 1989-2010; Portugal, 1986-2010; Spain, 1987-2010; Sweden, 1987-2010; United States, 1985-2009

Against this fairly complex 'trade-off' background, it is not entirely surprising that changes in the gender gap in weekly working hours are mostly only weakly related to changes in family policy provision. This is shown by the correlation coefficients at the bottom of table **5.6** (pg. 176). The dual earner childcare policy index does share a moderate and negative relation with changes in the gender gap in weekly working hours. This overall association is though driven almost entirely by a strong and negative correlation between change in public expenditure on childcare services and the gender gap in working hours – in other words, those countries with larger (smaller) increases in childcare spending over the period are more likely to see decreases (increases) in gender differences in weekly working hours. On its own, this relation makes theoretical sense. However, it is notable that associations with the remaining two childcare indicators are only weak, particularly in the case of provision for children under three.

Elsewhere, changes in the dual earner-carer leave policy index share only a weak and in fact positive relation with changes in gender differences in working hours. Likewise, there is also a weak and positive association between changes in the gender gap and the general family support policy index. Tax support for the family does share a moderate and positive correlation with the gender gap, implying that countries with increases (decreases) in family tax subsidies are more likely to see increases (decreases) in the gender gap in weekly working hours. This would make some theoretical sense, if increases in household net incomes cause a decrease in the number of hours preferred by female second earners. However, correlations for the other two component general family support indicators are

only nominal.

Fixed effects regression analysis for the gender gap in weekly working hours

Table **5.7** summarises the results of two sets of fixed effects models for the gender gap in usual weekly working hours. **A-C** are again the main or standard fixed effects regression models. **D-F** are similar but include the female employment rate as an additional control to account for the possible link between female headcount activity and working hours highlighted above[89].

Notably, the results shown in table **5.7** suggest that changes in family policy are almost entirely unrelated to changes in gender differences in working hours. The main specification – model **A** – shows exactly zero significant associations between within-country changes in family policy provision and the gender gap in weekly working hours, even if the significance level is extended to include coefficients with a p-value of less than 0.10. Furthermore, models **B** and **C** show that these overall relations with the gender gap are the product of – in all cases – very small and insignificant associations with the individual indicators of male and female working hours. In other words, **A-C** suggest that changes in policy provision are not only unrelated to movements in the gender gap, but also to changes in working hours more generally. Indeed, more widely, models **A-C** suggest changes in gender differences in working hours are independent of almost all included factors including the controls. The only significant factor is the size of the service sector, which shares a positive relation with the gender gap on account of a negative relation with female hours.

Adding the female employment rate as an additional control makes little difference to results. Consistent with the discussion above, model **D** does show a positive and significant coefficient on the female employment rate with the relationship driven mostly by a negative association with female working hours. In other words, increasing the proportion of women in employment is associated with an inflated gender gap in working hours through a decrease in women's average weekly hours[90]. However, despite this

[89] There is some danger that the female employment rate may be endogenous with working hours, as increases in the availability of part-time or shorter-hours employment may induce female participation (Thévenon, 2013). Using the female employment rate only in certain specifications allows for comparisons between models with and without the additional control and for the checking of any possible biasing effects.

[90] As discussed earlier, there are two likely mechanisms behind this: new female entrants to the labour market may demand shorter hours, reducing average female hours; and new female entrants may struggle to find full-time employment, again reducing average female working hours.

Table 5.7. **Two-way fixed effects models for the gender gap in usual weekly working hours (25-54 year olds)**

	Specification set:	Main specification			Female employment rate as an additional control		
	Model:	**A**	**B**	**C**	**D**	**E**	**F**
	Dependent variable:	Gender gap in usual weekly working hours	Male usual weekly working hours	Female usual weekly working hours	Gender gap in usual weekly working hours	Male usual weekly working hours	Female usual weekly working hours
Lag	Variable	B SE	B SE	B SE	B SE	B SE	B SE
	Dual earner-carer leave policy						
t-1	Mother-specific earnings-related leave	-0.038 (0.032)	-0.067 (0.040)	-0.029 (0.033)	-0.040 (0.025)	-0.068 (0.038) ^	-0.028 (0.035)
t	Father-specific leave	-0.016 (0.014)	0.026 (0.016)	0.041 (0.021) ^	-0.003 (0.012)	0.030 (0.018)	0.033 (0.020)
t-1	Gender-neutral earnings-related parental leave	-0.013 (0.014)	-0.011 (0.019)	0.002 (0.020)	-0.020 (0.012)	-0.013 (0.019)	0.007 (0.018)
	Dual earner childcare policy						
t-1	Children under 3 in public childcare	0.030 (0.019)	-0.005 (0.027)	-0.034 (0.020)	-0.008 (0.016)	-0.018 (0.033)	-0.010 (0.024)
t-1	Children 3-6 in public pre-primary care or primary school	-0.007 (0.007)	-0.001 (0.010)	0.006 (0.004)	-0.010 (0.008)	-0.003 (0.010)	0.007 (0.003) *
t-1	Public expenditure on childcare services	0.007 (0.086)	-0.055 (0.128)	-0.061 (0.057)	0.074 (0.075)	-0.031 (0.122)	-0.105 (0.058) ^
	General family support policy						
t	Child benefit per month for two chlldren	-0.018 (0.011)	-0.029 (0.018)	-0.011 (0.016)	-0.018 (0.011)	-0.029 (0.018)	-0.010 (0.015)
t	Tax support for families	0.011 (0.029)	-0.021 (0.047)	-0.032 (0.029)	-0.005 (0.024)	-0.026 (0.045)	-0.021 (0.032)
t-1	Flat-rate parental leave and childcare leave	0.004 (0.008)	0.000 (0.010)	-0.004 (0.008)	0.003 (0.006)	0.000 (0.010)	-0.002 (0.008)
t-1	Service Sector Size	0.091 (0.040) *	-0.001 (0.047)	-0.092 (0.025) **	0.078 (0.028) *	-0.011 (0.049)	-0.090 (0.034) *
t-1	Public Sector Size	0.052 (0.079)	-0.026 (0.067)	-0.079 (0.081)	0.090 (0.059)	0.000 (0.069)	-0.090 (0.072)
t-1	Crude birth rate	-0.037 (0.070)	-0.046 (0.052)	-0.009 (0.065)	-0.054 (0.058)	-0.059 (0.051)	-0.005 (0.051)
t-5	Female share of tertiary education students	0.038 (0.030)	0.019 (0.040)	-0.020 (0.033)	0.037 (0.032)	0.018 (0.042)	-0.019 (0.029)
t	Employment protection legislation index	-0.324 (0.302)	-0.395 (0.353)	-0.071 (0.165)	-0.527 (0.280) ^	-0.462 (0.345)	0.064 (0.146)
t-1	Female employment rate (25-54 year olds)				0.095 (0.03) **	0.035 (0.03)	-0.060 (0.03) ^
	n	416	416	416	415	415	415
	r-squared (within)	0.898	0.824	0.893	0.908	0.826	0.900

Note : * = p<0.05 ** = p<0.01 *** = p<0.001. ^ = p<0.1. Results are robust to potentially influential observations (see appendix **E** for diagnostics). USA excluded from all specifications due to missing data

Specifications :

A-C. Two-way fixed effects (country and time) with country-specific time-trends and cluster robust standard errors (CRSEs). Main specification

D-F. Two-way fixed effects (country and time) with country-specific time-trends and CRSEs. Female employment rate (25-54 year olds) as additional control.

association the coefficients on all other included variables remain more or less unchanged – in other words, even after controlling for the influence of changes in employment rates, there remains little suggestion of any significant association between changes in family policy and gender equality in working hours.

As for the gender gap in the labour force participation rate, it is possible that relations between changes in leave entitlements and gender differences in working hours may be obscured by the use of several indicators of leave based around Korpi's (2000) theoretical policy types. Table **5.8** recreates models **D-F** from table **5.7** but with leave policies measured through the alternative set of leave indicators outlined earlier in chapter **3**. Models **A-C** use 'total maternity and parental leave available to mothers' and 'childcare leave' in place of the measures of mother-specific leave, gender-neutral earnings-related parental leave and flat-rate parental and childcare leave. **D-F** add an additional squared term on total leave available to mothers.

Using the alternative set of leave policy indicators has little impact on results. Relations in models **A** and **D** are more or less identical to those in **D** in table **5.7**, with none of the coefficients on the family policy indicators significant at either the 5% or 10% level. Notably, **B-C** and **E-F** do show positive significant relations between both father-specific leave and childcare leave and the individual male and female working hours indicators, but coefficients are almost exactly equal for both genders with the result no clear association with the gender gap. As for the earlier models, then, both **A-C** and **D-F** provide no clear evidence of any link between changes in family policy provision and gender differences in the quantity of hours worked.

Summary

Taken together, results from this section suggest family policies have little or no influence over gender differences in average working hours. There is no solid evidence that altering dual earner leave and childcare policies can promote equality in weekly working hours, and likewise no indication that increasing general family support constrains women's hours and inflates gender differences in working time. It is worth pointing out again that the data used here are for 25-54 year olds only – in the last section, clear relations were similarly scarce when participation rates were measured for the broader age group. However, results continue to conflict with other 'over time' studies that also use working hours for 25-54 year olds (Jaumotte, 2003; Akgunduz and Plantenga, 2012; Thévenon,

Table 5.8. **Alternative two-way fixed effects models for the gender gap in usual weekly working hours (25-54 year olds)**

	Specification set:	Alternative measures of leave policy, plus female employment as a control						Alternative measures of leave policy with squared term, plus female employment as a control					
	Model:	**A**		**B**		**C**		**D**		**E**		**F**	
	Dependent variable:	Gender gap in usual weekly working hours		Male usual weekly working hours		Female usual weekly working hours		Gender gap in usual weekly working hours		Male usual weekly working hours		Female usual weekly working hours	
Lag	Variable	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE
	Dual earner/carer leave policy												
t-1	Mother-specific earnings-related leave												
t	Father-specific leave	0.002	(0.015)	0.048	(0.019) *	0.046	(0.022) ^	0.002	(0.015)	0.049	(0.020) *	0.046	(0.022) *
t-1	Gender-neutral earnings-related parental leave												
	Dual earner childcare policy												
t-1	Children under 3 in public childcare	-0.006	(0.017)	-0.009	(0.034)	-0.003	(0.024)	-0.006	(0.017)	-0.010	(0.034)	-0.005	(0.024)
t-1	Children 3-6 in public pre-primary care or primary school	-0.009	(0.008)	0.000	(0.010)	0.009	(0.004) *	-0.009	(0.008)	-0.001	(0.011)	0.009	(0.004) *
t-1	Public expenditure on childcare services	0.066	(0.073)	-0.036	(0.112)	-0.102	(0.055) ^	0.066	(0.073)	-0.037	(0.112)	-0.103	(0.055) ^
	General family support policy												
t	Child benefit per month for two chlldren	-0.014	(0.013)	-0.021	(0.023)	-0.006	(0.018)	-0.014	(0.014)	-0.022	(0.026)	-0.009	(0.019)
t	Tax support for families	0.005	(0.025)	-0.021	(0.040)	-0.026	(0.027)	0.005	(0.026)	-0.021	(0.040)	-0.026	(0.028)
t-1	Flat-rate parental leave and childcare leave												
	Alternative measures of leave policy												
t-1	Total maternity and parental leave available to mothers	-0.010	(0.011)	-0.023	(0.017)	-0.013	(0.013)	-0.006	(0.037)	-0.034	(0.045)	-0.028	(0.029)
t-1	(Total maternity and parental leave available to mothers)^2							0.000	(0.000)	0.000	(0.001)	0.000	(0.000)
t-1	Childcare leave	0.002	(0.005)	0.009	(0.004) *	0.007	(0.003) ^	0.002	(0.004)	0.008	(0.003) *	0.006	(0.003) ^
t-1	Service Sector Size	0.079	(0.029) *	-0.008	(0.051)	-0.087	(0.033) *	0.079	(0.029) *	-0.007	(0.051)	-0.085	(0.032) *
t-1	Public Sector Size	0.093	(0.058)	0.009	(0.068)	-0.084	(0.074)	0.093	(0.058)	0.009	(0.066)	-0.084	(0.072)
t-1	Crude birth rate	-0.062	(0.058)	-0.100	(0.063)	-0.038	(0.054)	-0.062	(0.058)	-0.101	(0.062)	-0.039	(0.054)
t-5	Female share of tertiary education students	0.038	(0.030)	0.020	(0.041)	-0.018	(0.028)	0.038	(0.029)	0.019	(0.038)	-0.020	(0.027)
t	Employment protection legislation index	-0.430	(0.282)	-0.378	(0.382)	0.051	(0.149)	-0.422	(0.306)	-0.397	(0.390)	0.025	(0.138)
t-1	Female employment rate (25-54 year olds)	0.092	(0.026) **	0.034	(0.031)	-0.057	(0.031) ^	0.091	(0.027) **	0.035	(0.030)	-0.057	(0.031) ^
	Joint F-test on total leave available to mothers and its square (d.f)							0.660	(2, 18)	0.930	(2, 18)	0.700	(2, 18)
	n	415		415		415		415		415		415	
	r-squared (within)	0.906		0.827		0.900		0.906		0.827		0.901	

Note : * = p<0.05 ** = p<0.01. ^ = p<0.1. The joint F-test on total maternity and parental leave available to mothers and its square tests the null that the two are jointly equal to zero. Results are robust to potentially influential observations (see appendix **E** for diagnostics). USA excluded from all specifications due to missing data.

Specifications :

A-C. Two-way fixed effects (country and time) with country-specific time-trends and CRSEs. Leave indicators simplified into 'Total effective weeks of maternity and parental leave available to mothers', plus 'Effective weeks of father-specific leave' and 'Effective weeks of childcare leave'.

D-F. Two-way fixed effects (country and time) with country-specific time-trends and CRSEs. Leave indicators simplified into 'Total effective weeks of maternity and parental leave available to mothers' and its sqaure, plus 'Effective weeks of father-specific leave' and 'Effective weeks of childcare leave'.

2013; Thévenon and Solaz, 2013) and that find, for example, that leave policies reduce gender differences in working hours (Akgunduz and Plantenga, 2012) or that the provision of childcare promotes female full-time employment (Jaumotte, 2003). As touched on at the end of section **5.3**, there may be technical reasons for differences in results (see the following section). Nonetheless, the major inference here is that changes in family policies do not appear important for changes in gender equality in working hours.

5.5. Discussion

Chapter **4** showed large and widespread changes in the provision of family policy across the twenty sample countries over the years between 1985 and 2010. According to both theories of family policy and the existing empirical literature, these developments should lead to changes in levels of gender equality in labour market activity (e.g. Ruhm, 1998; Korpi, 2000; Jaumotte, 2003; Mandel and Semyonov, 2006; Ferrarini, 2006; Korpi, 2010; Akgunduz and Plantenga, 2012; Nieuwenhuis et al, 2012; Korpi et al, 2013; Thévenon, 2013; Thévenon and Solaz, 2013). Those countries that have expanded dual earner policy should, all else equal, see a shift towards equal participation, mostly through the promotion of female activity. These gains may be offset somewhat in those countries that have also expanded general family support as these policies may create disincentives for second earning. Nevertheless, theory and evidence suggests that all countries should see at least some change in the relative level of male and female labour market activity on account of developments in policy provision.

At face value, broad trends and developments in gender equality in labour market activity are generally consistent with these expectations. Trends shown in sections **5.3** and **5.4** indicate that all of the twenty sample countries have seen at least some increase in equality in economic activity over the years between 1985 and 2010. These widespread gains are concentrated mostly on the labour force participation rate, with developments in equality in working hours fairly mixed. Nonetheless, decreases in gender differences in economic activity appear almost universal over the years examined, albeit to varying extents between countries. This of course provides little direct evidence of any damaging effect of general support provision. Broadly, though, for most countries the period 1985-2010 was one in which a general expansion of dual earner policy coincides with considerable progress towards gender equality in labour market attainment.

Relations are a little less clear-cut, however, once the size and timing of changes in policy

and equality are taken into account. The two descriptive analyses, for instance, suggests links between changes in dual earner policy and gender differences in labour market activity are either fairly weak or conditional. Put simply, countries with large changes in dual earner-carer leave policies do not necessarily see larger gains in equality in labour market activity – and, indeed, many of the most substantial gains are observed in countries such as Ireland and Spain where changes to leave entitlements are comparatively small – while such a relation with changes in dual earner childcare provision only becomes evident once the experience of the Scandinavia countries is discounted. The descriptive analyses also show that those countries that have expanded general family support policy tend to see larger *decreases* in gender differences in activity, an association that runs in contrast to the theorised constraining effect of general family support provision. These descriptive analyses are admittedly fairly crude, but offer only limited initial support for the theorised effects of family policy on economic activity nonetheless.

Results from the more formal regression analyses, meanwhile, are mixed. Consistent with findings from the descriptive analysis, estimates suggest that within-country changes in family policy are generally unrelated to observed shifts in gender differences in working hours. Likewise, with the exception of public childcare for children under three, changes in policy also appear largely irrelevant to movements in participation rates amongst the broader 25-54 year old age group. Certain policies do though seem to influence gender gaps in activity once the regression models concentrate specifically on participation amongst men and women aged 25-34. There remains no indication that general family support policies damage female activity, but there is evidence to suggest that changes in leave entitlements – specifically, dual earner mother-specific and gender-neutral earnings related leave policies – can in addition to public childcare for children under three help close gender gaps in labour participation rates. In other words, findings provide support for the theorised effects of dual earner policy, but only when looking at gender differences in headcount activity amongst men and women of 'prime' childbearing age.

In broad terms then, overarching inferences from this chapter are not too dissimilar to those from many existing 'over time' comparative family policy studies (e.g. Winegarden and Bracy, 1995; Ruhm, 1998; Jaumotte, 2003; Ferrarini, 2006; Akgunduz and Plantenga, 2012; Thévenon, 2013; Thévenon and Solaz, 2013). Findings suggest that, as expected, increasing or expanding leave entitlements for mothers and public childcare provisions may encourage female economic activity and help close gender gaps in labour participation. On a couple of occasions, results from this chapter are able to add a little

extra detail to established conclusions. For example, a particularly notable finding from section **5.3** was that the positive effects of general leave on female activity appear driven solely by changes in dual earner-type entitlements. This fits well with the theory (Korpi, 2000; Korpi, 2010; Korpi et al, 2013) of course, but is relatively novel since existing comparative family policy studies that use Korpi's distinction between 'dual earner' and 'general family support'-type leaves measure both only within broader composite policy indices (Korpi 2000, Ferrarini, 2006, Mischke, 2011, Korpi et al, 2013). Broadly speaking though, the general conclusion remains that leave and childcare policies represent important tools for the promotion of gender equality in economic activity.

Yet, it is noticeable that results from this chapter are considerably less conclusive than those from much of the literature. Of particular note is the almost complete absence here of clear and significant associations between changes in leave and childcare policies and gender differences in economic activity – in terms of both market participation and working hours – when looking at the broader 25-54 year old age group. To reiterate, it is not particularly surprising that links with leave and childcare provisions should be stronger and clearer when looking at activity amongst men and women of 'prime' childbearing age. This makes sense in terms of the theory (see chapter **3.3**), and is consistent with existing evidence – both Ruhm (1998) and Akgunduz and Plantenga (2012), for example, also find that the effects of changes in leave are concentrated mostly on women aged 25-34. However, as noted earlier, most other 'over time' family policy studies use data for a broader age group – either in combination with a younger and more specific cohort (e.g. Ruhm, 1998; Akgunduz and Plantenga, 2012) or in several cases exclusively (e.g. Jaumotte, 2003; Ferrarini, 2006; Nieuwenhuis et al, 2012; see table **A.1** in appendix **A** (pp. 314-316)) – and continue to find statistically significant associations between policy and economic activity. Jaumotte (2003), for example, finds that expansions in both parental leave programmes and public childcare spending are associated with increases in participation rates amongst women aged 25-54. Likewise, Akgunduz and Plantenga (2012) find that extending leave entitlements for mothers promotes the average working hours of female employees aged 25-54.

It is possible that differences in results are a consequence of decisions around sampling and operationalisation. In particular, it is feasible that the specific sample used here – and especially the time period selected – restricts the number of clear and significant associations. Much of the literature uses an earlier or longer time period[91], and as a result

[91] Winegarden and Bracy (1995): 1959-1989 (at ten-year intervals); Ruhm (1998): 1969-1993; Jaumotte (2003): 1985-1999; Ferrarini (2006): 1970-2000; Akgunduz and Plantenga (2012): 1970-

capture different within-country variations in policy and labour market outcomes. That said, the sample used in this thesis remains relatively lengthy and contains a good deal of variation in both family policy provision and in economic activity (see chapter **4** and earlier in this chapter). If otherwise established findings are not visible in this study purely because of the sample used, it surely brings doubt as to the external validity of existing results.

It is also possible though, that there are technical explanations for differences in results. As noted earlier in chapter **3**, the statistical approach used across the regression models in this chapter could be described as fairly 'conservative'. The use of 'gender gaps' as dependent variables, for example, demands that policies influence gender differences in outcomes and not just female activity alone. A number of other existing 'over time' studies (e.g. Winegarden and Bracy, 1995; Jaumotte, 2003; Ferrarini, 2006; Nieuwenhuis et al, 2012) use measures that capture female employment outcomes in isolation. This may place fewer demands on the data, but also means that these studies risk producing misleading findings due to bias from wider determinants of variation in economic activity (see chapter **3.3**)[92].

Likewise, the use of cluster robust standard errors (CRSEs) may reduce the likelihood of finding (overly optimistic) statistically significant results by correcting standard errors for serially correlated or heteroscedastic residuals (Rogers, 1993; Beck and Katz, 1995: 636; Angrist and Pischke, 2009: 312-313; see chapter **3.4** and appendix **B.4** (pp. 330-332)). Notably, as discussed in chapter **3**, many existing 'over time' comparative studies do not appear to use CRSEs or offer any alternative correction for serial correlation. The difference in technical specification may seem only small, but may have non-trivial effects on the significance tests on estimated relations.

Tables **D.1** and **D.2** in appendix **D** (pg. 378 and pg. 379) illustrate the impact of correcting standard errors for serial correlation and panel heteroscedasticity. These alternative models are exact replicas of models shown in sections **5.3** and **5.4** for the gender gap in participation rates (25-54 year olds) and the gap in weekly working hours (25-54 year

---

2010; Thévenon (2013): 1980-2007; Thévenon and Solaz (2013): 1970-2010.

[92] The danger here is well illustrated by results shown earlier in this chapter. Table **5.4** in section **5.3**, for example, shows a positive and significant relation between the female participation rate (25-54 year olds) and changes in total maternity and parental leave available to mothers. Importantly though, it also shows a similar relation with the equivalent male rate. Accordingly, the two produce no clear association with movements in the gender gap in participation rate for 25-54 year olds, with one possible inference being that both coefficients are biased by some external influence on the labour force participation rate for 25-54 year olds more generally.

olds) – so, accordingly, the regression coefficients themselves are identical to those shown in the earlier tables – but importantly use normal OLS standard errors in place of CRSEs. In almost all cases, the OLS standard errors are smaller than the CRSEs used in the models shown throughout this chapter. As a result, many more estimates are found to be statistically significant. More importantly, perhaps, inferences from these alternative models are – in certain cases at least – closer to those from the existing 'over time' family policy literature. For instance, table **D.1** shows negative and significant associations between changes in leave and the gender gap in labour force participation rates for 25-54 year olds. Likewise, table **D.2** suggests that both dual earner leave policies and childcare provisions for slightly older children may help close gender differences in weekly working hours. Yet, the validity of these alternative models is questionable, as it is known from the tests shown in appendix **B.4** (pp. 330-332) that residuals suffer serial correlation and that standard errors should be corrected accordingly. Of course, without direct access to the exact data used, it cannot be known whether the models used in other existing studies suffer from the same issues. In this case, however, far greater weight should be placed on the results presented throughout this chapter that use CRSEs and that, unfortunately, show very few significant relations between changes in policy and gender differences in activity amongst 25-54 year olds.

There may be good reasons then, for the failure of this chapter to match the literature in finding clear and significant associations between changes in policy and gender differences in economic activity amongst the broader 25-54 year old age group. These differences in findings are important of course, because in at least some cases they add a certain level of uncertainty to previously well established conclusions. As noted above, any discrepancies do not lead to huge changes in broad inferences around the effects of leave and childcare policies on gender difference in labour market participation – findings for the younger age groups continue to suggest that these policies may represent useful tools for the promotion of gender equality in activity rates. Even so, it remains notable that results here suggest few policies have any kind of clear impact on the broader gender gap. If nothing else, this implies that family policies may be slightly less effective at closing *overall* gender gaps than the existing literature might suggest, in terms of direct impact at least.

More importantly, perhaps, results here do add considerable uncertainty to existing conclusions around the effects of family policy on working hours. It should be emphasised at this point that the findings presented in this single chapter certainly do not 'disprove' those from existing studies – there are as touched on above several possible reasons for

differences in findings, including the sample and operationalisation. It is also worth pointing out again that data on working hours are available only for the 25-54 year old age group – it remains possible that links with policy would be stronger or clearer if the analysis could concentrate on hours amongst a younger or more specific age group. Nonetheless, based on the available information, there is little in this chapter to support the suggestion in the literature that changes in leave and childcare policies can reduce gender differences in average weekly working hours.

Finally, it should not be forgotten that results from across the chapter – regardless of the exact dependent variable or model specification used – provide little support for the argument that general family support provisions are likely to damage female labour supply (Korpi, 2000; Jaumotte, 2003; Ferrarini, 2006; Korpi, 2010; Nieuwenhuis et al, 2012; Korpi et al, 2013). Indeed, the broad inference here is that general family support policies are generally neutral with respect to gender gaps in economic activity. This is important for understandings around gender differences in employment of course, but is also noteworthy because these policies often have wider objectives outside of employment. More specifically, both child benefit and family-related tax subsidies are used in many countries as a central mechanism for the reduction of child poverty (Oxley et al, 1999; Pressman, 2011; Gornick and Jäntti, 2012), while flat-rate 'general family support' leave policies are generally introduced with the intention of assisting families with the additional responsibilities associated with dependent children. It remains notable in the latter case that these 'general family support' leaves seem to do nothing to *promote* female economic activity. Nonetheless, the important point in terms of the theory is that changes in general family support policies generally appear to do no harm to female economic activity. Accordingly, the suggestion here is that these policies may continue to fulfil their wider functions without fear of detrimental side effects on women's market participation.

In summary then, this chapter produces partial support for the theorised effects of leave and childcare policies on gender differences in labour market activity. Results are slightly less clear-cut than those in much of the literature – perhaps on account of the fairly 'conservative' approach used – and in particular provide no indication that changes in policy can influence gender gaps in average working hours. There is also nothing here to suggest that changes in general family support provisions damage female labour supply. Nonetheless, the overarching conclusion remains that certain leave policies – specifically, dual earner-carer-type leaves available to mothers – and public childcare services for children aged less than three continue to represent useful and effective instruments for

the promotion of gender equality in economic activity.

That said, the positive effects of these certain dual earner leave and childcare policies might not come without costs. More specifically, and as discussed earlier in chapter **2**, it is possible that both policies may inadvertently encourage job segregation and reinforce 'glass ceilings' on women's careers, with leave entitlements particularly likely to damage women's access to senior positions and top wages. These possible 'trade off' effects are examined in the next chapter, which concentrates on associations between changes in family policy provision and gender job segregation and equality in occupational attainment.

Chapter 6. Do changes in family policy influence women's relative position within the labour market? Descriptive and time-series cross-section regression analyses of links between changes in family policy and gender job segregation and equality in occupational attainment.

Theories of family policy suggest that policy provision may – in addition to any influence over gender equality in labour market activity – also play at least some role in determining variation in levels of gender job segregation and inequalities in occupational attainment (Ruhm, 1998; Blau et al, 2001; Mandel and Semyonov, 2005; Mandel and Semyonov, 2006; Pettit and Hook, 2009; Hegewisch and Gornick, 2011; Akgunduz and Plantenga, 2012; Thévenon and Solaz, 2013). More specifically, several authors – most notably Mandel and Semyonov (2005, 2006) – argue that certain family policies carry 'trade off' effects that increase the concentration of women in 'sheltered' labour markets and lead to a hardening of the 'glass ceiling' on women's careers. Combined with the theorised beneficial effects of the same policies on gender differences in economic activity, these trade off effects lead to what is termed the 'family policy paradox' whereby policy provision at once promotes and damages gender equality in the labour market (Mandel and Semyonov, 2005; Mandel and Semyonov, 2006).

Much of the theory around family policy trade offs concentrates on the effects of leave entitlements on women's relative career attainment. The central issue here is that legislated mother-specific leaves – and also sharable leaves, to the extent take-up is dominated by the mother – may allow women to temporarily exit the labour force for a longer period of time than would be the case without a statutory entitlement. This may have a two-fold effect women's ability to compete with their male counterparts. Firstly, the extended period of absence may intensify the depreciation of human capital associated with childbirth and will certainly – if taken – reduce experience (Blau et al, 2001; Hegewisch and Gornick, 2011: 124). The effects on productivity may be offset somewhat by the retention of firm-specific skills and training, but there remains at least some possibility that leaves could reduce female human capital. Secondly, the leave may rationalise statistical discrimination on account of an increase in the relative non-wage costs – actual or perceived – of female employment, in turn encouraging risk-averse employers to avoid hiring women or to self-compensate through a reduction in the wages offered to female employees (Ruhm, 1998; Mandel and Semyonov, 2006; Hegewisch and Gornick, 2011: 125). The effects of both are likely to be particularly severe for women's access to highly skilled positions at the top-end of the earnings distribution where roles

require extensive experience and candidates for 'maternity cover' are scarce (Shalev, 2008; Mandel, 2011; Mandel, 2012). Thus, introducing or extending leaves for mothers may cause particular damage to women's ability to reach high-level positions and top earnings, and additionally may help drive female employees into 'female-friendly' – typically, low-skilled – occupations.

The side effects of leaves entitlements may be at least partially offset by the provision father-specific leave or sharable leaves that are structured so as to encourage male take-up. Indeed, if the length and take-up of leaves were equal for men and women it follows that the effects of depreciation and discrimination would also be identical, while leaves for fathers may also encourage some redistribution of domestic labour within the household (Nepomnyaschy and Waldfogel, 2007; Tanaka and Waldfogel, 2007). However, this is dependent on the use of these schemes by fathers and – in the case of statistical discrimination – employers' perceptions of which parents are likely to take leave. Given low observed levels of male participation in sharable leave programmes (Haas, 2003: 13; Naldini and Saraceno, 2008: 740; Haataja, 2009; Haas and Rostgaard, 2011; Naumann et al, 2013), it is possible and perhaps even likely that any trade off effects associated with leaves will be blind to the 'type' of leave offered. Rather, any adverse effects of leave may correspond only to the total length of leave on offer to mothers.

Trade-off effects associated with dual earner childcare policies receive slightly less attention than those related to leave provisions. Nonetheless, Mandel and Semyonov (2005, 2006) outline a couple mechanisms through which public childcare may harm women's relative position within the labour market. Most prominently, they suggest an expansion in general public care services may act only to transfer gendered divisions of labour from the domestic to the paid sector, with many women 'channelled' into segregated and isolated labour markets with only limited scope for career progression (Mandel and Semyonov, 2005, 2006). Importantly, as governments are typically 'responsible' employers they are less likely to practice statistical discrimination and perhaps more likely to promote women to senior positions (Mandel, 2012: 244). However, top pay bands also tend to be relatively low in the public care sector so – to the extent that women are drawn into such jobs – an expansion in government care services may restrict women's ability to attain high wages (Shalev, 2008: 431; Mandel, 2011: 171). Accordingly, an expansion of public childcare provision may lead to some increase in gender job segregation and perhaps also a reduction in women's relative access to high earning positions.

Existing evidence on these policy trade off effects relies mostly on cross-sectional associations. Broadly, women's share of managerial employment and representation amongst the highest earnings bands tends to be lower in countries that provide longer leaves (Mandel and Semyonov, 2006; Mandel, 2009; Mandel, 2012). Conversely, occupation segregation and gender pay gaps are generally higher in countries that are generous providers of both leave and public childcare policy (Mandel and Semyonov, 2005; Mandel and Semyonov, 2006; Pettit and Hook, 2009). More generally, the relative position of women once inside the labour force appears more limited in countries that are '*characterised by progressive and developed welfare policies'* (Mandel and Semyonov, 2006: 1910).

Evidence from the emerging 'over time' comparative literature is more limited. Two studies (Ruhm, 1998; Thévenon and Solaz, 2013) explore links between changes in leave entitlements and the gender pay gap only. Both find that extensions in the length of leave inflate the gender pay gap. Akgunduz and Plantenga (2012) go a little further and explore the influence of changes in leave on the share of women in 'high-level' managerial and professional occupations, as well as on the gender pay gap. They find that increases in leave decrease the female share of high status managerial and professional employment – although the relation is significant only at the 10% level – but notably also find no statistically significant relation between changes in leave and the gender pay gap. These three studies alone, however, represent the extent of empirical comparative knowledge on links between *changes* in family policy and gender job segregation and equality in occupational attainment.

This chapter builds on these few studies by examining associations between changes in family policy and changes in job segregation and women's relative career attainment across the twenty sample countries and years 1985-2010. More specifically, it uses both descriptive and regression techniques to assess how the various changes in policy outlined earlier in chapter **4** impact on measures of the relative concentration of women in 'female-typed' jobs and on women's access high status and highly paid positions. Thus, it concentrates mostly on providing answers to the thesis' second research question – how do changes in family policy relate to changes in gender job segregation and gender equality in occupational attainment?

The structure of this chapter is similar to that used in chapter **5**. The next section – **6.1** – offers a brief review of the data and methods used, while **6.2** provides a short overview of cross-sectional associations between family policy and the measures of segregation and

occupational attainment. **6.3**-**6.5** form the core of the chapter, with each containing both descriptive and regression analyses of relations between changes in policy and changes in gender differences in outcomes. **6.3** covers links with changes in the gender gap in the proportion of employees in 'female-type' occupations, **6.4** the female share of managerial employment, and **6.5** the gender gap in the proportion of employees with top-quintile earnings. Lastly, **6.6** brings together the results from the preceding sections, discusses findings in light of the literature, and concludes.

6.1. Data and methods

This chapter again explores relations through the analysis of country-level measures of both family policy and gender jobs segregation and equality in occupational attainment. Like chapter **5**, family policies are measured primarily through the nine main indicators described earlier in chapter **3.2**, with the support of the three policy indices in the more descriptive parts of the chapter. In this case though, because it is feasible that any leave-driven trade off effects will be determined as much by the total length of leave available to mothers as by the type of leave on offer, considerable emphasis is also placed on the alternative measures of leave, and in particular on the indicator 'total effective maternity and parental leave available to mothers'. Gender segregation and women's relative career attainment are captured by the gender gap in the proportion of employees in 'female-type' occupations, the female share of managerial employment, and the gender gap in the proportion of employees with top quintile annual earnings. Data for the first two come from Eurostat and the ILO, where comparable series are available from 1992 onwards. Data for the third are extracted from the Luxembourg Income Study (LIS) and are available from 1985. Unfortunately, though, as the LIS data are produced only in waves, this latter indicator is measured at five-year intervals only (see chapter **3.3** for more detail).

It is acknowledged that the measures of segregation and attainment used in this chapter are not comprehensive. As noted in chapter **3.3**, the concept of gender job segregation and equality in occupation attainment is fairly wide and abstract, particularly when compared to the more easily quantifiable notion of equality in labour market activity as covered in the previous chapter. For continuity and comparability, the indicators selected here generally follow those that are the focus of the theory and that are used by Mandel (2009; 2012) and others (Mandel and Semyonov, 2005; 2006; Akgunduz and Plantenga, 2012). There are though certainly other aspects of, or perspective on, women's position inside the labour market that are not covered by these three measures.

It should also be noted that the ability of these indicators to properly capture the identified aspects of equality is hindered somewhat by the availability of comparable data. As detailed in chapter **3.3**, the first two indicators used here – the gender gap in the proportion of employees in 'female-type' occupations, and the female share of managerial employment – are only able to use data based on the fairly broad one-digit ISCO88 categories. As a result, they reflect women's relative representation in wide rather than specific occupations. Moreover, as data for the first two measures are available only from 1992 onwards, both fully ignore observed variations in family policy prior this point. The use of five-year intervals for the third indicator – the gender gap in top quintile earnings – meanwhile, reduces sample size and disregards subtler variations in policy and equality within the five-year periods. Nonetheless, these data and indicators are considered the best and most relevant available.

Analysis is again conducted primarily through fixed effects multiple linear regression, albeit with the support of fairly detailed descriptions of trends and changes in the various measures of segregation and attainment plus simple bivariate analyses of crude links with changes in policy provision. The specifications of the regression models themselves are similar to those in chapter **5**. Each indicator of equality is examined through its own set of regression models with – in each case other than the female share of managers – the gender gap as the main dependent variable but with all models replicated using the equivalent individual male and female indicators as dependent variables. Unfortunately, due to the way it is constructed, it is not possible to split the female share of managers into individual male and female indicators. As a result, models here use only the headline 'equality' indicator as a dependent variable. The key independent variables across models are again the nine main measures of family policy, although as noted above certain models use the alternative set of leave indicators. Additionally, each model also includes several control variables to account for alternative influences on gender job segregation and occupation attainment. Details of these controls were given earlier in chapter **3.4**.

All models again use two-way fixed effects – that is, both country and time fixed effects – to account for unobserved unit and period effects. As noted at several points during the thesis, this has the upshot of producing estimates based only on within-country variation – that is, changes – in the included variables only. All models also use country-specific time trends to de-trend the variables and reduce the likelihood of spurious relations. Lastly, models of both the proportion of employees in 'female-type' occupations and the female share of managerial employment use one-way cluster robust standard errors (CRSEs) to

correct for non-spherical errors caused by panel heteroscedasticity and serial correlation. It should be noted, though, that models for the gender gap in top quintile earnings use the normal OLS standard errors rather than CRSEs. This is because, in this instance, the CRSEs are at times smaller than the OLS standard errors, possibly on account of the relatively small number of observations used in these models (Angrist and Pischke, 2009: 319; Wooldridge, 2010: 311; see table **D.3** in appendix **D** (pg. 380)). Tests shown in appendix **B.4** do suggest that models for the gender gap in top quintile earnings may suffer from both panel heteroscedasticity and serial correlation, so the absence of any correction for these issues should be taken into account when interpreting results[93].

6.2. Cross-sectional associations

As touched on in the introduction to this chapter, the bulk of existing evidence on any adverse effects of family policy on women's position within the labour market relies mostly on cross-sectional data and associations (e.g. Mandel and Semyonov, 2005; Mandel and Semyonov, 2006; Mandel, 2009; Pettit and Hook, 2009; Mandel, 2012). Before moving on to explore the effects of *changes* in policy on women's careers, it is worth briefly re-examining these cross-sectional associations using the data and indicators used in this chapter. This relatively short section uses charts and a series of Pearson's R correlation coefficients to explore cross-sectional links between family policy and this chapter's three measures of segregation and occupational attainment in 1998, a mid-point in the series, starting first with the gender gap in the proportion of employees in 'female-type' occupations.

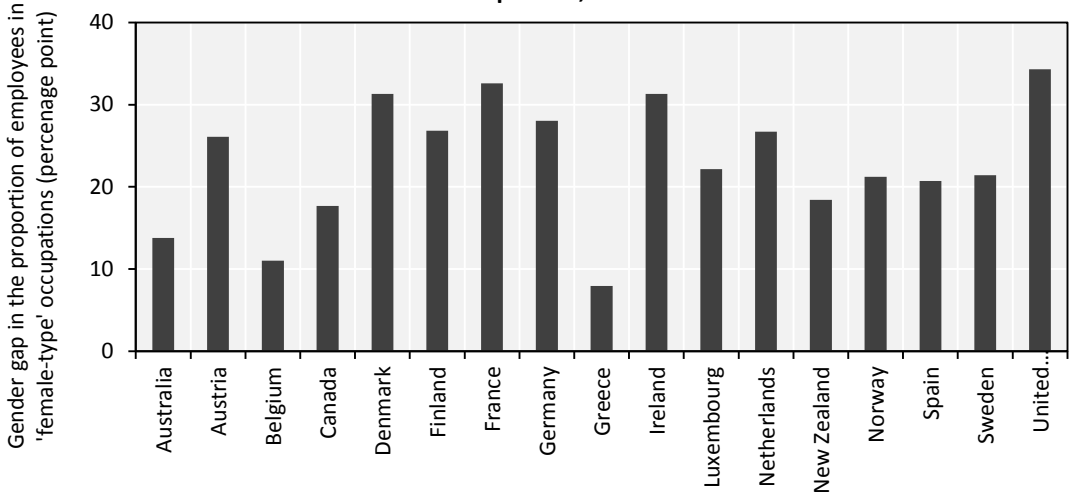
Gender gap in the proportion of employees in 'female-type' occupations

The relative concentration of female employees in 'female-typed' occupations varies considerably across countries. Figure **6.1** shows the gender gap in the proportion of employees in 'female-type' jobs, by country and for the year 1998.

The gender gap ranges from as low as just under 8 percentage points in Greece to as high as 34.3 percentage points in the United Kingdom, with the gap in most countries standing somewhere between 15 and 30 points. Notably, the figure shows that degrees of job segregation cut across the usual country clusters. The gender gap is as expected generally fairly large in the Scandinavian countries, but the highest levels of segregation are seen in

[93] Alternative methods of correcting for panel heteroscedasticity and serial correlation were explored but in this instance the OLS standard errors appear the most conservative.

Figure 6.1. **Gender gap in the proportion of employees in 'female-type' occupations, 1998**



Note: data for Italy, Portugal and the United States are missing

conservative (France and Ireland) and liberal-type states (the United Kingdom). Likewise, the smallest gaps come from a diverse range of countries, with Australia, Belgium and Greece all registering gaps of less than 15 percentage points.

Despite these varied patterns of segregation, cross-sectional associations between policy provision and the gender gap in the proportion of employees in 'female-type' jobs are mostly in line with the theory and existing evidence. Table **6.1** (overleaf) shows how levels of policy provision correlate with the three indicators of gender segregation and differences in occupational attainment, in 1998. Correlations for the gender gap in 'female-type' employment are shown in panel **A**, while those for the female share of managers and the gender gap in top quintile earnings – discussed in the following subsections – are in **B** and **C**, respectively.

Most immediately, panel **A** in table **6.1** shows that the gender gap in 'female-type' employment is positively if moderately correlated with the provision of dual earner childcare policy. Put differently, the relative proportion of female employees that work in 'female-type' occupations tends to be higher in those countries that are more generous providers of all types of public childcare policy. This fits well with Mandel and Semyonov's (2006) suggestion that public childcare provision serves only to produce 'feminine occupational niches' (2006: 16) through the transfer of female care work to the paid sector.

Table 6.1. **Correlations between measures of family policy and indicators of gender job segregation and equality in occupational attainment, 1998**

	Pearson's R correlation coefficients		
	A Gender gap in the proportion of employees in 'female-type' occupations[a]	**B** Female share of employment as mangers, legislators and senior officials[b]	**C** Gender gap in the proportion of employees with top quintile earnings[d]
Dual earner-carer leave policy index	0.04	-0.38	0.30
Mother-specific earnings-related leave, in effective weeks	0.17	-0.38	-0.25
Father-specific leave, in effective weeks	-0.14	-0.10	0.27
Gender-neutral earnings-related parental leave, in effective weeks	0.17	-0.38	-0.25
Dual earner childcare policy index	0.38	-0.15	0.27
Proportion of children under three years of age in publicly supported child care	0.15	-0.29	0.41
Proportion of children between three and six years of age in publicly run pre-primary education or in primary school	0.36	0.34	-0.34
Public expenditure on childcare services per child aged under six	0.42 ^	-0.36	0.45 ^
General family support policy index	0.33	-0.15	-0.03
Child benefit per month for two chlldren, as a proportion of average earnings	0.34	-0.04	0.27
Tax subsidy for the family	0.13	-0.03	-0.26
Flat-rate parental leave and childcare leave available to mothers, in effective weeks	0.35	-0.30	-0.10
Total maternity and parental leave available to mothers	0.28	-0.14	0.27
n	17	18	16

Note: * = p<0.05 ** = p<0.01 *** = p<0.001. ^ = p<0.1

a. The United States is missing. Italy and Portugal excluded as there are no 'female-type' occupations in these countries.

b. United States is missing. Italy excluded due to inconsistent data.

c. New Zealand is missing.

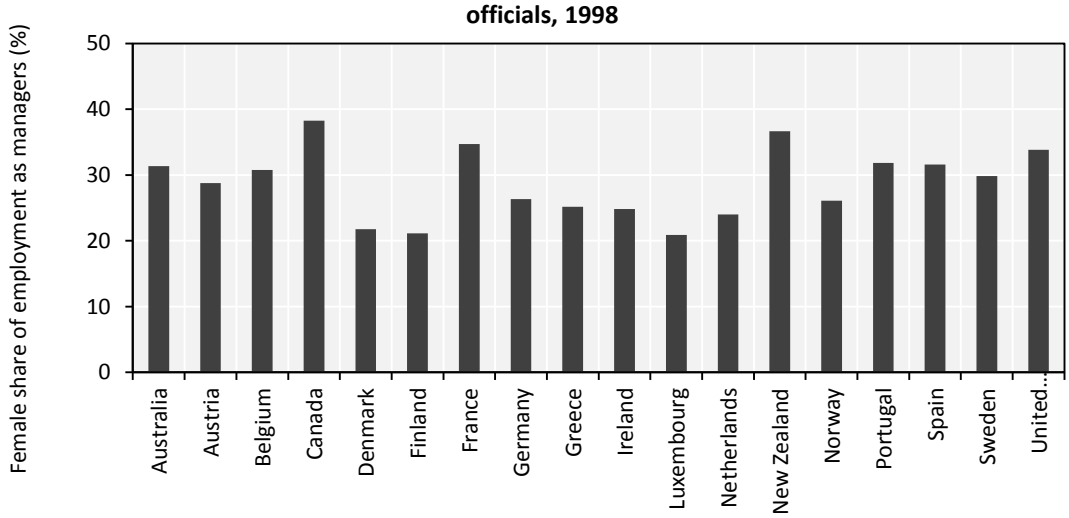
d. Five year (1995-1999) mean average. France, Germany, New Zealand and Portugal are missing.

The gender gap in the proportion of employees in 'female-type' occupations also shares a positive correlation with the general family support policy index, at least partly on account of a moderate and positive association with the provision of flat-rate parental and childcare leave. This makes some theoretical sense – if these long leaves drive gender discrimination, women may find themselves attracted to feminised occupations where conditions are more suited to their needs as mothers (Mandel and Semyonov, 2006: 1917). Notably, though, there is little evidence of any such association with dual earner-carer leave policy – both the policy index and all three individual dual earner-carer leave policy indicators appear generally unrelated to the relative proportion of female employees in 'female-type' occupations. The tentative suggestion here then, is that different *types* of leave may have different influences on gender segregation. Nonetheless, the positive correlation between the gender gap and *total* maternity and parental leave – shown in the final row in panel **A** – implies that the provision of leave in general remains associated with inflated gender job segregation.

Female share of managerial employment

Female representation amongst managers also varies fairly substantially across countries. This is shown by figure **6.2**, which plots the female share of managers, by country and for the year 1998.

Figure 6.2. **Female share of employment as managers, legislators and senior officials, 1998**



Note: data for Italy and the United States are missing

Cross-national differences in the female share of managers offer fairly immediate support for the argument that certain policies may damage women's relative career attainment. The female share is generally lowest in the Scandinavian countries[94], albeit with the partial exception of Sweden. Conversely, women's access to managerial employment tends to be highest in the liberal-type states, with Canada, New Zealand and the United Kingdom all holding three of the four largest female shares. From the start then, and given the patterns of policy provision outlined in chapter **4**, there is some indication that women's opportunities are more limited in countries that are more generous providers of dual earner policy.

Panel **B** in table **6.1** (pg. 198) adds a little more formality to these associations, with correlations in most cases supportive of the argument that certain family policies can reinforce glass ceilings on women's careers. The dual earner-carer leave policy index, for instance, shares a negative and at least moderate correlation with the female share of managerial employment. The association is not perfect, but the suggestion is that – consistent with Mandel and Semyonov (2005, 2006) and others (e.g. Akgunduz and Plantenga, 2012) – female access to managerial positions tends to be restricted where the provision of dual earner-carer leave policy is more generous. Notably though, this overall relation is driven mostly by a moderate and negative correlation with effective weeks of mother-specific earnings-related leave. Associations with gender-neutral earnings-related parental leave – which should restrict female access to managerial positions only as far as take up is, or is perceived to be, dominated by mothers – and father-specific leave – which should not restrict female managerial employment at all – are only weak.

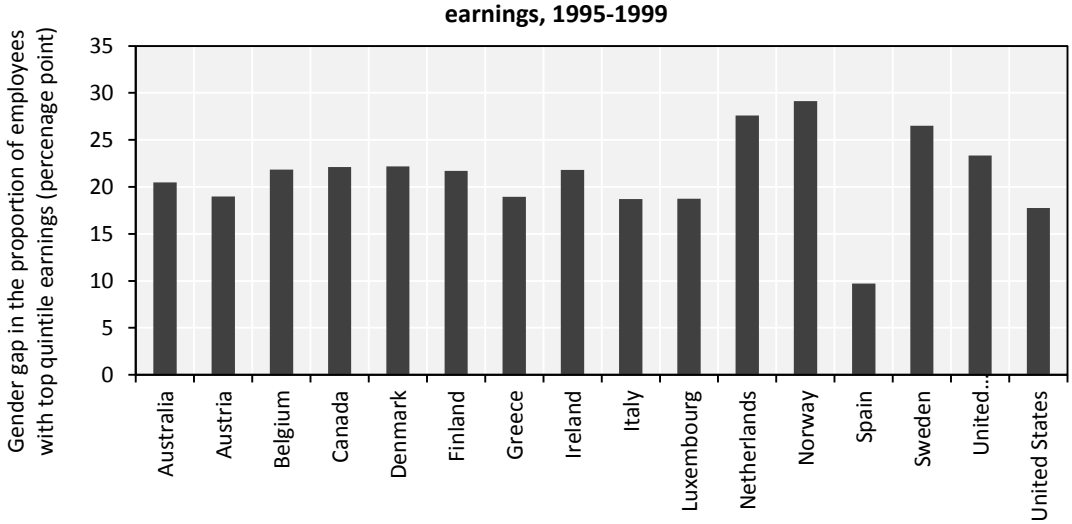
Effective weeks of 'general family support' flat-rate parental and childcare leave also share a negative and moderate relation with the female share of managerial employment – in other words, the female share of managers tends to be lower in countries that provide longer and more generous flat-rate parental and childcare leaves. Notably, the negative correlation here is a little stronger than that on 'dual earner' gender-neutral parental leave. Again, this makes theoretical sense – flat-rate leaves are particularly likely to drive statistical discrimination on account of their long length and disincentives for male take-up (Ruhm, 1998; Mandel and Semyonov, 2006; Akgunduz and Plantenga, 2012). Nonetheless, relations are negative across all measures of leave policy, suggesting that leave entitlements in general may damage women's access to managerial positions.

[94] It is important to remember here that this indicator share runs counter to the other six, in that a higher rather than lower score represents a greater level of equality.

Gender gap in the proportion of employees with top quintile earnings

Lastly, figure **6.3** shows the gender gap in the proportion of employees with top quintile annual earnings, by country and for the five-year interval 1995-1999.

Figure 6.3. **Gender gap in the proportion of employees with top quintile earnings, 1995-1999**



Note: data for France, Germany, New Zealand and Portugal are missing

Similar to the female share of managers, variations across countries in the gender gap in top earnings provide some support for the suggestion that policy provision may place restrictions on women's careers. Gaps again tend to be comparatively large in the Scandinavian countries – particularly Norway and Sweden – although they are also considerable in the Netherlands and the United Kingdom, possibly due to the exceptionally high rates of female part-time employment in these countries (OECD, 2013a). In contrast, gaps are generally smaller in the Southern European countries – especially Spain – plus also the United States. The initial suggestion here then, is that gender differences in high earnings tend to be larger in countries that are also typically more generous providers of family policy in general.

Panel **C** in table **6.1** (pg. 198) shows how these differences in the gender gap in top quintile earnings correlate with the various measures of family policy. The dual earner-carer leave policy index is, as expected, positively correlated with the gender gap in top quintile earnings – in other words, gender differences in high earnings are larger where the provision of dual earner-carer leave policy is more generous. Likewise, the dual earner childcare policy index also shares a positive correlation with the gender gap. The latter association is a little hard to explain using the theory, although it is possible that it is

simply a consequence of the correlation between the provision of dual earner childcare and dual earner-carer leave policies. Regardless, together these associations are supportive of the broad argument (Mandel and Semyonov 2006) that women's relative access to high earnings tends to be lower in countries that are more generous providers of dual earner family policies.

Notably, panel **C** also shows a negative if weak association between the gender gap and effective weeks of 'general family support' flat-rate parental and childcare leave – put differently, there is some suggestion here that gender differences in top earnings are at least slightly *smaller* where weeks of 'general family support' leave are longer. This of course conflicts with the theoretical suggestion that these flat-rate leaves should cause particular damage to women's relative career attainment, and moreover is inconsistent with the association shown above for the female share of managers. In any case, the association with total maternity and parental leave – shown in the final row of panel **C** in table – remains positive and moderate, so the broader inference continues to be that gender differences in top earnings are larger in countries that provide more generous packages of general leave for mothers.

Summary

Taken as a whole, cross-sectional associations between family policy and gender segregation and equality in occupational attainment are – despite some inconsistencies across indicators – mostly and broadly supportive of the argument that certain family policies may damage or constrain women's careers (Ruhm, 1998; Mandel and Semyonov, 2006; Mandel, 2011; Mandel, 2012; Akgunduz and Plantenga, 2012). In short, in 1998, countries that were more generous providers of leave and public childcare policies tended also to see a greater relative concentration of women in 'feminised' occupations and larger barriers for women to managerial employment and high earning positions. These cross-sectional associations provide the background to the following exploration of links between changes in policy and developments in segregation and equality in occupational attainment.

6.3. Gender gap in the proportion of employees in 'female-type' occupations

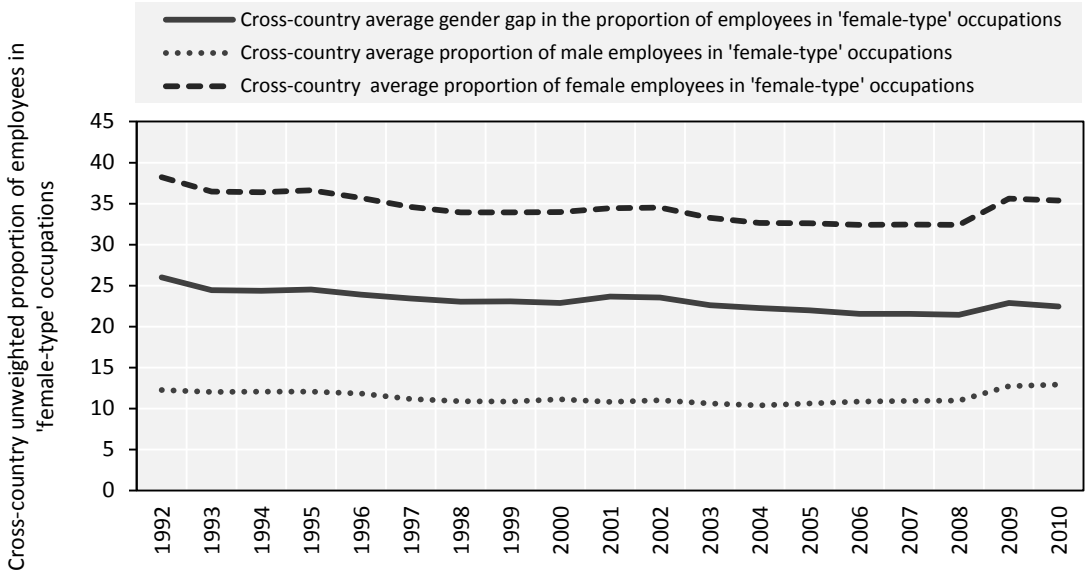
Theories of family policy trade offs suggest the provision of certain policies may inadvertently inflate gender job segregation and channel female employees into 'feminised' occupational niches (Mandel and Semyonov, 2005; Mandel and Semyonov,

2006; Shalev, 2008; Mandel, 2011; Mandel, 2012). More specifically, theory suggests public childcare policies – and public care services more generally – are likely to pull women into traditionally feminised sectors by offering jobs with conditions well suited to female labour, while leave entitlements may drive women into more accommodating 'female-friendly' occupations by increasing the hostility of the general labour market to female workers (Mandel and Semyonov, 2005; Mandel and Semyonov, 2006; Shalev, 2008; Mandel, 2009; Mandel, 2011; Mandel, 2012). This section explores the extent to which changes in family policy are associated with developments in this thesis' measure of job segregation – the gender gap in the proportion of employees in 'female-type' occupations – over the eighteen countries for which data are available[95] and the years 1992-2010.

Description of trends and changes in the gender gap in the proportion of employees in 'female-type' occupations, and links with changes in family policy

On average across countries, levels of gender-based job segregation fall fairly steadily over the years between 1992 and 2010. Figure **6.4** plots the cross-country unweighted average gender gap in the proportion of employees working in 'female-type' occupations for the eighteen countries for which data are available and the years 1992-2010, along with the equivalent unweighted average male and female rates.

Figure 6.4. **Cross-country unweighted average gender gap in employment in 'female-type' occupations, 1992-2010**
With the unweighted average proportion of male and female employees in 'female-type' occupations, 1992-2010



[95] Italy and Portugal are missing on this indicator as in these countries there are no empirically determined 'female-type' occupations - that is, on average over the series there are no occupations where the female share of employment is greater than 150% the female share of total employment.

The average gap in the proportion of men and women working in feminised jobs decreases by just over 3.5 points across the series, from just under 26 percentage points in 1992 to just over 22.5 in 2010. This decrease is due mostly to a fall in the proportion of female employees working in 'female-type' jobs. The male proportion increases slightly from just over 12% in 1992 to just under 13% in 2010, with all of this increase occurring in the last two years of the series. The proportion of female workers in such occupations, meanwhile, decreases by just less than 3 percentage points over the series, although it would have been far larger – at 5.8 percentage points – if the series had stopped before the financial crisis in 2008. Broadly though, figure **6.4** suggests the unweighted average labour market appears to have become steadily less segregated between the early nineties and 2010.

These average developments do, however, disguise fairly diverse changes across countries in the proportion of male and female employees working in 'female-type' jobs. Table **6.2** ranks countries in ascending order by the degree of change in the gender gap between the years 1992 and 2010. It also shows the gender gap at the beginning and end of the period for context, summarises change on the indicators of family policy over the equivalent period, and contains descriptive statistics.

A majority of countries – thirteen – see the gender gap fall between 1992 and 2010. Decreases are particularly large in Luxembourg, France and Denmark, but most of the thirteen countries see a considerable drop in gender differences in employment in 'feminised' jobs over the series. Five countries see some increase in the gender gap between 1992 and 2010, although generally these increases are only small. Growth is largest in Austria, where the gender gap rises by 3.7 percentage points.

From the start then, trends in the gender gap provide little support for any argument that increasing the provision of leave and particularly childcare policy leads to inflated segregation and increases in the concentration of women in female-type occupations. Indeed, despite the widespread expansion of dual earner childcare policy and various types of leave policy over the series, in most countries labour markets appear less segregated in 2010 than they were in 1992. Of course, it remains possible that increasing the generosity of leave and childcare policy may moderate an otherwise relatively general trend towards decreased segregation. However, the correlation coefficients shown at the bottom of table **6.2** – which represent relations between the *size* of changes in policy and in the gender gap – generally suggest that this is not the case either.

Table 6.2. **Summary of change in the gender gap in the proportion of employees in 'female-type' occupations, 1992-2010[a]**

With changes in the nine indicators of family policy and policy indices (1992-2010[a]), and descriptive statistics. Countries are ranked in ascending order by change in the gender gap in the proportion of employees in 'female-type' occupations.

		Gender gap in the proportion of employees in 'female type' occupations (percentage point)			Change in policy, 1992-2010 [a]												
					Dual earner-carer leave policy				Dual earner childcare policy				General family support policy				
	Country	Change, 1992-2010[a]	1992[a]	2010[a]	Dual earner/carer leave policy index	Mother-specific earnings-related leave	Father-specific leave	Gender-neutral earnings-related parental leave	Dual earner childcare policy index	Proportion of children under three in publicly supported child care	Proportion of children three to six in public pre-primary education or primary school	Public expenditure on childcare services per child aged under six	General family support policy index	Child benefit per month for two children	Tax support for families	Flat-rate parental leave and childcare leave available to mothers	Total general maternity and parental leave available to mothers
1	Luxembourg	-10.5	26.2	15.8	1.73	0.00	17.24	0.00	1.02	15.55	18.79	2.02	0.11	-2.12	-2.65	17.15	23.66
2	France	-7.0	32.5	25.5	0.01	-1.05	0.74	0.00	0.44	-0.40	-1.02	3.18	-0.24	-4.97	-1.16	8.70	7.66
3	Denmark	-6.9	33.1	26.2	-0.17	-5.26	-0.49	5.50	1.10	17.17	20.05	2.21	-0.65	0.21	-3.85	-14.04	0.24
4	Canada	-5.4	20.9	15.5	0.39	-0.65	0.00	13.25	0.04	0.00	1.64	0.08	0.12	3.18	-1.83	0.00	12.60
5	Netherlands	-4.2	29.2	25.0	0.60	0.00	5.96	0.00	1.24	-0.50	35.69	3.80	-0.02	-3.29	0.76	6.76	6.76
6	New Zealand	-4.2	19.5	15.3	0.23	0.00	0.00	7.15	0.41	0.00	1.30	2.59	0.52	8.25	-2.00	0.00	7.15
7	Germany	-3.9	28.6	24.7	1.38	0.00	4.54	29.11	0.50	8.02	1.62	1.95	0.64	5.10	8.81	-14.63	14.48
8	Ireland	-2.7	32.1	29.4	0.12	2.09	0.00	0.00	1.44	0.00	49.42	3.29	0.70	7.98	0.79	0.00	2.09
9	Norway	-2.5	23.3	20.8	0.39	-0.32	5.02	-2.97	1.57	31.00	17.50	3.58	-0.25	-4.29	-2.30	9.26	-3.29
10	United Kingdom	-2.4	34.7	32.2	0.31	4.75	0.44	0.00	0.89	1.87	5.71	4.95	-0.25	-1.67	-1.55	0.00	4.75
11	Sweden	-2.3	21.5	19.3	0.46	3.21	3.31	-1.75	0.90	5.67	14.09	3.37	0.45	0.35	0.00	15.37	2.96
12	United States	-1.3	13.2	12.0	0.00	0.00	0.00	0.00	0.03	0.00	0.06	0.16	-0.07	0.00	-0.90	0.00	0.00
13	Spain	-0.4	21.8	21.5	0.49	4.00	2.60	0.00	1.12	14.60	20.71	2.60	-0.06	-1.57	0.87	0.00	4.00
14	Belgium	0.3	10.1	10.4	0.41	-0.02	4.14	0.00	0.64	0.37	4.76	3.63	-0.02	-0.83	-0.82	3.75	3.74
15	Finland	0.7	26.6	27.3	0.39	1.87	2.78	0.25	0.65	2.67	19.87	1.38	-0.39	-3.35	0.00	-4.46	2.12
16	Greece	1.0	7.5	8.5	0.15	2.00	0.40	0.00	0.11	3.80	-0.56	0.20	0.01	-0.31	0.52	0.00	2.00
17	Australia	1.3	13.7	14.9	0.00	0.00	0.00	0.00	0.28	3.58	-2.74	1.69	0.64	9.00	-1.08	0.00	0.00
18	Austria	3.7	24.3	28.0	-0.41	0.00	-4.05	0.00	0.75	12.09	10.97	1.77	-0.22	-2.14	-3.17	6.50	1.96
19	Italy	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	Portugal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mean		-2.60	23.27	20.67	0.36	0.59	2.37	2.81	0.73	6.42	12.10	2.36	0.06	0.53	-0.53	1.91	5.16
Pearson's r coefficent with change in gender gap			-0.50*	-0.08	-0.51*	0.40^	-0.56*	-0.24	-0.18	-0.11	-0.14	-0.14	0.03	0.07	0.09	-0.13	-0.66**

Note: * = p<0.05 ** = p<0.01 *** = p<0.001. ^ = p<0.1. The bars symbolize the magnitude of change between 1992 and 2010[a]. Lighter grey bars show positive change, darker grey negative change.

[a] Australia, 1997-2008; Austria, 1995-2010; Belgium, 1993-2010; Canada, 1992-2008; Finland, 1997-2010; Luxembourg, 1993-2010; New Zealand, 1992-2008; Norway, 1996-2010; Sweden, 1997-2010; United States, 2003-2008. Italy and Portugal are excluded entirely as there are no 'female-type' occupations in these countries.

Changes in both dual earner policy indices, for instance, are negatively correlated with developments in the gender gap in the proportion of employees in 'female-type' occupations – in other words, decreases in the gender gap appear *greater* in countries where increases in dual earner provisions are *larger*. With regards to individual policies, there is a moderate and positive correlation between changes in the gender gap and mother-specific earnings-related leave. However, associations with changes in father-specific and notably gender-neutral earnings related leave are both negative. More importantly, perhaps, correlations with changes in the three childcare indicators are negative if weak across the board. Thus, in contrast to the argument that public childcare provision may contribute to gender segregation, these associations suggest that countries with more sizeable increases in public childcare see slightly larger decreases in the relative concentration of female employees in 'female-type' occupations.

Associations with general family support policy meanwhile, are mostly weak. The correlation between changes in the gender gap and the policy index is tiny, as also are the relations on all three individual policy indicators. Notably, the association on flat-rate parental and childcare leave is actually slightly negative, which contrasts sharply with the strong positive cross-sectional association outlined in the previous section. Generally, though, table **6.2** suggests that changes in general family support policy are mostly unrelated to the relative concentration of female employees in 'feminised' jobs.

Broadly then, these initial associations provide little evidence to suggest that expansions in policy provision lead to increases in the relative concentration of female employees in feminis ed occupations. Indeed, far from inflating segregation, the bivariate associations shown in table **6.2** indicate if anything that an increase in leave and, to a lesser extent, childcare provision might even boost growth in the integration of male and female employees.

Fixed effects regression analysis for the gender gap in the proportion of employees in 'female-type' occupations

Table **6.3** summarises results from two-way fixed effects linear regression models for the gender gap in the proportion of employees working in 'female-type' occupations. Specification **A** is the main fixed effects model for changes in the gender gap. **B** and **C** are identical, but use the individual male and female rates as dependent variables. In all three cases, models use the nine main family policy indicators, plus five controls.

Table 6.3. **Two-way fixed effects models for the gender gap in the proportion of employees in 'female-type' occupations**

		Specification set:	Main specification							
		Model:	**A**			**B**			**C**	
		Dependent variable:	Gender gap in employment in 'female-type' occupations			Proportion of male employees in 'female-type' occupations			Proportion of female employees in 'female-type' occupations	
Lag	Variable		B	SE		B	SE		B	SE
	Dual earner-carer leave policy									
t-1	Mother-specific earnings-related leave		-0.070	(0.185)		0.018	(0.100)		-0.052	(0.227)
t	Father-specific leave		-0.003	(0.045)		0.068	(0.052)		0.065	(0.069)
t-1	Gender-neutral earnings-related parental leave		0.022	(0.023)		-0.013	(0.023)		0.009	(0.031)
	Dual earner childcare policy									
t	Children under 3 in public childcare		-0.043	(0.059)		-0.003	(0.054)		-0.046	(0.060)
t	Children 3-6 in public pre-primary care or primary school		0.009	(0.013)		-0.055	(0.015)	**	-0.046	(0.027)
t	Public expenditure on childcare services		0.289	(0.249)		-0.031	(0.143)		0.259	(0.168)
	General family support policy									
t	Child benefit per month for two chlldren		0.087	(0.039)	*	-0.014	(0.031)		0.073	(0.039) ^
t	Tax support for families		0.049	(0.065)		-0.072	(0.063)		-0.023	(0.068)
t-1	Flat-rate parental leave and childcare leave		0.019	(0.018)		0.025	(0.038)		0.045	(0.045)
t	Service Sector Size		-0.143	(0.150)		0.313	(0.089)	**	0.170	(0.133)
t	Public Sector Size		0.629	(0.267)	*	-0.078	(0.222)		0.551	(0.247) *
t-1	Crude birth rate		-0.420	(0.277)		-0.055	(0.177)		-0.475	(0.262) ^
t-5	Female share of tertiary education students		-0.151	(0.112)		0.031	(0.057)		-0.119	(0.128)
t	Employment protection legislation index		1.107	(0.805)		-0.097	(0.673)		1.010	(1.264)
		n	301			301			301	
		r-squared (within)	0.787			0.642			0.750	

Note: * = p<0.05 ** = p<0.01. ^ = p<0.1. Italy and Portugal excluded from all specifications as they do not contain any empirically determined 'female-type' occupations. Results are robust to the omision of influential cases (see appendix **E** for diagnostics).

Specifications:

A-C. Two-way fixed effects (country and time) with country-specific time-trends and cluster robust standard errors (CRSEs). Main specification

Model **A** shows very few clear associations between changes in family policy and developments in the gender gap in the proportion of employees working in 'female-type' occupations. None of the dual earner-carer leave or childcare policy indicators are statistically significant, even at the 10% level. Moreover, models **B** and **C** suggest that changes in the dual earner indicators are also unrelated to the individual male and female rates of employment in 'female-type' occupations. The only exception is a negative relation between changes in public childcare provision for older children and the male rate, but even this association is cancelled out by a similar if insignificant relation with the proportion of female employees in 'feminised' jobs. Generally, then, models **A-C** suggest that changes in dual earner policy are almost entirely unrelated to movements in gender-based job segregation.

It is broadly a similar story for changes in general family support policy. Model **A** shows that neither tax support for the family nor flat-rate parental and childcare leaves share a statistically significant relation with changes in the gender gap. There is, though, a curious positive and significant coefficient on within-country changes in child benefit payments, driven mostly by a positive association with the proportion of female employees in 'female-type' occupations. This finding is a little difficult to explain theoretically – it suggests that, all else equal, an increase in the generosity of child benefit somehow encourages women to work in 'feminised' occupations. Upon investigation, however, the relation is driven mostly by the experience of Australia where reform to family support and child care benefit in 2000 (Gauthier, 2011c) coincides with a jump in the proportion of women working in 'female-type' jobs. Without Australia, the coefficient on changes in child benefit falls by almost a third to 0.60 and moves out of statistical significance even at the 10% level[96]. This is no clear reason to exclude Australia from the model. However, the fragility of the relation coupled with the absence of any good theoretical explanation means that it might be risky to place too much emphasis on this result.

As for the models presented earlier in chapter **5**, it is possible that measuring leave policies through several indicators of various types hides some underlying relation with total general leave. Indeed, splitting leaves may be particularly hazardous here if statistical discrimination is based more on the total length of leave on offer to mothers than on the provision of various leave types (see chapter **3.2**). Table **6.4** presents results for models that are similar to those in **6.3**, but that use the alternative set of leave policy indicators. More specifically, **A-C** substitute in 'total maternity and parental leave available to

[96] The p-value on child benefit per month for two children increases to 0.117 when Australia is removed.

Table 6.4. **Alternative two-way fixed effects models of the gender gap in the proportion of employees in 'female-type' occupations**

	Specification set:	Alternative measures of leave policy						Alternative measures of leave policy, with sqaured term					
	Model:	**A**		**B**		**C**		**D**		**E**		**F**	
	Dependent variable:	Gender gap in employment in 'female-type' occupations		Proportion of male employees in 'female-type' occupations		Proportion of female employees in 'female-type' occupations		Gender gap in employment in 'female-type' occupations		Proportion of male employees in 'female-type' occupations		Proportion of female employees in 'female-type' occupations	
Lag	Variable	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE
	Dual earner-carer leave policy												
t-1	Mother-specific earnings-related leave												
t	Father-specific leave	-0.016	(0.044)	0.065	(0.053)	0.049	(0.069)	-0.014	(0.045)	0.059	(0.055)	0.045	(0.074)
t-1	Gender-neutral earnings-related parental leave												
	Dual earner childcare policy												
t	Children under 3 in public childcare	-0.057	(0.060)	-0.006	(0.055)	-0.063	(0.057)	-0.060	(0.060)	-0.001	(0.057)	-0.061	(0.059)
t	Children 3-6 in public pre-primary care or primary school	0.009	(0.013)	-0.055	(0.016) **	-0.046	(0.027)	0.010	(0.013)	-0.055	(0.015) **	-0.046	(0.027)
t	Public expenditure on childcare services	0.228	(0.257)	-0.080	(0.144)	0.148	(0.203)	0.226	(0.255)	-0.075	(0.141)	0.151	(0.204)
	General family support policy												
t	Child benefit per month for two chlldren	0.074	(0.044)	-0.006	(0.032)	0.068	(0.045)	0.071	(0.047)	0.001	(0.037)	0.072	(0.041) ^
t	Tax support for families	0.052	(0.066)	-0.057	(0.067)	-0.005	(0.067)	0.054	(0.065)	-0.061	(0.067)	-0.007	(0.065)
t-1	Flat-rate parental leave and childcare leave												
	Alternative measures of leave policy												
t-1	Total maternity and parental leave available to mothers	0.032	(0.019)	0.013	(0.034)	0.045	(0.042)	0.007	(0.089)	0.067	(0.071)	0.074	(0.111)
t-1	(Total maternity and parental leave available to mothers)^2							0.000	(0.001)	-0.001	(0.001)	0.000	(0.001)
t-1	Childcare leave	-0.029	(0.035)	0.004	(0.024)	-0.025	(0.043)	-0.030	(0.035)	0.006	(0.025)	-0.024	(0.042)
t	Service Sector Size	-0.158	(0.142)	0.319	(0.087) **	0.161	(0.124)	-0.155	(0.145)	0.314	(0.089) **	0.158	(0.127)
t	Public Sector Size	0.714	(0.254) *	-0.055	(0.218)	0.660	(0.224) **	0.703	(0.261) *	-0.031	(0.217)	0.673	(0.227) **
t-1	Crude birth rate	-0.432	(0.309)	-0.048	(0.182)	-0.480	(0.284)	-0.430	(0.307)	-0.053	(0.180)	-0.483	(0.283)
t-5	Female share of tertiary education students	-0.158	(0.116)	0.045	(0.054)	-0.113	(0.133)	-0.162	(0.120)	0.054	(0.056)	-0.108	(0.141)
t	Employment protection legislation index	1.526	(0.555) *	-0.054	(0.550)	1.472	(0.947)	1.448	(0.607) *	0.115	(0.609)	1.563	(1.048)
	Joint F-test on total leave available to mothers and its square (d.f)							2.920	(2, 17) ^	0.520	(2, 17)	0.630	(2, 17)
	n	301		301		301		301		301		301	
	r-squared (within)	0.788		0.637		0.751		0.788		0.639		0.751	

Note : * = p<0.05 ** = p<0.01. ^ = p<0.1. The joint F-test on total maternity and parental leave available to mothers and its square tests the null that the two are jointly equal to zero. Italy and Portugal excluded from all specifications as they do not contain any empirically determined 'female-type' occupations. Certain estimates are sensitive to the omision of influential cases (see appendix **E** for diagnostics).

Specifications :

A-C. Two-way fixed effects (country and time) with country-specific time-trends and CRSEs. Leave indicators simplified into 'Total effective weeks of maternity and parental leave available to mothers', plus 'Effective weeks of father-specific leave' and 'Effective weeks of childcare leave'.

D-F. Two-way fixed effects (country and time) with country-specific time-trends and CRSEs. Leave indicators simplified into 'Total effective weeks of maternity and parental leave available to mothers' and its sqaure, plus 'Effective weeks of father-specific leave' and 'Effective weeks of childcare leave'.

mothers' and 'effective weeks of childcare leave' for the indicators of mother-specific earnings-related leave, gender-neutral earnings-related parental leave and flat-rate parental and childcare leave. **D-F**, meanwhile, add a squared term on total leave available to mothers to capture any diminishing or exponential effects of long leaves.

Using the alternative measures of leave produces results that are broadly similar to those in the main specifications. Estimated relations in **A-C** are almost identical to those in table **6.3**, although notably the curious positive relation on child benefit is no longer statistically significant. Interestingly, after adding the squared term in model **D**, total general leave available to mothers and its square do become jointly significant[97], if only at the more lenient 10% level[98]. The coefficient on the 'main' term is positive, hinting perhaps that increase in the general length of leave on offer to mothers might inflate gender-based job segregation. However, the coefficients on both total leave and its square are tiny – the predicted effect of a 24 week extension to effective weeks of total leave is an increase in the gender gap of just 0.17 points. In other words, even if a P-value of less than 0.10 is considered statistically significant, the substantive effect of a change in total leave on the relative concentration of female employees in 'feminised' jobs remains effectively nil.

Overall then, the regression models shown in tables **6.3** and **6.4** provide little support for Mandel and Semyonov's (2005, 2006) argument that certain family policies may encourage gender-based job segregation. That said, family policies are only one side of Mandel and Semyonov's thesis regarding segregation. As discussed in chapter **2.2**, the broader argument is that in '*developed welfare states*' (2006: 1917), family policies operate alongside a large general public care sector to push and draw women into 'protected' female-type public service employment. It is worth noting that the latter half of this argument does receive some support from the regression models presented in tables **6.3** and **6.4.** Across specifications, changes in the size of the public sector as an employer are consistently positively related to changes in the gender gap in the proportion of employees in 'female-type' jobs. Put differently, the results suggest that increases (decreases) in public sector employment may increase (decrease) gender job segregation[99]. Nonetheless, public sector employment cannot be considered an explicit

[97] As noted in chapter 5, when testing the coefficients on total maternity and parental leave and its square, the important test is the joint F-test shown at the bottom of the table (see chapter **5.3**).
[98] P = 0.081. Interestingly, the diagnostics presented in appendix **E** show that when the possibly highly influential observation 'Luxembourg 2010' is dropped from the model, this relation becomes statistically significant at the stricter 5% level. The coefficient, however, remains tiny (see appendix **E** (pp. 395-401) for more detail).
[99] It should noted that due to the way it is measured, public sector size includes any employees working in public childcare services. As a result, it is possible that the positive association between

family policy, at least not as it is measured here[100]. As a result, while this particular finding may produce some support for Mandel and Semynov's (2006) broad argument, it continues to provide no direct evidence of a 'trade off' effect on segregation specific to explicit family policies.

Summary

Taken together, results from this section generally reject the argument that family policies may inflate gender job segregation and the relative concentration of female employees in feminised jobs. The trends outlined earlier show that the period between 1992 and 2010 is one in which most countries combine a general increase in family policy with a decrease in job segregation, while the bivariate associations in table **6.2** suggest that, if anything, decreases in the gender gap tend to be *larger* in countries with more substantial growth in policy provision. The regression models shown above meanwhile, find that changes in family policy do no apparent damage to the gender gap in the proportion of employees in 'female-type' occupations. As noted earlier in this chapter, the data used here to measure segregation does suffer limitations, and it remains possible that the use of more detailed occupation data might produce different results. Nonetheless, based on the available comparable information, the general conclusion from this section is that changes in the relative concentration of women in 'feminised' jobs appear mostly independent of changes in family policy provision.

6.4. The female share of managerial employment

As part of the same mechanism behind the concentration of women in 'feminised' jobs, family policy trade off theories suggest that certain policies may reinforce gendered 'glass ceilings' and strengthen barriers to high-level employment for women (Ruhm, 1998; Blau et al, 2001; Mandel and Semyonov, 2005; Mandel and Semyonov, 2006; Pettit and Hook,

---

public sector size and the gender gap may reflect at least in part changes in public childcare provision and, more concerningly, could be hiding or absorbing the expected association between changes in the three measures of public childcare provision and gender differences in employment in 'female-type' occupations. To check against this all models in tables **6.3** and **6.4** were re-estimated with 'public sector size' removed. Doing so made no difference to results for the three childcare variables – with or without 'public sector size', none of the three share a positive significant association with changes in the gender gap in employment in 'female-type' occupations.

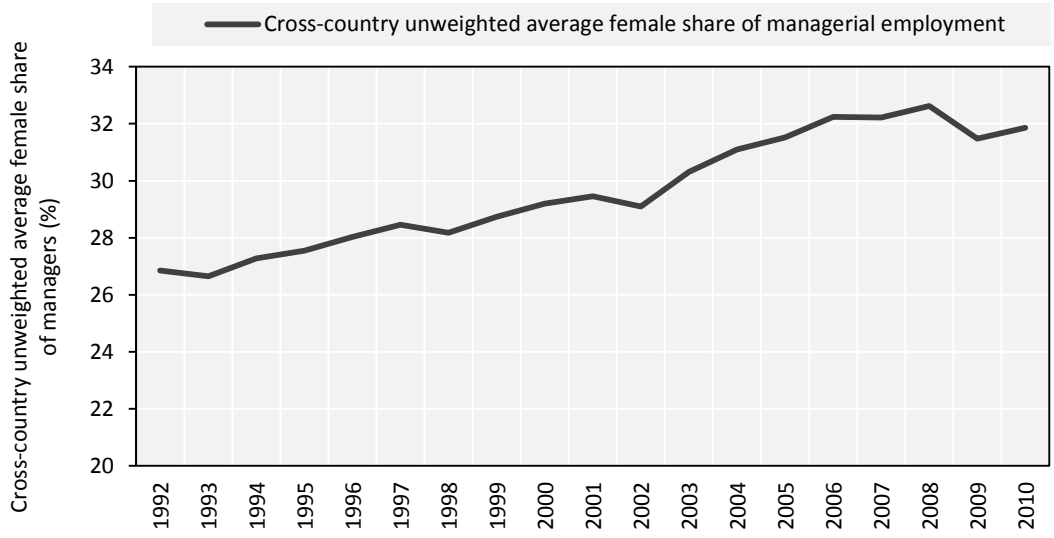
[100] As detailed in chapter **3.4**, the measure used here is 'government employment as a proportion of the total labour force'. In their 2006 article, Mandel and Semyonov use a rather more specific measure - '*the proportion of the workforce employed in the public welfare sector (public health, education and welfare)*' (2006: 1919) – which at least in part can be viewed as measuring public policy efforts to shift many domestic responsibilities to the public sphere (2006: 1916). Unfortunately, such data that stretch across both countries and time are not available.

2009; Hegewisch and Gornick, 2011; Akgunduz and Plantenga, 2012). Particularly important here are leave entitlements for mothers, which are likely to restrict women's access to high-skill and high-status jobs by damaging female human capital, recreating gendered divisions of labour and encouraging statistical discrimination (Mandel and Semyonov, 2005; Mandel and Semyonov, 2006; Shalev, 2008; Mandel, 2011; Mandel 2012). This section examines links between changes in family policy and this chapter's measure of women's relative access to high-level employment – the female share of managerial employment – with particular focus on associations with changes in leave entitlements for mothers.

Description of trends and changes in the female share of managerial employment, and links with changes in family policy

Figure **6.5** shows the cross-country unweighted average female share of managerial employment for the twenty sample countries over the years 1992-2010. It is worth remembering here that this indicator runs in the opposite direction to all other indicators of gender equality in employment used in this thesis, so in this case a higher value represents a greater level of equality.

Figure 6.5. **Cross-country unweighted average female share of managerial employment, 1992-2010**



Similar to developments in gender job segregation, the unweighted average female share of managers moves steadily towards equality over the series. In 1992, women's average share of managers stood at just over 26%. By 2010, this had increased to just under 32%. The share does peak in 2008 at 32.6%, before falling slightly to 31.1% in 2009 following

the financial crisis. Nonetheless, despite the fluctuation there is a clear upward trend in women's average access to managerial employment over the period examined.

This shift towards equality in managerial employment is observed, to varying extents, in almost all of the twenty sample countries. Table **6.5** (overleaf) ranks countries in descending order by the degree of change in the female share between the years 1992 and 2010. It also shows the female share of managerial employment at the beginning and end of the period for context, summarises change on the indicators of family policy over the equivalent period, and contains descriptive statistics.

Women's representation amongst managers increases in eighteen of the twenty countries covered. Gains are particularly large in Ireland and the Netherlands – both of which had relatively low female shares in 1992 – but are also fairly substantial in several others. The female share does fall in Luxembourg and Portugal, by just under 4 and 5 percentage points respectively. In general, though, most countries see at least some improvement in women's access to managerial positions between 1992 and 2010.

Just as was the case for gender job segregation then, these broad trends provide little immediate support for the argument that certain family policies damage women's access to high-level positions. While family policy 'trade off' theories would suggest that the general increase in family policy and particularly leave entitlements observed in chapter **4** should lead to inflated barriers to managerial employment for women (Mandel and Semyonov, 2005; Mandel and Semyonov, 2006; Shalev, 2008; Mandel, 2011; Mandel 2012), the developments shown in table **6.5** suggest that across countries women are increasingly able to compete with their male colleagues for managerial positions. That said, the bivariate correlations shown at the bottom of table **6.5** – which measure associations between the *size* of changes in policy and in the female share of managers – do hint at some constraining effect of leave on gains in the female share, albeit only in specific instances.

At first glance, correlations between changes in dual earner-carer leave policy and the female share of managerial employment fit fairly well with the theory. Changes in the dual earner-carer leave policy index share a negative and moderate-to-strong relationship with change in the female share, indicating that gains in female access to managerial positions are smaller where changes in dual earner-carer leave are larger. Notably, though, this overall relation is not driven by mother-specific leave. Rather, it is the product of negative associations with both gender-neutral earnings-related parental leave and particularly

Table 6.5. **Summary of change in the female share of employment as managers, legislators and senior officials (%), 1992-2010[a]**

With change in the nine indicators of family policy and three policy indices (1992-2010[a]), and descriptive statistics. Countries are ranked in ascending order by change in female share of employment as mangers, legislators and senior officials.

		Female share of employment as mangers, legislators and senior officials (%)			Change in policy, 1992-2010 [a]												
					Dual earner-carer leave policy				Dual earner childcare policy				General family support policy				
	Country	Change, 1992-2010[a]	1992[a]	2010[a]	Dual earner/carer leave policy index	Mother-specific earnings-related leave	Father-specific leave	Gender-neutral earnings-related parental leave	Dual earner childcare policy index	Proportion of children under three in publicly supported child care	Proportion of children three to six in public pre-primary education or primary school	Public expenditure on childcare services per child aged under six	General family support policy index	Child benefit per month for two children	Tax support for families	Flat-rate parental leave and childcare leave available to mothers	Total general maternity and parental leave available to mothers
1	Ireland	16.0	23.4	39.4	0.12	2.09	0.00	0.00	1.44	0.00	49.42	3.29	0.70	7.98	0.79	0.00	2.09
2	Netherlands	11.1	17.8	28.9	0.60	0.00	5.96	0.00	1.24	-0.50	35.69	3.80	-0.02	-3.29	0.76	6.76	6.76
3	Norway	8.8	26.0	34.8	0.39	-0.32	5.02	-2.97	1.57	31.00	17.50	3.58	-0.25	-4.29	-2.30	9.26	-3.29
4	New Zealand	8.5	31.5	40.0	0.23	0.00	0.00	7.15	0.41	0.00	1.30	2.59	0.52	8.25	-2.00	0.00	7.15
5	Finland	7.6	23.1	30.7	0.39	1.87	2.78	0.25	0.65	2.67	19.87	1.38	-0.39	-3.35	0.00	-4.46	2.12
6	France	7.1	31.5	38.6	0.01	-1.05	0.74	0.00	0.44	-0.40	-1.02	3.18	-0.24	-4.97	-1.16	8.70	7.66
7	Greece	7.0	22.7	29.7	0.15	2.00	0.40	0.00	0.11	3.80	-0.56	0.20	0.01	-0.31	0.52	0.00	2.00
8	Australia	5.2	31.5	36.7	0.00	0.00	0.00	0.00	0.28	3.58	-2.74	1.69	0.64	9.00	-1.08	0.00	0.00
9	Belgium	4.7	29.7	34.4	0.41	-0.02	4.14	0.00	0.64	0.37	4.76	3.63	-0.02	-0.83	-0.82	3.75	3.74
10	Italy	4.6	16.5	21.1	0.66	5.28	5.28	-5.16	0.42	1.00	0.36	-0.32	0.68	5.64	3.15	0.00	0.12
11	Germany	4.5	25.5	30.0	1.38	0.00	4.54	29.11	0.50	8.02	1.62	1.95	0.64	5.10	8.81	-14.63	14.48
12	Denmark	4.3	18.5	22.8	-0.17	-5.26	-0.49	5.50	1.10	17.17	20.05	2.21	-0.65	0.21	-3.85	-14.04	0.24
13	Sweden	4.3	27.1	31.4	0.46	3.21	3.31	-1.75	0.90	5.67	14.09	3.37	0.45	0.35	0.00	15.37	2.96
14	Spain	4.1	30.0	34.1	0.49	4.00	2.60	0.00	1.12	14.60	20.71	2.60	-0.06	-1.57	0.87	0.00	4.00
15	United Kingdom	2.6	33.2	35.8	0.31	4.75	0.44	0.00	0.89	1.87	5.71	4.95	-0.25	-1.67	-1.55	0.00	4.75
16	Austria	2.0	26.6	28.7	-0.41	0.00	-4.05	0.00	0.75	12.09	10.97	1.77	-0.22	-2.14	-3.17	6.50	1.96
17	Canada	1.6	34.3	36.0	0.39	-0.65	0.00	13.25	0.04	0.00	1.64	0.08	0.12	3.18	-1.83	0.00	12.60
18	United States	0.5	42.1	42.7	0.00	0.00	0.00	0.00	0.03	0.00	0.06	0.16	-0.07	0.00	-0.90	0.00	0.00
19	Luxembourg	-3.8	28.8	25.0	1.73	0.00	17.24	0.00	1.02	15.55	18.79	2.02	0.11	-2.12	-2.65	17.15	23.66
20	Portugal	-4.8	37.2	32.5	1.32	-3.22	11.54	10.71	0.67	8.20	14.20	1.41	0.34	1.19	3.31	0.00	7.49
Mean		4.80	27.86	32.66	0.42	0.63	2.97	2.80	0.71	6.23	11.62	2.18	0.10	0.82	-0.15	1.72	5.02
Pearson's r coefficent with change in gender gap			-0.52*	0.23	-0.43^	0.22	-0.44^	-0.20	0.33	-0.19	0.43^	0.34	0.11	0.18	0.03	-0.11	-0.42^

Note: * = p<0.05 ** = p<0.01 *** = p<0.001. ^ = p<0.1. The bars symbolize the magnitude of change between 1992 and 2010[a]. Lighter grey bars show positive change, darker grey negative change.

[a] Australia, 1997-2008; Austria, 1995-2010; Belgium, 1993-2010; Canada, 1992-2008; Finland, 1997-2010; Italy, 1992-2003, Luxembourg, 1993-2010; New Zealand, 1992-2008; Norway, 1996-2010; Sweden, 1997-2010; United States, 2003-2008.

father-specific leave. The former is perhaps feasible – gender-neutral leave may encourage discrimination and damage women's relative skills as long as take up remains dominated by mothers – but the correlation is only weak. The stronger association with father-specific leave, on the other hand, is curious and difficult to explain using the theory. It is though, driven in large part by the experience of Luxembourg and Portugal – when the two are removed, the correlation reverses to r = 0.29[101]. Taken as a whole, this produces only very limited evidence to suggest that increases in dual earner-carer leave may inflate barriers for women to managerial employment.

Likewise, there is also little to suggest that increases in flat-rate 'general family support' parental and childcare leave constrain women's access to managerial employment. The correlation between changes in these 'general family support' leaves and the female share is negative, but the association is only very weak. This is a little surprising, given that the earlier cross-sectional analysis suggested that these leaves are particularly likely to obstruct women's access to top positions. However, table **6.5** shows that only Luxembourg combines a large increase in flat-rate leave with a decrease or even only a small increase in the female share. Otherwise, countries with increases in flat-rate leaves are scattered throughout the rankings, with two countries – the Netherlands and Norway – coupling a considerable expansion in flat-rate parental and childcare leave with large increases in the female share of managerial employment. Together with relations for dual earner-carer leave policy then, there is little here to support the argument that leave entitlements can damage women's careers.

However, and as pointed out at several points throughout the thesis, it is possible that splitting leave policies between several indicators of various 'types' may obscure a clearer relation with overall general leave. The final column in table **6.5** shows relations between changes in the female share and the alternative measure of total general leave available to mothers. Notably, the correlation here is negative and at least moderate in strength – in other words, those countries with larger (smaller) increases in total general leave for mothers are more likely to see smaller (larger) increases in the female share of managerial employment over the series. It is worth noting that this correlation is again driven largely by the experience of Portugal and Luxembourg – without the two the correlation coefficient shrinks to as low as r = -0.10. Nonetheless, the comparative strength of the association on general leave suggests that any 'trade off' relation between leave and

[101] Without Luxembourg and Portugal, the correlation on the overall dual earner/carer leave policy index also reverses to r=0.09, but the relation with gender-neutral earnings-related leave remains negative at r= -0.19.

women's access to managerial employment may be captured best by a measure of *total* leave available to mothers – as opposed to the individual or split indicators of various types of leave – and more substantively that any 'trade off' effect is blind to the type of leave entitlement offered. More importantly, it also provides at least some evidence to suggest that increases in leave provisions may reinforce barriers for women to managerial employment.

Finally, elsewhere changes in dual earner childcare provision are mostly positively correlated with changes in the female share. There is a negative if fairly weak association on provision for children under three, but correlations with changes in the overall policy index, provision for children over three, and public spending on childcare services are all moderate and positive. Mandel and Semyonov (2006) are less specific about the effects of childcare provision on women's access to top positions, but the inference from these associations is that growth in the female share of managerial employment tends to be higher in countries with larger increases in public childcare provisions.

Fixed effects regression analysis for the female share of managers

Table **6.6** builds on these descriptive bivariate relations through a series of two-way fixed effects regression models for the female share of managerial employment. As it is not possible to run individual male and female models for this indicator, this table is a little simpler than those elsewhere. Model **A** is the main fixed effects specifications and uses the main set of nine family policy indicators, plus controls. **B** is similar but uses the alternative set of leave policy indicators, while **C** adds a squared term on 'total effective weeks of maternity and parental leave available to mothers'. Given the findings of the above, these alternative specifications receive particular attention here.

The main specification – model **A** – shows precisely zero statistically significant associations between changes in the female share of managers and both the nine main measures of family policy and the five controls. On occasion coefficients are reasonably large, and there is perhaps some hint at positive and negative associations on father-specific leave and childcare provision for older children, respectively. Broadly though, the suggestion here is that changes in policy provision are mostly unrelated to developments in women's representation amongst managers. This is perhaps not entirely surprising, given that the descriptive analysis above found that bivariate relations with the nine main family policy indicators were generally small. However, it is striking that *none* of the included variables including controls share any kind of clear link with changes in the

Table 6.6. **Two-way fixed effects models for the female share of managerial employment**

		Specification set:	Main specification			Alternative measures of leave policy			Alternative measures of leave, with squared term		
		Model:	**A**			**B**			**C**		
		Dependent variable:	Female share of managerial employment								
Lag	Variable		B	SE		B	SE		B	SE	
	Dual earner-carer leave policy										
t-1	Mother-specific earnings-related leave		0.183	(0.140)							
t	Father-specific leave		0.142	(0.079)	^	0.111	(0.100)		0.137	(0.103)	
t-1	Gender-neutral earnings-related parental leave		0.032	(0.044)							
	Dual earner childcare policy										
t	Children under 3 in public childcare		0.099	(0.095)		0.076	(0.093)		0.042	(0.093)	
t	Children 3-6 in public pre-primary care or primary school		-0.081	(0.039)	^	-0.081	(0.041)	^	-0.079	(0.041)	^
t	Public expenditure on childcare services		-0.070	(0.256)		-0.161	(0.272)		-0.216	(0.268)	
	General family support policy										
t	Child benefit per month for two chlldren		0.056	(0.064)		0.052	(0.058)		0.011	(0.049)	
t	Tax support for families		0.014	(0.063)		0.032	(0.069)		0.055	(0.072)	
t-1	Flat-rate parental leave and childcare leave		0.060	(0.068)							
	Alternative measures of leave policy										
t-1	Total maternity and parental leave available to mothers					0.078	(0.061)		-0.234	(0.147)	
t-1	(Total maternity and parental leave available to mothers)^2								0.005	(0.002)	*
t-1	Childcare leave					-0.022	(0.052)		-0.041	(0.049)	
t	Service Sector Size		0.069	(0.153)		0.079	(0.148)		0.074	(0.139)	
t	Public Sector Size		-0.300	(0.380)		-0.209	(0.382)		-0.263	(0.311)	
t-1	Crude birth rate		-0.101	(0.301)		-0.060	(0.294)		0.023	(0.277)	
t-5	Female share of tertiary education students		0.095	(0.103)		0.121	(0.099)		0.095	(0.098)	
t	Employment protection legislation index		0.371	(1.013)		0.227	(0.937)		-0.506	(0.799)	
t	Economic freedom index		-0.915	(1.216)		-0.811	(1.149)		-0.391	(1.119)	
	Joint F-test on total leave available to mothers and its square (d.f)								6.440	(2, 19)	**
	n		332			332			332		
	r-squared (within)		0.691			0.691			0.702		

Note : * = p<0.05 ** = p<0.01 *** = p<0.001. ^ = p<0.1. The joint F-test on total maternity and parental leave available to mothers and its square tests the null that the two are jointly equal to zero. Italy 2004-2010 is excluded from all specifications due to a sharp break in series. Certain estimates are sensitive to the omission of influential observations (see appendix **E** for diagnostics).

Specifications :

A. Two-way fixed effects (country and time) with country-specific time-trends and cluster robust standard errors (CRSEs). Main specification

B. Two-way fixed effects (country and time) with country-specific time-trends and CRSEs. Leave indicators simplified into 'Total effective weeks of maternity and parental leave available to mothers', plus 'Effective weeks of father-specific leave' and 'Effective weeks of childcare leave'.

C. Two-way fixed effects (country and time) with country-specific time-trends and CRSEs. Leave indicators simplified into 'Total effective weeks of maternity and parental leave available to mothers' and its sqaure, plus 'Effective weeks of father-specific leave' and 'Effective weeks of childcare leave'.

female share of managers. Put simply, model **A** fails to explain within-country variation in women's representation in managerial employment in any meaningful way.

Using the alternative measures of leave produces results that are a little closer to those predicted by the theory and existing evidence. Estimates in **B** are similar to **A**, with a small and insignificant coefficient on total general leave for mothers and all other variables far from significance at the 5% level. However, model **C** – which adds a squared term on total general leave – reveals a notable and sizeable quadratic relation on total leave available to mothers. The coefficient on the 'main effect' is fairly large and negative and that on the squared term far smaller but positive, while the joint F-test on the two suggests that together both are highly jointly significant with a p-value of 0.008. In other words, changes in total weeks of leave share a negative and highly significant relation with the female share of managers, albeit with the effect diminishing as the size of the change in total maternity and parental leave available to mothers increases. The effect peaks at a 24 week change in leave where, all else equal, the estimated impact on the female share of managerial employment is a decrease of 3.55 percentage points. Thereafter the estimated marginal effect of any additional weeks of leave becomes positive, although coincidentally – and as noted previously – the largest within-country change in total leave observed in the series also stands at 24 weeks.

Model **C**, then, provides considerable support for the argument that leave entitlements may restrict women's access to high status positions (Mandel and Semyonov, 2006; Shalev, 2008; Mandel, 2011; Akgunduz and Plantenga, 2012; Mandel, 2012). It is important to keep in mind that the trends shown in the previous subsection suggest a broad upward shift in the female share of managerial employment across almost all of the countries examined. Thus, the effect of changes in leave may be best interpreted as a leave-induced constraint on *growth* in female access to managerial positions. It is also worth pointing out again that the relation on total general leave available to mothers remains the only statistically significant association across all three models – other than the constraining impact of general leave, within-country variation in the female share of managers remains completely unexplained. As the estimated effect of change in leave is negative, this solitary relation cannot account for the general increase in the female share of managers observed earlier. Put differently, while the effects of leave may offer insight into why gains in the female share vary across countries, all models in table **6.6** remain ignorant to the drivers of the observed widespread gains in female access to managerial employment. This does not, however, fully detract from the relation between leave and the female share – regardless of other results, the broad inference here is that increases or

extensions to the length of maternity and parental leave may damage women's representation amongst managers.

Summary

On balance, results from this section provide support for the argument that extending leaves available to mothers may reinforce 'glass ceilings' and constrain women's access to high-level positions. While the trends outlined in table **6.5** show that most countries have combined an increase in leave provisions with an increase in the female share of managerial employment, the crude bivariate associations suggest these gains tend to be smaller where increases in the *total* leave available to mothers are larger. The regression models in table **6.6** reinforce the latter, finding that – after removing trends from the data and controlling for other, ultimately insignificant, influences – changes in total maternity and parental leave for mothers are negatively related to the female share of managerial employment, albeit with the effect diminishing as the size of the change in leave increases.

This result is in-line with the findings of Akgunduz and Plantenga (2012). Indeed, as touched on earlier, they find a relation that is statistically significant only at the 10% level – here, even with the use of the 'harder' cluster robust standard errors, the relation between changes in leave and female access to managerial employment is statistically significant at a far stricter level of $P < 0.01$. If anything, then, the results above solidify and expand upon existing conclusions around links between leave entitlements and women's access to high-status positions. Regardless, the broad inference here as there is that extending leaves available to mothers may through whatever mechanism – be it inflated statistical discrimination, decreases in female human capital or the reinforcement of gendered norms and division of labour (Mandel and Semyonov, 2006; Shalev, 2008; Mandel, 2011; Akgunduz and Plantenga, 2012; Mandel, 2012) – damage women's ability to compete for managerial positions.

6.5. Gender gap in the proportion of employees with top quintile annual earnings

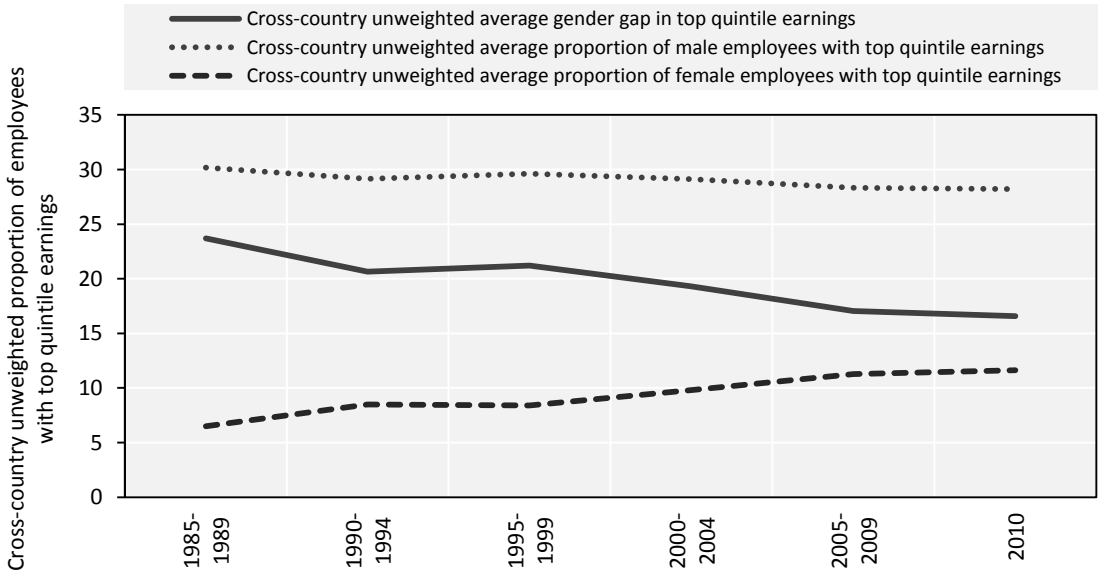
A possible further consequence of any impact of family policy on women's ability to compete at the top end of the labour market is that policy provision may influence women's relative access to high earnings (Ruhm, 1998; Mandel and Semyonov, 2005; Mandel and Semyonov, 2006; Shalev, 2008; Mandel, 2009; Mandel and Shalev, 2009; Mandel, 2011; Mandel, 2012). The theoretical mechanisms here are identical to those for the female share of managers – leave policies are again central, with gender imbalances in

entitlements expected to damage women's ability to reach top wages by reducing female human capital and by increasing the reluctance of employers to hire women for high-paying positions (Ruhm, 1998; Mandel and Semyonov, 2005; Mandel and Semyonov, 2006; Shalev, 2008; Mandel, 2009; Mandel and Shalev, 2009; Mandel, 2011; Mandel, 2012). This last section examines associations between changes in family policy provision and the gender gap in the proportion of employees with top quintile annual earnings across the eighteen countries for which data are available[102]. It worth noting again that, unfortunately, this indicator is measured at five-year intervals only.

Description of trends and changes in the gender gap in the proportion of employees with top quintile annual earnings, and links with changes in family policy

Similar to the previous two indicators, average gender differences in access to top earnings decrease over the period examined. Figure **6.6** shows the cross-country unweighted average gender gap in the proportion of employees with top quintile annual earnings for the eighteen countries for which data are available at five-year intervals between 1985-1989 and 2010. It also shows the equivalent rates for both male and female employees.

Figure 6.6. **Cross-country unweighted average gender gap in top quintile earnings, 1985-2010**
With the average proportion of male and female employees with top quintile earnings



[102] Data for New Zealand and Portugal are missing entirely.

The cross-country average gender gap falls fairly steadily over the series from 23.7 percentage points in 1985-1989 to just under 16.6 points in 2010, due mostly to an improvement in access to top earnings for women. The average share of male employees with top quintile annual earnings decreases very slightly, from 30.2% in 1985-1989 to 28.2% in 2010. The average female rate, in contrast, jumps substantially from just under 6.5% to 11.6%. In other words, on average, large gains in women's ability to reach top quintile earnings have led to considerable decreases in inequality in the representation of women and men in high earning positions.

Such decreases in the gender gap are once more fairly widespread across the eighteen countries examined. Table **6.7** (overleaf) ranks countries in ascending order by the degree of change in the gender gap between the 1985-1989 five-year average and the gap in 2010, or the latest period available. It also shows the gender gap at the beginning and end of the series for context, summarises change on the indicators of family policy over the equivalent period, and contains descriptive statistics.

Fourteen of the eighteen countries for which data are available see the gender gap fall over the series, albeit to varying extents. Notably, decreases are generally largest in the liberal-type countries – particularly the United Kingdom, the United States and Canada – but are also considerable in several Scandinavian countries and Greece. Four countries – all of which are continental European states – see the gender gap increase over the series. In all four the gap is relatively moderate at the beginning of the series but comparatively large by the end. Generally, though, most countries see gender differences in the proportion of employees in the top-fifth of the annual earnings distribution decrease between 1985-1989 and 2010.

Again, this general trend provides little immediate support for the argument that family policies carry adverse effects for gender equality in occupational attainment, in as much as most countries couple at least some increase in leave and dual earner childcare provision with at least some *decrease* in gender earnings inequality. It is important to remember that this gender gap is based on *annual* earnings data, so this general decrease may at least partially reflect changes in annual working hours. That said, the results outlined earlier in table **5.5** (pg. 172) suggest changes in gender differences in working hours are mixed and generally

Table 6.7. **Summary of change in the gender gap in the proportion of employees with top quintile annual earnings, 1985-1989 to 2010 (five-year averages)[a]**

With changes in the nine indicators of family policy and policy indices (1985-1989 to 2010 (five-year averages)[a]), and descriptive statistics. Countries are ranked in ascending order by change in the gender gap in the proportion of employees with top quintile annual earnings

		Gender gap in the proportion of employees with top quintile annual earnings			Change in policy, 1985-1989 to 2010 (five-year averages)[a]												
					Dual earner-carer leave policy				Dual earner childcare policy				General family support policy				
	Country	Change, 1985-1989 to 2010[a]	1985-1989[a]	2010[a]	Dual earner-carer leave policy index	Mother-specific earnings-related leave, in effective weeks	Father-specific leave, in effective weeks	Gender-neutral earnings-related parental leave, in effective weeks	Dual earner childcare policy index	Proportion of children under three in publicly supported child care	Proportion of three-to-seven year olds in publicly-run pre-primary education or primary school	Public expenditure on childcare services per child aged under six	General family support policy index	Child benefit per month for two children, as a proportion of average earnings	Tax support for families	Total flat-rate parental leave and childcare leave available to mothers	Total effective weeks of paid maternity and parental leave available to mothers
1	United Kingdom	-10.5	26.0	15.5	0.31	4.75	0.44	0.00	0.95	1.87	8.90	4.9	-0.38	-2.63	-2.27	0.00	4.75
2	United States	-10.4	24.8	14.4	0.00	0.00	0.00	0.00	0.34	4.33	-0.57	1.7	0.50	0.00	6.94	0.00	0.00
3	Canada	-8.1	24.6	16.5	0.58	-0.65	0.00	19.25	0.06	0.00	2.87	0.0	0.05	3.00	-2.58	0.00	18.60
4	Sweden	-7.9	28.3	20.5	0.79	6.32	6.12	-5.64	1.11	15.27	16.04	3.0	-0.09	-1.58	-1.51	5.33	0.36
5	Greece	-7.1	18.9	11.8	0.10	1.00	0.40	0.00	0.16	4.00	2.86	0.1	-0.08	-0.52	-0.48	0.00	1.00
6	Denmark	-7.0	26.5	19.5	-0.28	-5.78	-0.25	2.12	1.16	11.53	30.82	2.1	0.07	1.33	-1.50	2.61	-3.66
7	Australia	-5.4	24.6	19.2	0.00	0.00	0.00	0.00	0.26	2.76	-1.83	1.5	0.48	9.97	-4.43	0.00	0.00
8	Finland	-4.3	23.1	18.9	0.43	0.38	4.85	-2.38	0.80	-3.93	28.36	2.3	-0.65	0.92	-6.60	-8.98	-2.00
9	Ireland	-4.0	21.1	17.0	0.12	2.09	0.00	0.00	1.43	-0.07	49.20	3.3	0.67	7.91	0.47	0.00	2.09
10	Norway	-3.4	29.9	26.5	1.00	3.00	3.66	14.60	1.22	16.67	29.80	1.8	0.02	-1.04	-3.86	13.86	17.60
11	Luxembourg	-3.0	19.1	16.1	1.73	0.00	17.24	0.00	1.23	16.72	21.19	3.0	0.91	2.54	-3.55	34.63	23.66
12	Spain	-2.4	10.6	8.2	0.44	3.20	2.60	0.00	1.10	14.50	20.26	2.6	0.05	-0.78	1.50	0.00	3.20
13	France	-2.2	17.9	15.7	-0.05	-2.20	0.71	0.00	0.74	1.88	0.83	4.6	-0.28	-5.56	-0.85	8.27	9.10
14	Italy	-2.1	18.5	16.4	0.66	5.28	5.28	-5.16	0.68	7.46	5.59	2.7	1.10	10.26	3.85	0.00	0.12
15	Germany	1.2	20.9	22.1	1.38	0.00	4.54	29.11	0.50	8.85	1.39	1.8	0.62	5.28	9.08	-16.81	12.30
16	Austria	1.9	17.9	19.8	0.16	0.00	1.56	0.00	0.39	5.92	6.86	0.8	-0.19	0.90	-3.00	-1.45	-4.53
17	Netherlands	4.5	21.0	25.6	0.82	4.00	5.96	0.00	1.31	4.00	35.47	3.6	0.09	-2.05	0.90	6.76	10.76
18	Belgium	6.2	18.5	24.7	0.34	0.04	3.33	0.00	0.55	0.73	3.97	3.1	-0.18	-2.13	-1.35	3.34	3.38
19	New Zealand	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	Portugal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mean		-3.55	21.79	18.24	0.47	1.19	3.14	2.88	0.78	6.25	14.56	2.39	0.15	1.43	-0.51	2.64	5.37
Pearson's r coefficent with change in gender gap			-0.50*	0.51*	0.28	0.00	0.29	0.09	0.13	-0.02	0.10	0.14	0.03	-0.04	0.10	0.00	0.12

Note: * = p<0.05 ** = p<0.01 *** = p<0.001. ^ = p<0.1. The bars symbolize the magnitude of change between 1992 and 2010[a]. Lighter grey bars show positive change, darker grey negative change.

[a] Australia, 1985-1999 to 2000-2004; Austria, 1990-1994 to 2000-2004; Belgium, 1990-1994 to 2000-2004; Denmark, 1985-1999 to 2000-2004; France 1985-1999 to 2005-2009; Germany, 1990-1994 to 2010; Greece, 1995-1999 to 2010; Ireland, 1990-1994 to 2010; Norway, 1985-1989 to 2000-2004; Spain, 1990-1994 to 2010; Sweden, 1985-1989 to 2005-2009. New Zealand and Portugal are missing entirely.

fairly modest[103]. In any case, the general pattern of development provides no direct evidence to suggest that women 'pay' for leave and childcare policies through inflated barriers to high earnings.

Inferences from relations between the size of changes in policy and the gender gap – illustrated by the correlation coefficients at the bottom of table **6.7** – are fairly similar. There is a positive if fairly weak correlation between changes in the gender gap and the dual earner-carer leave policy index, suggesting that gains in earnings equality are slightly smaller in countries where increases in dual earner-carer leave policy are larger. However, this overall relation is driven almost entirely by a positive correlation with change in father-specific leave. Similar to the negative association between father-specific leave and the female share of managers discussed in the previous section, this relation seems unlikely to be causal. Put differently, it is difficult to see how introducing or expanding father-specific leave could constrain women's relative access to high earnings, so perhaps the safest inference here is that both this specific correlation and that on the overall policy index are likely to be spurious.

Elsewhere, relations are generally nominal. Notably, there is a correlation of exactly zero between changes in the gender gap and effective weeks of flat-rate parental and childcare leave. Together with the absence of any convincing association on dual earner-carer leave policy, this (non-)correlation suggests that movements in the gender gap in top quintile earnings are almost entirely unrelated to changes in leave provision. Such a conclusion finds further support in the final column of table **6.7**, which shows only a weak positive correlation between changes in the gender gap and total effective weeks of leave available to mothers. More broadly though, the correlations shown at the bottom of table **6.7** suggest that changes in the gender gap in high earnings are mostly unconnected to developments in the various measures of family policy.

Fixed effects regression analysis for the gender gap in the proportion of employees with top quintile annual earnings

Table **6.8** (overleaf) summarises the results of the main two-way fixed effects linear regression models for the gender gap in the proportion of employees with top quintile earnings. Model **A** is the main fixed effects model for changes in the gender gap, and uses

[103] The Pearson's R correlation coefficient between change in the gender gap in usual weekly working hours and change in the gender gap in the proportion of employees with top quintile earnings is 0.50, suggesting changes in working hours may partially but not fully explain changes in equality in access to top annual earnings.

Table 6.8. **Two-way fixed effects models for the gender gap in the proportion of employees with top quintile earnings**

		Specification set:	Main specification					
		Model:	**A**		**B**		**C**	
		Dependent variable:	Gender gap in top quintile earnings		Proportion of male employees with top quintile earnings		Proportion of female employees with top quintile earnings	
Lag	Variable		B	SE	B	SE	B	SE
	Dual earner-carer leave policy							
t	Mother-specific earnings-related leave		0.121	(0.289)	0.008	(0.160)	-0.113	(0.169)
t	Father-specific leave		-0.070	(0.154)	-0.021	(0.085)	0.049	(0.090)
t	Gender-neutral earnings-related parental leave		0.222	(0.110) ^	0.101	(0.061)	-0.122	(0.064) ^
	Dual earner childcare policy							
t	Children under 3 in public childcare		-0.015	(0.146)	0.013	(0.081)	0.028	(0.085)
t	Children 3-6 in public pre-primary care or primary school		-0.063	(0.045)	-0.019	(0.025)	0.043	(0.026)
t	Public expenditure on childcare services		-0.356	(0.535)	-0.133	(0.296)	0.223	(0.313)
	General family support policy							
t	Child benefit per month for two chlldren		0.234	(0.160)	0.138	(0.088)	-0.096	(0.093)
t	Tax support for families		0.445	(0.201) *	0.211	(0.111) ^	-0.234	(0.117) ^
t	Flat-rate parental leave and childcare leave		-0.075	(0.100)	-0.069	(0.056)	0.006	(0.059)
t	Service Sector Size		-0.243	(0.243)	-0.076	(0.134)	0.167	(0.142)
t	Public Sector Size		-0.987	(0.506) ^	-0.673	(0.280) *	0.314	(0.296)
t	Crude birth rate		0.063	(0.471)	0.169	(0.261)	0.106	(0.275)
t-1	Female share of tertiary education students		-0.277	(0.258)	-0.109	(0.143)	0.168	(0.151)
t	Employment protection legislation index		1.481	(1.941)	-0.032	(1.075)	-1.513	(1.135)
t	Economic freedom index		0.109	(1.655)	0.229	(0.917)	0.120	(0.968)
		n	85		85		85	
		r-squared (within)	0.912		0.885		0.933	

Note : * = p<0.05 ** = p<0.01 *** = p<0.001. ^ = p<0.1. New Zealand and Portugal excluded from all specifications due to missing data. Finland in 2010 exluded from all specifications as diagnostics suggest it is a highly influential point that substantially changes results and inferences (see appendix **E**).

Specifications :

A-C. Two-way fixed effects (country and time) with country-specific time-trends and normal OLS standard errors. Main specification

the nine main indicators of family policy, plus six controls. **B** and **C** are similar, but use the individual male and female indictors as dependent variables. It is worth noting again that these models use the normal OLS standard errors, as opposed to the cluster robust standard errors used in all previous models. This does risk estimating incorrect standard errors – although, importantly, not incorrect coefficients – as residuals from these models are known to suffer panel heteroscedasticity and serial correlation (see appendix **B.4** (pp. 330-332)). However, on this particular indicator OLS standard errors are in almost all cases larger than the CRSEs – and indeed larger than other alternative standard errors, such as panel-corrected standard errors – and as a result represent the most 'conservative' option (see chapter **3.4** and table **D.3** in appendix **D** (pg. 380)).

Similar to the previous two indicators, these main specifications show few clear relations between changes in policy and the gender gap in the proportion of employees with top quintile earnings. First off, none of the dual earner policy indicators are statistically significant, at the 5% level at least. There is a tentative suggestion of a positive relation between the gender gap and changes in weeks of gender-neutral earnings-related leave, but this is significant only at the 10% level of confidence. Likewise, two of the three general family support indicators are also far from statistical significance. There is, though, a notable positive and significant coefficient on changes in tax support for the family. This relation is slightly unexpected, in that the literature says little about the effects of tax and transfer policies on equality in occupational attainment. It is possible, perhaps, that expanding financial support for the family produces some kind of disincentive for second-earner women to push for high earning positions, perhaps on account of increases in household net incomes. Alternatively, family-related tax subsidies may increase incentives for first- or sole-earners – typically men – to reach high wages if they reduce marginal tax rates on high earnings[104]. Either way, the suggestion that altering tax support for the family influences gender equality in high earnings is fairly novel.

[104] It is also plausible that certain family-related tax policies may have a stronger influence on male *net* earnings compared to female net earnings – perhaps because men are more likely to be a sole earner and therefore benefit from dependent spouse and family subsidies – and as a result artificially increase the proportion of male employees with top quintile earnings relative to female employees. As noted in chapter **3.3**, most of the annual earnings data here refer to pre-tax and transfer labour income so changes in tax policies should not directly influence observed annual earnings. However, out of necessity 17 cases use *net* labour income data (see chapter **3.3**). When these 17 cases are removed from model **A** the coefficient on tax support for the family does shrink slightly to 0.302 and the indicator does move out of statistical significance (p-value = 0.37). However, the coefficient on tax support for the family for the proportion of male employees with top quintile earnings reported in model **B** actually increases, from 0.205 to 0.256. In other words, changes in tax support for the family have a larger influence on the proportion of male employees with high wages when only cases that use *gross* income are included. For this reason the use of net earnings data in certain cases is not considered a sufficient explanation for this result.

Elsewhere, there is some suggestion of a negative relation between changes in the gender gap and the relative size of the public sector as an employer. This makes theoretical sense – as pointed out by Mandel (2012), governments typically strive to be 'responsible' employers so may be more likely to promote women to highly paid positions[105]. Coefficients on all other variables, though, are far from statistical significance[106]. As was also the case for the indicators of both gender segregation and the female share of managerial positions then, the main fixed effects models in table **6.8** are generally poor at explaining changes in women's relative access to high earnings.

As ever, it is possible that the operationalisation of leave policies in table **6.8** obscures some underlying relation with changes in total general leave. Table **6.9** presents results from a second set of models that use the alternative measures of leave policy. Models **A-C** are similar to **A-C** in table **6.8**, but substitute in 'total maternity and parental leave available to mothers' and 'effective weeks of childcare leave' for the indicators of mother-specific earnings-related leave, gender-neutral earnings-related parental leave and flat-rate parental and childcare leave. **D-F**, meanwhile, include an additional squared term on total maternity and parental leave available to mothers.

Using the alternative set of leave policy indicators produces more substantial results. In model **A**, the coefficient on total maternity and parental leave is positive and significant. In other words, in-line with the theorised 'trade off' effects of leave policy, increases in the total length of leave available to mothers are associated with decreases in women's relative access to high earnings. Importantly, using the alternative measures of leave also moves several other policy variables into or out of significance. The coefficient on tax support for the family, for instance, decreases by a third and moves *out* of significance at the 5% level, while curiously effective weeks of childcare leave are found to be negatively

[105] Similar to models of the gender gap in 'female-type' employment, because public sector size includes any employees working in public childcare services it is possible that it's inclusion in the models shown in tables **6.8** and, later, **6.9** could hide, distort or absorb some association between changes in three measures of public childcare provision and the gender gap in top quintile earnings. As a check against this, all models shown in tables **6.8** and **6.9** were re-run with public sector size removed. This made no difference to results – regardless of whether or not public sector size is included, none of the three childcare measures share a statistically significant association with changes in the gender gap in the proportion of employees with 'top quintile' earnings.

[106] The sensitivity analyses shown in appendix **F** (pp. 427-429) suggest that when cases imputed using LCVF/NVCB are removed from the model, the negative coefficient on public expenditure on childcare services increases in size and moves into significance at the 10% level. This would, if valid, provide at least a hint that increasing public spending on childcare can promote female occupational attainment. However, the coefficient on public childcare expenditure remains small and far from significance – even at the 10% level – in all other models regardless of whether cases imputed using LCVF/NVCB are used or not. As a result, it is considered safest not to place too much emphasis on this result.

Table 6.9. **Alternative two-way fixed effects models for the gender gap in the proportion of employees with top quintile earnings**

	Specification set:	Alternative measures of leave policy						Alternative measures of leave policy, with sqaured term					
	Model:	**A**		**B**		**C**		**D**		**E**		**F**	
	Dependent variable:	Gender gap in top quintile earnings (5-year interval)		Proportion of male employees with top quintile earnings (5-year interval)		Proportion of female employees with top quintile earnings (5-year interval)		Gender gap in top quintile earnings (5-year interval)		Proportion of male employees with top quintile earnings (5-year interval)		Proportion of female employees with top quintile earnings (5-year interval)	
Lag	Variable	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE
	Dual earner-carer leave policy												
t	Mother-specific earnings-related leave												
t	Father-specific leave	-0.316	(0.145) *	-0.144	(0.085)	0.172	(0.084) *	-0.334	(0.144) *	-0.157	(0.084) ^	0.177	(0.085) *
t	Gender-neutral earnings-related parental leave												
	Dual earner childcare policy												
t	Children under 3 in public childcare	-0.122	(0.132)	-0.036	(0.077)	0.086	(0.076)	-0.138	(0.131)	-0.047	(0.076)	0.091	(0.077)
t	Children 3-6 in public pre-primary care or primary school	-0.054	(0.039)	-0.015	(0.023)	0.040	(0.023) ^	-0.057	(0.039)	-0.016	(0.023)	0.041	(0.023) ^
t	Public expenditure on childcare services	0.295	(0.523)	0.167	(0.308)	-0.129	(0.302)	0.407	(0.525)	0.243	(0.306)	-0.164	(0.309)
	General family support policy												
t	Child benefit per month for two chlldren	0.168	(0.138)	0.095	(0.081)	-0.073	(0.080)	0.174	(0.136)	0.099	(0.079)	-0.075	(0.080)
t	Tax support for families	0.285	(0.158) ^	0.108	(0.093)	-0.177	(0.091) ^	0.309	(0.157) ^	0.125	(0.091)	-0.184	(0.092) ^
t	Flat-rate parental leave and childcare leave												
	Alternative measures of leave policy												
t	Total maternity and parental leave available to mothers	0.240	(0.092) *	0.093	(0.054) ^	-0.147	(0.053) **	0.578	(0.277) *	0.324	(0.161) ^	-0.254	(0.163)
t	(Total maternity and parental leave available to mothers)^2							-0.005	(0.004)	-0.004	(0.002)	0.002	(0.002)
t	Childcare leave	-0.161	(0.077) *	-0.093	(0.045) ^	0.068	(0.044)	-0.144	(0.077) ^	-0.081	(0.045) ^	0.062	(0.045)
t	Service Sector Size	-0.383	(0.224) ^	-0.138	(0.132)	0.245	(0.129) ^	-0.396	(0.222) ^	-0.148	(0.129)	0.249	(0.130) ^
t	Public Sector Size	-1.576	(0.512) **	-0.918	(0.301) **	0.658	(0.296) *	-1.700	(0.516) **	-1.003	(0.301) **	0.697	(0.303) *
t	Crude birth rate	0.439	(0.427)	0.344	(0.251)	-0.095	(0.246)	0.499	(0.425)	0.385	(0.247)	-0.114	(0.250)
t-1	Female share of tertiary education students	-0.484	(0.243) ^	-0.202	(0.143)	0.282	(0.140) ^	-0.399	(0.250)	-0.144	(0.145)	0.255	(0.147) ^
t	Employment protection legislation index	2.123	(1.562)	0.373	(0.919)	-1.751	(0.901) ^	2.800	(1.631) ^	0.836	(0.950)	-1.964	(0.959) *
t	Economic freedom index	-0.974	(1.546)	-0.233	(0.910)	0.741	(0.892)	-0.304	(1.615)	0.226	(0.940)	0.530	(0.950)
	Joint F-test on total leave available to mothers and its square (d.f)							4.310	(2, 30) *	2.690	(2, 30) ^	4.020	(2, 30) *
	n	85		85		85		85		85		85	
	r-squared (within)	0.926		0.891		0.946		0.930		0.899		0.946	

Note : * = p<0.05 ** = p<0.01 *** = p<0.001. ^ = p<0.1. The joint F-test on total maternity and parental leave available to mothers and its square tests the null that the two are jointly equal to zero. New Zealand and Portugal excluded from all specifications due to missing data. Finland in 2010 exluded from all specifications as diagnostics suggest it is a highly influential point that changes substantially results and inferences (see appendix **E**).

Specifications :

A-C. Two-way fixed effects (country and time) with country-specific time-trends and normal OLS standard errors. Leave indicators simplified into 'Total effective weeks of maternity and parental leave available to mothers', plus 'Effective weeks of father-specific leave' and 'Effective weeks of childcare leave'.

D-F. Two-way fixed effects (country and time) with country-specific time-trends and normal OLS standard errors. Leave indicators simplified into 'Total effective weeks of maternity and parental leave available to mothers' and its square, plus 'Effective weeks of father-specific leave' and 'Effective weeks of childcare leave'.

and significantly related to changes in the gender gap. Most notably, though, the coefficient on father-specific leave shifts to become large, negative and significant – that is, model **A** suggests that introducing or extending paternity leave or parental leaves reserved for fathers leads to an increase in equality in access to top annual earnings. This is fully consistent with theories of family policy trade offs (e.g. Ruhm, 1998; Mandel and Semyonov, 2005; Mandel and Semyonov, 2006; Hegewisch and Gornick, 2011), as providing male leaves should at least partly reduce the rationality behind statistical discrimination and perhaps encourage some redistribution of household labour (Nepomnyaschy and Waldfogel, 2007; Tanaka and Waldfogel, 2007). It is also important in substantive terms, inasmuch as it suggests that the provision of father-specific leave can offset at least in part the damaging effects of leaves available to mothers.

Models **D-F** add a squared term on total effective weeks of maternity and parental leave available to mothers. Broadly, results are fairly similar to those in **A-C**. The 'main effect' of changes in total leave available to mothers remains positive and significant, while the coefficient on the squared term is comparatively small and negative and the joint F-test on the two significant at the 5% level. The general suggestion then, is that increasing weeks of general maternity and parental leave available to mothers reduces women's relative access to top annual earnings, with the effect diminishing as the size of the change increases and the impact peaking at around a 54 week increase in leave. Elsewhere, the curious relation on changes in childcare leave moves out of significance, at the 5% level at least. The coefficient on changes in effective weeks of father-specific leave, meanwhile, remains negative and significant and actually increases in size slightly. Lastly, the negative coefficient on public sector size becomes highly significant – as it also was in **A** – indicating that an expansion in the size of the public sector as an employer may indeed increase women's ability to access for top earnings.

Summary

Unlike most of the previous indicators, the results presented in this section are a little inconsistent. The initial descriptive analysis shows that gender differences in top quintile earnings have fallen in almost all of the countries examined, and suggest that these gains in equality are generally unrelated to developments in family policy. In other words, it provides no immediate evidence that family policies either promote or, more importantly perhaps, harm gender equality in high earnings.

However, results from the regression models above provide considerable support for the

argument that certain policies may affect women's access to top wages. After removing trends from the data and controlling for other influences, the regression models find that increases in effective weeks of general maternity and parental leave available to mothers inflate gender differences in the proportion of employees with top-quintile annual earnings, while notably leaves reserved for fathers appear to have the opposite effect. It is important to reiterate that the models shown in tables **6.8** and **6.9** use normal OLS standard errors – rather than the cluster robust standard errors used in earlier regression analyses – and as a result estimated standard errors may be smaller than their 'true' value (see chapter **3.4**). However, the parameter estimates in table **6.9** – which importantly are not biased by non-spherical errors (Beck and Katz, 1995) – suggest in any case that the estimated effects of changes in general leave for mothers and father-specific leave on top earnings are large[107]. In other words, even if the standard errors and significance tests are of uncertain validity, there remains at least some suggestion that changes in the provision of leave policies – both for mothers and for fathers – have a meaningful impact on female access to top earnings.

These findings fit well with the existing empirical literature, where others also find links between increases in leave available to mothers and inflated gender pay gaps (Ruhm, 1998; Thévenon and Solaz, 2013). Notably though, no existing 'over time' comparative studies investigate the influence of paternity leave or father-specific leaves on gender differences in wages or top earnings. To some degree then, the link established above in table **6.9** is relatively novel. Importantly, results here are also compatible with those outlined in the previous section for changes in the female share of managerial employment. Taken together, findings generally support the argument that the provision of certain family policies – namely, leave entitlements for mothers – may reinforce 'glass ceilings' and damage women's relative occupational attainment (Ruhm, 1998; Mandel and Semyonov, 2005; Mandel and Semyonov, 2006; Shalev, 2008; Mandel, 2009; Mandel and Shalev, 2009; Mandel, 2011; Akgunduz and Plantenga, 2012; Mandel, 2012), albeit with the possibility that at least part of the effect can be offset by the provision of leaves reserved for use by the father only.

[107] All else equal, the estimated effect of 7.61 week extension to total maternity and parental leave – the mean change in total leave observed across countries between 1985-2010 – is a 4.11 point increase in the gender gap, while a 3.61 week increase in father-specific leave – again, the mean observed change over the series – is estimated to reduce the gender gap by 1.21 points. To put this in context, the change in the unweighted cross-country average gender gap between 1985-1989 and 2010 was a decrease of 7.10 percentage points.

6.6. Discussion

Theories of family policy 'trade offs' and existing empirical evidence suggest the large and widespread changes in family policy outlined in chapter **4** are likely to have some impact on gender job segregation and equality in occupational attainment (Ruhm, 1998; Blau et al, 2001; Mandel and Semyonov, 2005; Mandel and Semyonov, 2006; Shalev, 2008; Pettit and Hook, 2009; Mandel, 2009; Mandel and Shalev, 2009; Hegewisch and Gornick, 2011; Mandel, 2011; Akgunduz and Plantenga, 2012; Mandel, 2012; Thévenon and Solaz, 2013). Those countries that have extended leave entitlements for mothers over the series – to varying extents, almost all of the countries examined – should see a hardening of the 'glass ceiling' and heightened restrictions on women's access to high earnings and high status positions (Mandel and Semyonov, 2005; Mandel and Semyonov, 2006; Shalev, 2008; Mandel, 2009; Mandel and Shalev, 2009; Hegewisch and Gornick, 2011; Mandel, 2011; Mandel, 2012). This 'hardening' may be offset somewhat by the provision of leaves reserved for fathers, but this is likely to depend on the uptake or at least perceived uptake of the leaves by fathers. Those countries that have increased public childcare provisions, meanwhile, may perhaps see some increase in gender job segregation on account of an expansion in 'female-type' care service jobs. This is particularly likely to be the case when combined with an expansion in leave entitlements, so as to create a hostile private sector that helps push women into 'protected' public care service jobs (Mandel and Semyonov, 2006).

By and large, broad trends in gender job segregation and equality in occupational attainment are at odds with these expectations. The patterns of development outlined across this chapter show that most of the sample countries have seen a shift away from segregation and a softening of the glass ceiling on women's careers over the years examined. Gains are most widespread in the female share of managerial employment, but a majority of countries also see decreases in gender differences in employment in 'feminised' occupations and in access to the top-fifth of the earnings distribution. In other words, over the series most countries combine at least some expansion in leave and childcare policy with a decrease in segregation and an improvement in the relative position of female employees within the labour force.

Examining the size and timing of changes in policy and equality does however reveal some evidence to suggest that changes in family policy may influence or moderate the *magnitude* of gains in equality in occupational attainment. The initial descriptive analyses presented in sections **6.3** and **6.5** show little if any damaging effect of changes in policy

provision on either gender job segregation or equality in access to high earnings. However, those in **6.4** do hint at a link between changes in leave entitlements for mothers and gains in the female share of managerial employment – crudely, growth in the female share tends to be small or even negative in countries with large increases in weeks of maternity and parental leave available to mothers, and likewise larger in countries with only small changes to female leave entitlements. The initial suggestion then, is that extending weeks of leave available to mothers may constrain gains in women's representation amongst managers.

Results from the regression models shown across the chapter are a little more concrete. There is again no evidence of any relation between changes in family policy and the relative proportion of female employees working in feminised occupations, although in-line with the theory there is a link with the size of the wider public sector as an employer. However, the regression estimates in sections **6.4** and **6.5** show that – after controlling for trends in the data and other potential influences – increases in the length of general maternity and parental leave available to mothers are associated with both decreases in the female share of managers and increases in gender differences in access to top earnings. Notably, the results in **6.5** also suggest that introducing or extending leaves for fathers has the opposite effect on the gender gap in top-quintile earnings, all else equal. The broader inference then, is that certain family policies may indeed inadvertently damage women's position within the labour market, and more specifically that changes in leave – or perhaps more correctly, the gender balance of leaves – may influence women's relative ability to reach top jobs.

These results do suffer from limitations, particularly with regard to the sample and data used. As discussed earlier in section **6.1**, the three indicators used in this chapter to measure 'gender job segregation and equality in occupational attainment' are not comprehensive, and it is likely that there are other relevant aspects of women's position with the labour market that are not covered by the these measures. The indicators themselves, meanwhile, are constrained by the availability of comparable data. In particular, both of the first two cover European countries and the years 1992-2010 only, while the third – the gender gap in top quintile earnings – is measured only at five-year intervals.

Nonetheless, as far as the data and indicators used do capture the underlying concepts, the headline finding from this chapter is that altering the provision of leave can impact on women's relative career attainment. This finding fits fairly well with results from several

existing cross-sectional studies (Mandel and Semyonov, 2005; Mandel and Semyonov, 2006; Pettit and Hook, 2009; Mandel, 2011; Mandel, 2012), as well as those from the rather limited 'over time' comparative literature (Ruhm, 1998; Akgunduz and Plantenga, 2012; Thévenon and Solaz, 2013). Indeed, as discussed in the introduction to this chapter, these existing 'over time' studies concentrate mostly on the effects of leave on the general gender pay gap with only one (Akgunduz and Plantenga, 2012) examining how changes in leave impact on women's access to senior positions. Thus, to some degree findings from this chapter expand and extend existing knowledge and add important weight to the theoretical argument that leaves may be particularly harmful to women's access to top positions (Mandel and Semyonov, 2005; Mandel and Semyonov, 2006; Shalev, 2008; Mandel and Shalev, 2009; Mandel, 2011; Mandel, 2012).

It is important to reiterate that the broad trends outlined in this chapter suggest a general shift across countries towards greater equality in occupational attainment, so in substantive terms the relation may be best interpreted as a policy-induced constraint on *gains* in equality rather than an outright hardening of the 'glass ceiling'. It is also worth remembering that in both sections **6.4** and **6.5**, the association with changes in leave only emerges once leaves are measured through the alternative measure of total general maternity and parental leave available to mothers, as opposed to the various measures of separate leave 'types'. There may be statistical reasons for this discrepancy. For example, it is possible that splitting variation in total leave between several indicators of various types generates individual variables that are too 'slow-moving' – that is, that contain too little within-country variation – to produce identifiable relations with female attainment within a fixed effects model (Plümper and Troeger, 2007)[108]. More substantively though, it may also be the case that any adverse effects attached to leave correspond less to the provision of any particular type of entitlement, and more to the length of total leave on offer to the mother – in other words, that leave-driven trade off effects are blind to the structure or detail of the leave offered. In any case, the inference remains that leave entitlements in general might impede women's access to high-level positions.

Establishing that changes in leave policies may damage women's careers is particularly important in light of results from the previous chapter. There, estimates suggest that changes in leave entitlements may promote female activity and encourage equal market participation, if only when looking at 25-34 year olds. Combined with findings from this

[108] This argument is weakened somewhat, however, by the significant associations found in the previous chapter between the individual dual earner-carer leave policy indicators and the gender gap in the labour force participation rate.

chapter, the general inference is that leave policies may indeed carry paradoxical effects for women's employment – in other words, they may as theorised simultaneously promote equal participation and inadvertently harm women's positions within the labour market (Mandel and Semyonov, 2005; Mandel and Semyonov, 2006; Shalev, 2008; Mandel, 2011; Mandel, 2012). This is important of course, because it adds weight to Mandel and Shalev's (2009) assertion that it is difficult to provide an unambiguously 'woman-friendly' set of family policies, and more substantively that it is necessary for policy-makers to weigh up and balance the competing interests of women when considering leave provisions. To be sure, maternity and parental leaves hold other objectives and benefits – such as for child health and development (Berger et al, 2005; Rossin, 2011) – aside from female employment. However, the presence of contradictory effects continues to imply that policy-makers need to at least consider the potential damage caused by the entitlement when deciding on desired levels of provision.

That said, the suggestion from section **6.5** that father-specific leaves can help promote female career attainment should not be downplayed. Taken together with results for leaves available to mothers, the safest inference here is probably that father-specific leaves can help offset at least part of the damaging effect of leaves for mothers – perhaps by reducing the grounds for statistical discrimination, for example – rather than having a positive impact on female attainment in and of themselves. In other words, the suggestion from this chapter is that what matters most for women's relative occupation attainment may be the gender-balance of leaves. Nevertheless, if female-focused leaves are considered valuable for their effects on female activity and wider associated benefits, then results here suggest that they may be provided at a reduced cost to women's occupational attainment if offered alongside extensive leaves reserved for fathers.

Elsewhere, results from this chapter suggest that both dual earner childcare provisions and family-related tax and transfer policies have few clear adverse – or indeed, beneficial – effects on women's position within the labour market. As far as public childcare services for children under three are concerned, this is fairly encouraging – when combined with results from chapter **5**, it implies that increases in provision may promote female economic activity and help close gender gaps in participation seemingly without damaging women's careers. However, for both childcare for slightly older children and family-related tax and transfer policies, the absence of any clear and consistent associations here mean that – when taken alongside results from chapter **5** – changes in both of these types of policy seem to have little impact on gender differences in employment outcomes in general. Again, these policies do have wider objectives outside of the labour market. Pre-

primary education, for instance, is found to promote child performance in later stages of education (Berlinski et al, 2009; Schütz, 2009), while childcare more generally is linked in various ways to child health and development, not always positively (Melhuish, 2004) but with beneficial effects that appear particularly large for children from disadvantaged backgrounds (Anderson et al, 2003; Melhuish, 2004). Child benefit and family-related tax and transfer polices, meanwhile, are as mentioned in the previous chapter often used as an important tools for tackling child poverty (Oxley et al, 1999; Pressman, 2011; Gornick and Jäntti, 2012). Nonetheless, from the perspective of employment alone, results from this and the previous chapter suggest that both childcare services for children aged 3-6 and 'general family support' tax and cash transfer policies appear mostly unimportant for women's relative experience of the labour market.

All this said, it remains possible that relations differ between or vary across groups or subsections of the population. Indeed, given that demographic and socio-economic characteristics are known to be important determinants of women's labour market outcomes (e.g. Evertsson et al, 2009; England et al, 2012), it is perhaps even probable that the effects of family policy will differ between groups. Thus, it is possible that both childcare for older children and tax and transfer policies do have some influence on employment outcomes for certain women, but that the effect is not of sufficient size to show up as a clear association at the aggregate level. More importantly, perhaps, it may be less the case that leave entitlements simultaneously promote the activity and damage the careers of *all* women – as is implied by the discussion above – and more that the benefits and costs of provision fall on certain and perhaps different groups of women.

As discussed earlier in chapter **2.2**, education is particularly likely to be one such moderating factor. More specifically, the theory suggests that any effects of policy on labour market activity should be most pronounced amongst men and women with lower levels of education, while any adverse effects attached to leave may be particularly severe for the careers of highly educated women (Shalev, 2008; Mandel and Shalev, 2009; Mandel, 2011; Mandel, 2012). This is the subject of the next chapter, which examines links between changes in family policy and gender differences in employment outcomes across levels of education.

Chapter 7. Do the effects of changes in family policy differ by levels of education? Descriptive and time-series cross-section regression analyses of links between changes in family policy and gender equality in employment outcomes across levels of education

So far, the investigations carried out in this thesis have treated men and women as single homogeneous groups under the implicit assumption that the effects of family policy are uniform across *all* individuals of the same sex. This assumption is of course unlikely to be correct – indeed, as discussed in chapter **2**, it is theoretically likely that the influence of family policy will differ across individuals with varying demographic or socio-economic backgrounds. Recently, the comparative family policy literature has paid much attention to whether or not the influence of policy varies across class divisions, and in particular to differences in the effects of provision between individuals with different levels of education (Shalev, 2008; Mandel and Shalev, 2009; Mandel, 2009; Mandel, 2011; Mandel, 2012; Korpi et al, 2013).

First off, the effects of policy on economic activity are expected to be stronger for women with lower levels of education than for their highly educated counterparts, whose participation tends to be high regardless of policy context (Shalev, 2008; Mandel, 2011; Mandel, 2012). Dual earner leave policies, for example, are more likely to promote participation amongst low skilled women where labour market attachment tends to be relatively weak (Mandel, 2011; Mandel, 2012). Likewise, public childcare provisions should be especially valuable for women with low levels of educational attainment as the lower market wages typically commanded by these women mean that private childcare costs act as a particularly punishing effective tax on maternal employment (Shalev, 2008; Mandel, 2012). Moreover, any discouraging effects of family-related cash transfers and tax subsidies may also impact disproportionately on low skilled women, in this case because of the higher relative value of any transfers to market wages.

Similarly though, any negative trade off effects of policy on women's relative occupational attainment are also likely to be conditioned by education. In particular, any adverse effects associated with maternal leave programmes are expected to fall mostly on relatively advantaged, highly educated women (Shalev, 2008; Mandel and Shalev, 2009; Mandel, 2011; Mandel, 2012). As covered earlier, leave entitlements for mothers may damage women's ability to be compete for highly-skilled and highly-paid positions as – should they cause women to temporarily exit the labour force for longer than would otherwise be the

case – they may lower female human capital and encourage statistical discrimination (Ruhm, 1998; Mandel and Semyonov, 2006; Shalev, 2008; Hegewisch and Gornick, 2011; Mandel, 2011; Mandel, 2012). As it is highly-educated individuals who are most likely to be candidates for these elite positions, it is the attainment of highly educated women relative to similarly educated men that is at particular risk from any trade-off effects associated with leave entitlements (Mandel, 2012). Together with the expected class-conditioned effects of policy on market activity, this produces a theoretical inter-class 'policy paradox' with low skilled women the primary beneficiaries of family policy provision and their highly educated counterparts – for the most part, at least – the inadvertent benefactor.

Mandel and other proponents of this view illustrate the trade-off using cross-sectional data (Mandel and Shalev, 2009; Mandel, 2011; Mandel, 2012). While activity rates are universally high amongst highly educated women, participation amongst their low skilled peers tends to be very low in countries that provide little in the way of female-friendly policy – particularly the Southern European states – and comparatively high in countries with extensive leave and public childcare provisions (Mandel and Shalev, 2008: 29; Mandel, 2009: 704; Korpi et al, 2013: 17). Conversely, women's access to senior positions and the highest earnings bands is lower in Scandinavia than elsewhere (Mandel, 2009: 700), while countries that are generous providers of dual earner policy tend to see comparatively large gender pay gaps amongst highly educated men and women (Mandel, 2012: 253) and a smaller gap between those with low levels of educational attainment (Korpi et al, 2013: 23). In other words, in the cross-section, the provision of dual earner-type policies appears to benefit less educated women through increased labour market activity but also cause particular harm to highly skilled female employees through a hardening of the glass ceiling on career attainment and earnings.

Only a single 'over time' study explores differential relations between policy and labour market outcomes at varying levels of education across both countries and time (Nieuwenhuis, 2014). Notably, the findings of this study are the opposite of that predicted by the theory and cross-sectional evidence – using the motherhood employment gap as the dependent variable, Nieuwenhuis (2014) finds that within-country changes in leaves are more beneficial for the market participation of mothers with *more* education, while the effects of changes in transfers do not differ across levels of education (2014: 108). This solitary study is limited, however, in that it looks only at the differential effects of policy on headcount employment.

This chapter examines whether the effects of changes in family policy differ across levels of education. More specifically, it explores how changes in policy relate to measures of both gender differences in labour market participation and gender equality in occupational attainment once indicators of both are broken down by levels of educational attainment. In doing so, it looks to provide answers to the thesis' third research question – that is, do relations between within-country changes in family policy and within-country changes in the various areas of gender equality in employment differ with levels of education?

The structure of this chapter is similar to that used in chapters **5** and **6**. Section **7.1** offers a brief review of the data and methods used, while **7.2** provides an overview of cross-sectional associations between family policy and the various measures of gender equality in employment at differing levels of education. Sections **7.3-7.5** represent the core of the chapter. **7.3** presents the results of descriptive and fixed effects regression analyses for the gender gap in the labour force participation rate by levels of education, while **7.4** and **7.5** do the same for two indicators of occupational attainment – the female share of managers, by education level, and the gender gap in the proportion of employees with top quintile earnings, by education level, respectively. Lastly, **7.7** discusses results and concludes.

7.1. Data and methods

This chapter once again explores associations through the analysis of country-level measures of both family policy and gender equality in employment. Family policies are captured primarily through the nine main indicators outlined earlier in chapter **3.2**, albeit with the three policy indices also used in the more descriptive parts of the chapter and the alternative measures of leave policy used at certain points were appropriate. Gender equality in employment, meanwhile, is measured through three country-level indicators, each of which are differentiated by levels of education. Gender differences in labour market activity at varying levels of education are captured by the gender gap in the labour force participation rate (25-49 year olds; 25-29 year olds; 30-34 year olds) for those with low, medium and high education. This is the only measure of labour market activity used in this chapter, in part due to constraints on space. Women's occupational attainment relative to their similarly educated male peers is measured through two indicators - the female share of managers (all ages) with low, medium and high education, and the gender gap in the proportion of employees with top quintile earnings for employees (25-54 year olds) with low, medium and high education.

Data for the labour force participation rate and the female share of managers come from Eurostat, where unfortunately education-differentiated data series are available only from 1992. As a result, the sample on these indicators is limited to sixteen European countries in the sample and the period 1992-2010. The third indicator is extracted from the Luxembourg Income Study and is available from 1985 onwards, but is again measured only at five-year intervals (see chapter **3.3** for more details).

Analysis is conducted primarily through fixed effects multiple linear regression, albeit once again with the support of fairly detailed descriptions of trends and changes in each indicator at each level of education and a simple bivariate analysis of any immediate links with changes in family policy. In this case, due to the volume of data to be presented, the description of links with policy concentrates mostly on associations with the three policy indices. Specifications of the regression models themselves are mostly similar to those used in the previous two chapters. Each measure of gender equality at each level of education is examined through its own set of models. In this chapter, due to constraints on space, only models that use the 'gender gap' or gender difference versions of the relevant indicators are presented in the chapter itself. Full results including models with the individual male and female measures as dependent variables are though given in tables **D.5**-**D.12** in appendix **D** (pp.382-389). The key independent variables across models are again the nine individual family policy indicators, although certain specifications do use the alternative set of leave policy indicators for reasons explained earlier in chapter **3.2**. Each model also includes several controls. These controls are identical to those used in the equivalent models earlier in chapter **5** and **6**, with the exception of the female share of enrolment in tertiary education which is dropped from all models. Justifications for and details of these controls were given earlier in chapter **3.4**.

All models are estimated using ordinary least squares (OLS) and all use two-way fixed effects – that is, both country and time fixed effects – to account for unobserved unit and period effects. To reiterate, the use of country fixed effects also eliminates all between-country variation in both the dependent and independent variables, so estimated relations are based on within-country changes in the included variables only. All models include country-specific time trends to de-trend the variables and reduce the likelihood of spurious relations. Finally, models for the gender gap in the labour force participation rate and for the female share of managers again use one-way cluster robust standard errors (CRSEs) to correct for non-spherical errors caused by panel heteroscedasticity and serial correlation (see chapter **3.4** and appendix **B.4**. (pp. 330-332) for further discussion of

these technical details). It should be noted, though, that models for the proportion of employees with top-quintile earnings use heteroscedasticity-robust standard errors only – that is, standard errors that correct for heteroscedascity in the residuals but not for cluster-related issues such as serial correlation. This is because, similar to models for the overall gap in top quintile earnings shown in the previous chapter, in certain instances the CRSEs are smaller and therefore less conservative than either heteroscedasticity-robust or normal OLS standard errors, possibly due to the relatively small number observations available for these models (Angrist and Pischke, 2009: 319; Wooldridge, 2010: 311).

7.2. Cross-sectional associations

As noted above, almost all of the existing empirical evidence on variations in the effects of family policy across levels of education comes from between-country cross-sectional studies (Mandel and Shalev, 2009; Mandel, 2009; Mandel, 2011; Mandel, 2012; Korpi et al, 2013). As a way of starting the chapter and in part to help familiarise the reader with the data used, it is worth briefly replicating these studies and exploring cross-sectional links between the thesis' measures of family policy and gender equality in employment at the various levels of education. The following describes cross-sectional relations in 1997[109], beginning with links between policy and gender differences in labour market participation for individuals (25-49 year olds) with low, medium or high education.

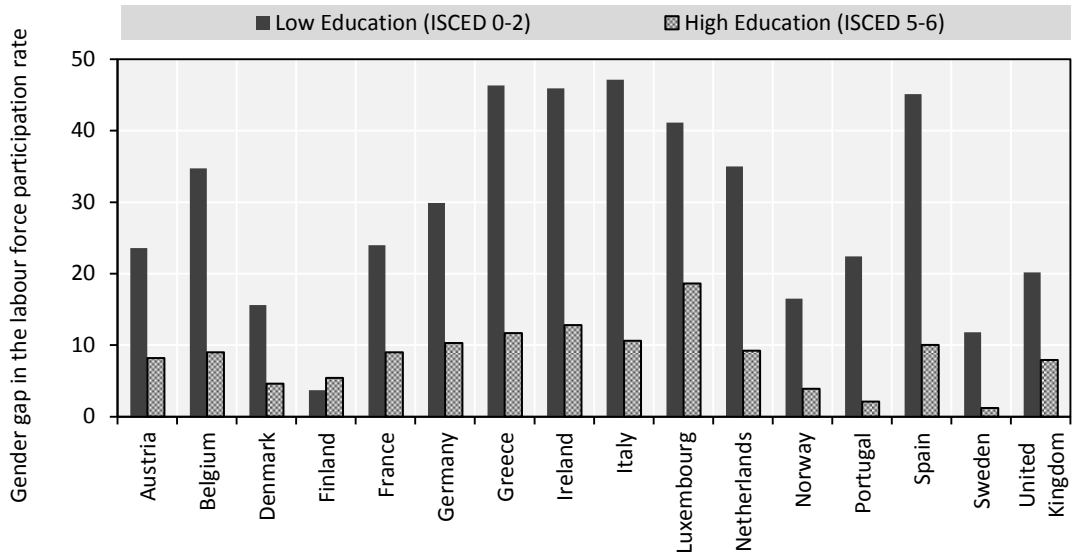
Gender gap in the labour force participation rate, by education level

The extent to which gender equality in economic activity is structured by education differs markedly across countries. This is illustrated by figure **7.1** (overleaf), which shows the gender gap in the labour force participation amongst men and women (25-49 year olds) with low (ISCED 0-2) and high (ISCED 5-6) education, by country and for 1997.

The figure does show some commonalities across countries – for instance, in all but one of the sample countries the gender gap in labour participation is larger amongst less educated men and women than amongst their highly-educated counterparts. However, the *degree* to which gender gaps vary across levels of education differs considerably between countries. Notably, most of this variation is due to cross-national differences in the gender gap for men and women with low levels of education. Gender differences in participation

[109] 1997, rather than 1998, is used in this chapter due to unusually high rates of missing data for the gender gap in the labour force participation by levels of education in 1998.

Figure 7.1. **Gender gap in the labour force participation rate (25-49 year olds), by education level, 1997**



amongst less educated individuals vary widely, from a high of just over 47 percentage points in Italy to a low of 3.7 points in Finland, and with a cross-country standard deviation of 13.7 points around a mean of 28.9. In contrast, the gap amongst highly educated men and women is far more consistent – here, the cross-country standard deviation stands at just 4.3 percentage points around a mean of 8.4. Clearly, gender differences in market participation amongst less educated individuals are far more sensitive to variation in societal context than are differences in activity between highly educated men and women.

Table **7.1** shows how these variations relate in the cross-section to the provision of family policy. It contains a series of Pearson's R correlation coefficients between each indicator of family policy and the gender gap in the labour force participation rate (25-49 year olds) at each level of education.

Notably, table **7.1** shows that most correlations are fairly uniform across levels of education. In particular, both dual earner policy indices – as well as several of the individual dual earner policy sub-indicators – are negatively correlated with the gender gap across the board, with the strength of the relation broadly similar regardless of whether the gender gap covers individuals with low, medium or high levels of education.

Table 7.1. **Correlations between measures of family policy and the gender gap in the labour force participation rate (25-49 year olds), by education level, 1997**

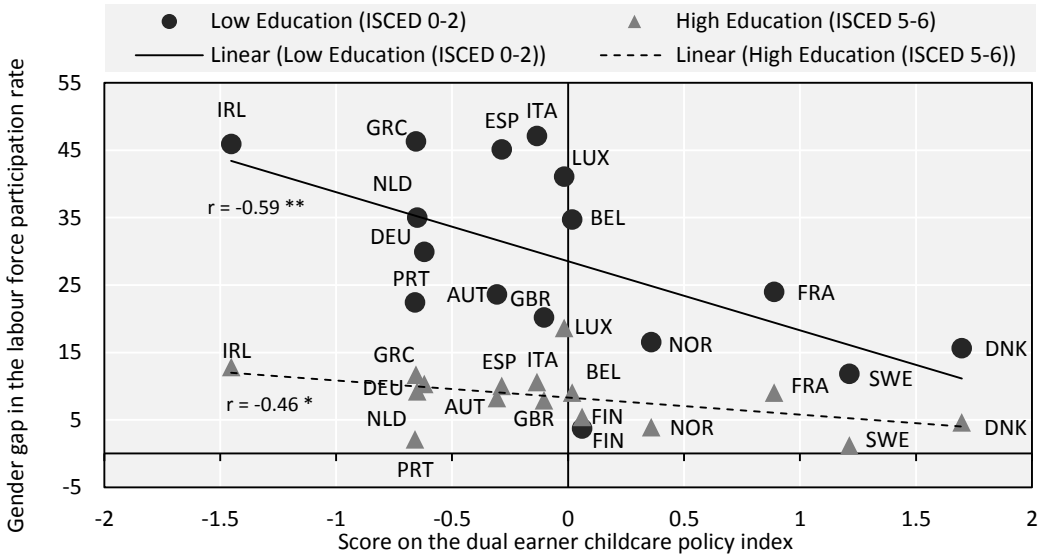
	Pearson's R correlation coefficients		
	Gender gap in the labour force participation rate (25-49 year olds)		
	Low education (ISCED 0-2) [a]	Medium education (ISCED 3-4) [a]	High education (ISCED 5-6) [a]
Dual earner-carer leave policy index	-0.44 ^	-0.45 ^	-0.40
Mother-specific earnings-related leave, in effective weeks	0.52 *	0.50 *	0.56 *
Father-specific leave, in effective weeks	-0.56 *	-0.50 *	-0.48 ^
Gender-neutral earnings-related parental leave, in effective weeks	-0.58 *	-0.60 *	-0.59 *
Dual earner childcare policy index	-0.59 *	-0.56 *	-0.46 ^
Proportion of children under three years of age in publicly supported child care	-0.64 **	-0.62 *	-0.63 **
Proportion of children between three and six years of age in publicly run pre-primary education or in primary school	-0.05	-0.11	0.01
Public expenditure on childcare services per child aged under six	-0.63 **	-0.51 *	-0.41
General family support policy index	-0.04	0.02	0.41
Child benefit per month for two chlldren, as a proportion of average earnings	-0.24	-0.22	0.15
Tax subsidy for the family	0.27	0.22	0.46 ^
Flat-rate parental leave and childcare leave available to mothers, in effective weeks	-0.20	-0.02	0.33
n	16	16	16

Note: * = p<0.05 ** = p<0.01 *** = p<0.001. ^ = p<0.1

a. Australia, Canada, New Zealand and the United States missing

This is not to say, though, that the *size* of any effect is necessarily similar across levels of education. Indeed, given that variance in the gender gap is far higher at low levels of education, the magnitude of any effect associated with dual earner policy is likely to be far larger amongst those men and women with lower formal qualifications. This is illustrated by figure **7.2** which plots, for 1997, scores on the dual earner childcare policy index against the gender gap in the labour force participation rate for those with low and high education. While the relation is negative at both levels of education and the association perhaps a little 'tighter' for those with high education, the slope is far steeper for the gender gap in the participation rate amongst less educated men and women. In other words, despite comparable correlations, the inference emerging from figure **7.2** is that the provision of dual earner childcare policy has a greater influence on equality in activity amongst those with low formal education.

Figure 7.2. **The dual earner childcare policy index and the gender gap in the labour force participation rate for men and women with low and high education**
1997, with fit lines



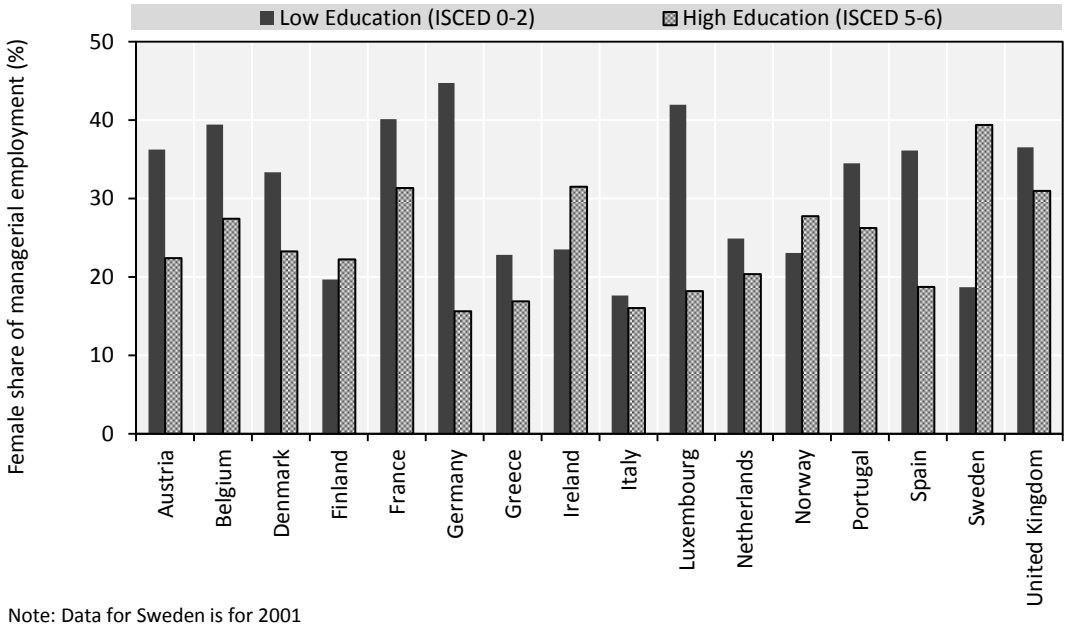
Note: * = p<0.05 ** = p<0.01 *** = p<0.001. ^ = p<0.1. see figure **4.1** for abbreviations

Cross-sectional associations between general family support policy and gender differences in participation at varying levels of education are somewhat simpler. The overall index shares a weak negative association with the gender gap at low levels of education, no relation at medium education and a moderate positive correlation with the gap amongst those with high formal qualifications. A similar pattern is evident across all three sub-indicators. Curiously then, the broad suggestion here is that any damaging effects of general financial support are concentrated on activity amongst individuals with high education, rather than on their less educated peers.

Female share of managerial employment, by education level

The structuring of women's access to managerial employment by education is a little inconsistent across countries. Figure **7.3** shows the female share of managerial employment amongst managers with equivalent education, for those with low and high education, by country in 1997.

Figure 7.3. **Female share of managerial employment amongst managers with equivalent education level, 1997**



Note: Data for Sweden is for 2001

In general, women hold a greater share of managerial employment amongst managers with low education than amongst mangers with high-level qualifications. This is true in twelve of the sixteen sample countries, with differences between education levels in certain cases substantial. In Germany, for instance, the female share amongst managers with low education is – at just under 45% – around 30 percentage points higher than the female share of highly educated managers. The inference in these countries then is that low-skilled women are more able to compete with similarly educated men for managerial positions than are their highly educated counterparts.

However, in four other countries the female share is *larger* among managers with high-level qualifications. Notably, this group includes three of the four Scandinavian nations – Finland, Norway and Sweden – where, according to Mandel and others (Shalev, 2008; Mandel, 2009; Mandel and Shalev, 2009; Mandel, 2011; Mandel, 2012), opportunities for highly educated women are expected to be most restricted. Moreover, in these countries

the female share of highly educated managers tends also to be high in absolute terms – for example, in Sweden the female share is approaching equality at just under 40%. In other words, in these four countries highly educated women are generally *more* able to compete with similarly educated men for managerial positions, both in real terms and relative to less educated women.

From the start then, between-country variations in female access to managerial employment at differing education levels are at least a little out of line with the argument that certain family policies – especially leave policies – should cause particular damage to the careers highly educated women. This is made more concrete by panel **A** in table **7.2**, which shows how cross-country variations in the female share correlate with the provision of family policy.

The table shows inconsistent associations between the various indicators of leave policies and the female share of managers with low or moderate levels of education. The dual earner-carer leave policy index, for example, is negatively associated with both. Conversely, the provision of 'general family support' flat-rate parental and childcare leave shares a moderate positive correlation with the female share of moderately educated managers, and a strong positive correlation with the female share of managers with low levels of education. It is probably a little dangerous to draw firm inferences from such inconsistent relations, but there is perhaps some suggestion here that dual earner-type leaves hamper, and general family support-type leaves actually help, less educated women to compete with similarly educated men for managerial positions.

Perhaps more importantly though, the table also shows little clear linear association between the provision of leave and the female share of managers with high education. Both the dual earner-carer leave policy index and effective weeks of 'general family support' flat-rate leave are uncorrelated with the female share of highly educated managers, although there are conflicting relations amongst the individual component dual earner-carer leave indicators – mother-specific earnings-related leave, for example, shares a strong negative correlation with the female share of highly educated managers, while

Table 7.2. **Correlations between measures of family policy and indicators of gender equality in occupational attainment, by education level, 1997**

	Pearson's R correlation coefficients					
	A			**B**		
	Female share of managerial employment amongst managers with equivalent education			Gender gap in the proportion of employees with top quintile earnings		
	Low education (ISCED 0-2) [a]	Medium education (ISCED 3-4) [b]	High education (ISCED 5-6) [b]	Low education (ISCED 0-2) [c]	Medium education (ISCED 3-4) [c]	High education (ISCED 5-6) [d]
Dual earner-carer leave policy index	-0.37	-0.32	0.03	0.26	0.23	0.67 **
Mother-specific earnings-related leave, in effective weeks	0.13	0.01	-0.59 *	-0.04	0.09	0.29
Father-specific leave, in effective weeks	-0.10	-0.08	0.28	0.08	-0.05	0.59 *
Gender-neutral earnings-related parental leave, in effective weeks	-0.54 *	-0.33	0.29	0.35	0.30	0.45 ^
Dual earner childcare policy index	0.19	-0.25	0.26	0.00	0.05	0.50 *
Proportion of children under three years of age in publicly supported child care	-0.02	-0.30	0.38	0.25	0.00	0.54 *
Proportion of children between three and six years of age in publicly run pre-primary education or in primary school	0.37	0.06	0.05	-0.41	0.09	-0.12
Public expenditure on childcare services per child aged under six	0.00	-0.32	0.15	0.10	0.04	0.62 *
General family support policy index	0.61 *	0.33	-0.15	-0.19	-0.20	0.23
Child benefit per month for two chlldren, as a proportion of average earnings	0.24	0.09	0.07	0.14	0.03	0.58 *
Tax subsidy for the family	0.71 **	0.36	-0.31	-0.35	-0.11	-0.24
Flat-rate parental leave and childcare leave available to mothers, in effective weeks	0.45 ^	0.32	-0.07	-0.22	-0.40	0.18
Total general maternity and parental leave available to mothers	0.06	0.06	0.17	0.35	0.23	0.68 **
n	15	16	16	15	16	16

Note: * = p<0.05 ** = p<0.01 *** = p<0.001. ^ = p<0.1

a. Australia, Canada, New Zealand, Sweden and the United States missing

b. Australia, Canada, New Zealand and the United States missing

c. Five year (1995-1999) mean average. Australia, France, Germany, New Zealand and Portugal missing

d. Five year (1995-1999) mean average. France, Germany, New Zealand and Portugal missing

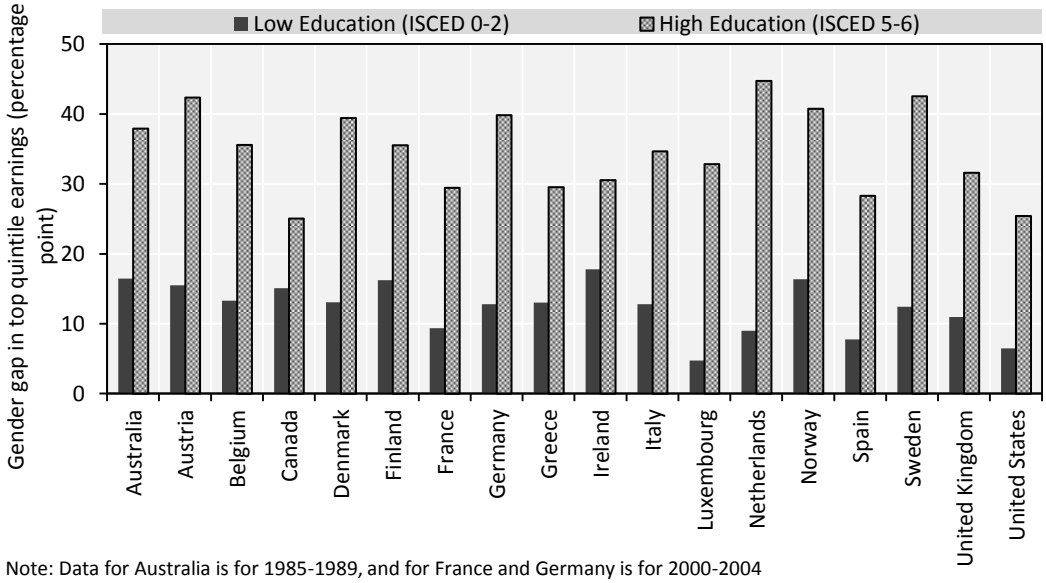
gender-neutral earnings-related leave has a moderate positive association with the same female share. Broadly though, the suggestion from table **7.2** is that highly educated women are no more or less able to compete with similarly educated men for managerial employment in countries that are generous providers of either dual earner or general family support-type leaves.

To reinforce the point a little further, the last row in panel **A** – which shows correlations between total effective weeks of maternity and parental leave available to mothers and the female share at the three levels of education – suggest that total leave may even share a weak *positive* association with the female share of highly educated managers. In other words, the female share of managers with high education is if anything slightly higher in countries that provide longer overall leave entitlements for mothers. This, of course, provides little support for the argument that leave policies damage the relative attainment of highly educated – or indeed, any other – women.

Gender gap in the proportion of employees with top quintile annual earnings, by education level

Cross-country variations in the second indicator of gender equality in occupational attainment – the gender gap in the proportion of employees with top quintile annual earnings – offer more support for arguments around class-based trade-offs. Figure **7.4** shows the gender gap in the proportion with top quintile earnings for those with low and high education, by country and for the five-year interval 1995-1999.

Figure 7.4. **Gender gap in the proportion of employees with top quintile earnings by education level, 1995-1999**



Note: Data for Australia is for 1985-1989, and for France and Germany is for 2000-2004

In all countries the gender gap is far larger amongst employees with high education than it is for those with low educational attainment, indicating that women with low levels of education are universally more able to compete with similarly educated men for high earning positions than are their highly educated counterparts. There is, however, a fair amount of cross-country variation in the size of the gender gaps, particularly at high levels of education.

Gender differences in the proportion of highly educated employees with top annual quintile earnings range from a peak of 45 percentage points in the Netherlands to a low of 25 points in Canada – in other words, in the Netherlands the proportion of highly educated women in the highest earnings band is almost 50 percentage points lower than the proportion of highly educated men, while the equivalent difference in Canada is only 25 points. Notably, and in-line with the theory, the largest gender gaps for employees with high education are generally in the Scandinavian countries. Conversely, the smallest gaps are seen mostly in Southern European and liberal-type countries. In other words, highly educated women are more able to compete for top earnings in countries that are typically low providers of leave policies and indeed family policies more generally.

Patterns in the gender gap amongst employees with low education are fairly different. The largest gaps come from a variety of countries – with gender differences particularly large in Ireland, Australia and Norway – as do the smallest gender gaps, with France, Luxembourg, the Netherlands, Spain and the United States all showing gaps less than ten percentage points. Generally, the size of the gender gap in the proportion of low-skilled employees with top quintile earnings bears little relation to the usual country groupings or policy 'regime' types.

The structuring of relations between policy and earnings equality by education is made more explicit by the correlations shown in panel **B** in table **7.2** (pg. 245). The dual earner-carer leave policy index, for instance, is positively correlated with the gender gap at all levels of education but shares a far stronger association with the gap amongst highly educated employees. In other words, in countries that are generous providers of dual earner-carer leave policies women with high levels of education find it particularly hard to compete with similarly educated men for top wages[110]. Likewise, weeks of 'general family

[110] There are also similar associations between the three gender gaps and the dual earner childcare index. However, this may be a consequence of the correlation between the dual earner leave and childcare policy indices.

support' flat-rate parental and childcare leave also share a positive if weak association with the gender gap amongst highly educated employees, although notably correlations with the gap for men and women with low or medium education are negative. Broadly, though, leave entitlements are associated with larger inequalities at all levels of education but with the association particularly strong for female employees with high-level qualifications.

This general association is illustrated a little further by the final row in panel **B**, which shows associations between total effective weeks of maternity and parental leave available to mothers and the gender gap at the three levels of education. Associations are positive across the board, but the correlation is particularly strong for the gap in top quintile earnings amongst highly educated employees. Put differently, in countries with longer general leave entitlements, women with high levels of education are particularly less able to compete with similarly educated men for top wages.

Summary

In sum, cross-sectional associations between family policy and the three education-differentiated indicators of labour market equality used here are mostly but not fully in-line with the class-based arguments put forward by Mandel and colleagues (Shalev, 2008; Mandel, 2009; Mandel and Shalev, 2009; Mandel, 2011; Mandel, 2012). Firstly, dual earner policies are associated with decreased gender differences in labour market participation at all levels of education, but with effects that appear particularly strong for the gender gap amongst men and women with low levels of education. Similarly, leave entitlements are associated with increased gender differences in high earnings across the board, but may be especially damaging to highly educated women's relative access to top wages. Notably, there is no evidence of an equivalent relation for the female share of managers. Nonetheless, the broad inference is that, in the cross-section, less educated women appear the primary 'winners' from the provision of family policies, and their highly educated counterparts possibly the chief 'loosers' (Mandel, 2009; Mandel and Shalev, 2009; Mandel, 2011; Mandel, 2012). It is against this background that the following three sections examine the impact of changes in policy on outcomes across levels of education.

7.3. Gender gap in the labour force participation rate, by education level

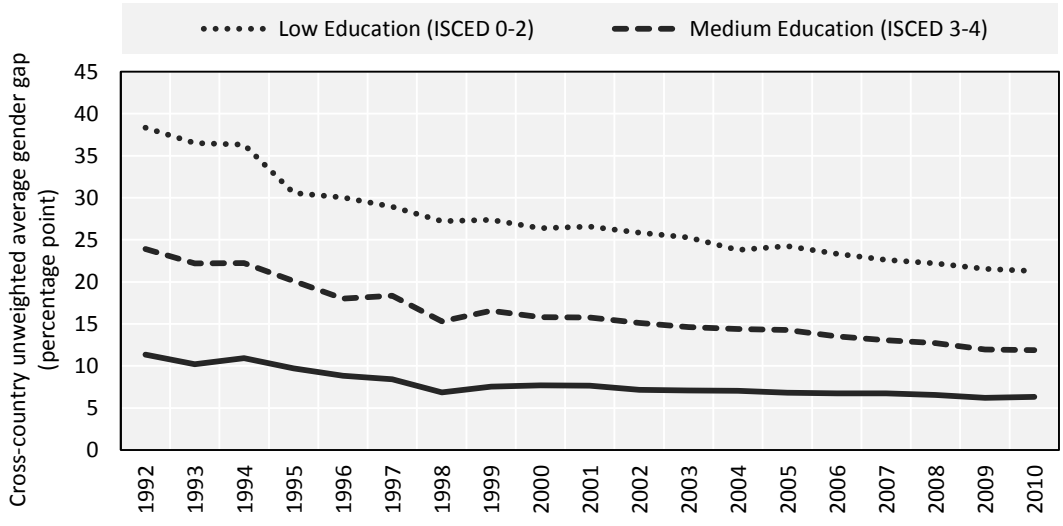
At the centre of Mandel and others' (Shalev, 2008; Mandel and Shalev, 2009; Mandel, 2009; Mandel, 2011; Mandel, 2012; Korpi et al, 2013) class-based extension to theories of

family policy is the suggestion that the influence of policy – particularly dual earner policy – on labour market activity is likely to be stronger for women with low education than for their relatively advantaged, highly educated counterparts. This section explores whether the effects of changes in policy on gender differences in labour market participation differ across levels of education, and in the process whether any effects of policy are concentrated mostly on activity amongst men and women with low levels of education. It begins as in previous chapters with a description of trends and developments in the gender gap across the three levels of education, before moving on to present findings from the fixed effects regression models. It should be noted that – because of a lack of space and similar to chapter **5** – the descriptive analysis concentrates on participation rates for 25-49 year olds only. The regression analyses, however, cover gender differences amongst 25-29 and 30-34 year olds in addition to participation rates among the broader 25-49 year old age group.

Description of trends and changes in the gender gap in the labour force participation rate (25-49 year olds) by level of education, and links with changes in family policy

The trends presented earlier in chapter **5** showed that gender differences in labour force participation rates have decreased considerably across countries over the years since 1985. Broadly speaking, the following suggests that such decreases can be seen across all levels of education, but are far more pronounced among men and women with lower levels of educational attainment. Figure **7.5** plots the cross-country unweighted mean average gender gap in the labour force participation rate for men and women with low, medium and high levels of education between 1992 and 2010.

Figure 7.5. **Cross-country unweighted average gender gap in the labour force participation rate (25-49 year olds), by education level, 1992-2010**



The cross-country average gender gap in headcount activity falls at all levels of education However, the size of the decrease is far larger amongst men and women with low level qualifications – the cross-country average gap for highly educated men and women, for instance, falls by only 5 percentage points between 1992 and 2010, while the equivalent gap for those with low levels of education drops by 17.1 points over the same period. In short, progress over the series towards equality in headcount activity is, on average, far sharper amongst low-skilled men and women than it is amongst their highly educated peers.

A similar pattern is observed within almost all of the sixteen countries for which data are available. Table **7.3** shows changes in the gender gap in the labour force participation rate by country and education level, with the gap for those with low, medium and high education shown in panels **A**, **B** and **C**, respectively. In each case, countries are ranked in ascending order according to the degree of change in the gender gap between 1992 and 2010. The table also summarises change in family policy – although due to constraints on space it covers the three policy indices plus total maternity and parental leave available to mothers only – and contains descriptive statistics and measures of bivariate linear dependence. To describe differences in the *size* of associations between education levels, this includes the beta coefficient from a simple bivariate linear regression, in addition to the Pearson's R correlation coefficient.

A majority of countries see a decrease in the gender gap at all levels of education, but in most cases changes are larger for individuals with low levels of education. Ireland and Spain see consistently large decreases regardless of education, while Belgium, Greece and Luxembourg also perform well across all three levels. Only a minority of countries see an increase in gender differences in participation at any level of education – Denmark, Finland and Sweden see increases across the board, while Austria also sees an increase in the gap amongst men and women with high-level qualifications. For the most part, though, patterns of change and country rankings are similar across levels of education, albeit with the magnitude of change decreasing as education increases.

Table 7.3. Summary of change in the gender gap in the labour force participation rate (25-49 year olds), 1992-2010[a], by education level

With changes in the three policy indices (1992-2010[a]), and descriptive statistics. Countries are ranked in ascending order by change in the gender gap.

	A. Low education (ISCED 0-2)						B. Medium education (ISCED 3-4)						C. High education (ISCED 5-6)					
		Change, 1992-2010 [a]						Change, 1992-2010 [a]						Change, 1992-2010 [a]				
	Country	Gender gap in the labour force participation rate (25-49 year olds)	Dual earner-carer leave policy index	Dual earner childcare policy index	General family support policy index	Total general maternity and parental leave available to mothers	Country	Gender gap in the labour force participation rate (25-49 year olds)	Dual earner-carer leave policy index	Dual earner childcare policy index	General family support policy index	Total general maternity and parental leave available to mothers	Country	Gender gap in the labour force participation rate (25-49 year olds)	Dual earner-carer leave policy index	Dual earner childcare policy index	General family support policy index	Total general maternity and parental leave available to mothers
1	Spain	-28.7	0.49	1.12	-0.06	4.00	Greece	-17.2	0.15	0.11	0.01	2.00	Ireland	-9.4	0.12	1.44	0.70	2.09
2	Luxembourg	-22.7	1.73	1.01	0.32	23.66	Ireland	-15.4	0.12	1.44	0.70	2.09	Belgium	-6.1	0.42	0.69	-0.04	3.83
3	Ireland	-20.8	0.12	1.44	0.70	2.09	Luxembourg	-14.8	1.73	1.01	0.32	23.66	Luxembourg	-6.0	1.73	1.01	0.32	23.66
4	Portugal	-16.5	1.32	0.67	0.34	7.49	Spain	-13.9	0.49	1.12	-0.06	4.00	Greece	-5.8	0.15	0.11	0.01	2.00
5	Belgium	-14.5	0.42	0.69	-0.04	3.83	Netherlands	-12.1	0.60	1.21	0.00	6.76	Netherlands	-5.3	0.60	1.21	0.00	6.76
6	Greece	-13.5	0.15	0.11	0.01	2.00	Austria	-11.3	-0.41	0.75	-0.22	1.96	Spain	-5.2	0.49	1.12	-0.06	4.00
7	Netherlands	-13.5	0.60	1.21	0.00	6.76	Belgium	-10.3	0.42	0.69	-0.04	3.83	Germany	-4.4	1.38	0.50	0.64	14.48
8	Italy	-10.2	0.66	0.53	0.66	0.12	Germany	-9.7	1.38	0.50	0.64	14.48	Norway	-3.9	0.39	1.57	-0.25	-3.29
9	France	-8.7	0.01	0.37	-0.23	7.82	Portugal	-8.4	1.32	0.67	0.34	7.49	France	-3.3	0.01	0.37	-0.23	7.82
10	Austria	-8.7	-0.41	0.75	-0.22	1.96	France	-5.6	0.01	0.37	-0.23	7.82	Portugal	-3.3	1.32	0.67	0.34	7.49
11	Germany	-8.1	1.38	0.50	0.64	14.48	United Kingdom	-4.4	0.31	0.89	-0.25	4.75	United Kingdom	-3.0	0.31	0.89	-0.25	4.75
12	Norway	-6.9	0.39	1.57	-0.25	-3.29	Italy	-3.4	0.66	0.53	0.66	0.12	Italy	-2.5	0.66	0.53	0.66	0.12
13	United Kingdom	-3.5	0.31	0.89	-0.25	4.75	Norway	-2.1	0.39	1.57	-0.25	-3.29	Denmark	0.5	-0.17	1.10	-0.65	0.24
14	Denmark	1.8	-0.17	1.10	-0.65	0.24	Finland	0.5	0.48	1.00	-0.71	3.87	Finland	1.2	0.48	1.00	-0.71	3.87
15	Finland	6.5	0.48	1.00	-0.71	3.87	Denmark	0.6	-0.17	1.10	-0.65	0.24	Sweden	1.4	0.31	1.32	0.27	-0.08
16	Sweden	7.0	0.31	1.32	0.27	-0.08	Sweden	3.0	0.31	1.32	0.27	-0.08	Austria	2.3	-0.41	0.75	-0.22	1.96
17	Australia	-	-	-	-	-	Australia	-	-	-	-	-	Australia	-	-	-	-	-
18	Canada	-	-	-	-	-	Canada	-	-	-	-	-	Canada	-	-	-	-	-
19	New Zealand	-	-	-	-	-	New Zealand	-	-	-	-	-	New Zealand	-	-	-	-	-
20	United States	-	-	-	-	-	United States	-	-	-	-	-	United States	-	-	-	-	-
Mean		-10.06	0.49	0.89	0.03	4.98		-7.78	0.49	0.89	0.03	4.98		-3.30	0.49	0.89	0.03	4.98
Pearson's r coefficent with change in gender gap			-0.34	0.08	-0.46^	-0.38			-0.20	0.26	-0.40	-0.42			-0.34	0.00	-0.51*	-0.31
Bivariate regression beta coefficient with change in gender gap			-5.84	1.84	-10.58	-0.58			-2.26	4.07	-5.88	-0.41			-1.95	0.02	-3.87	-0.15

Note: * = p<0.05 ** = p<0.01 *** = p<0.001. ^ = p<0.1. The bars symbolize the magnitude of change between 1992 and 2010[a]. Lighter grey bars show positive change, darker grey negative change.

[a] Austria 1995-2010, Finland, 1995-2010, France, 1993-2010, Netherlands, 1996-2010, Norway, 1996-2010 and Sweden, 1995-2010. Australia, Canada, New Zealand and the United States missing completely.

Given that country performance and placement is roughly comparable regardless of education, it is not surprising that simple associations between changes in policy and the gender gaps are fairly similar across level of education. Changes in the dual earner-carer leave policy index, for example, share a negative and weak-to-moderate correlation with changes in all three gender gaps. This correlation is, of course, similar to that seen earlier in chapter **5** for the gender gap in the overall participation rate. Also like the relation found earlier in chapter **5**, changes in the general family support policy index are negatively associated changes in the gender gap at all levels of education. In both cases, then, levels of education appear to make little difference to the strength and direction of crude relations between policy and gender differences in participation.

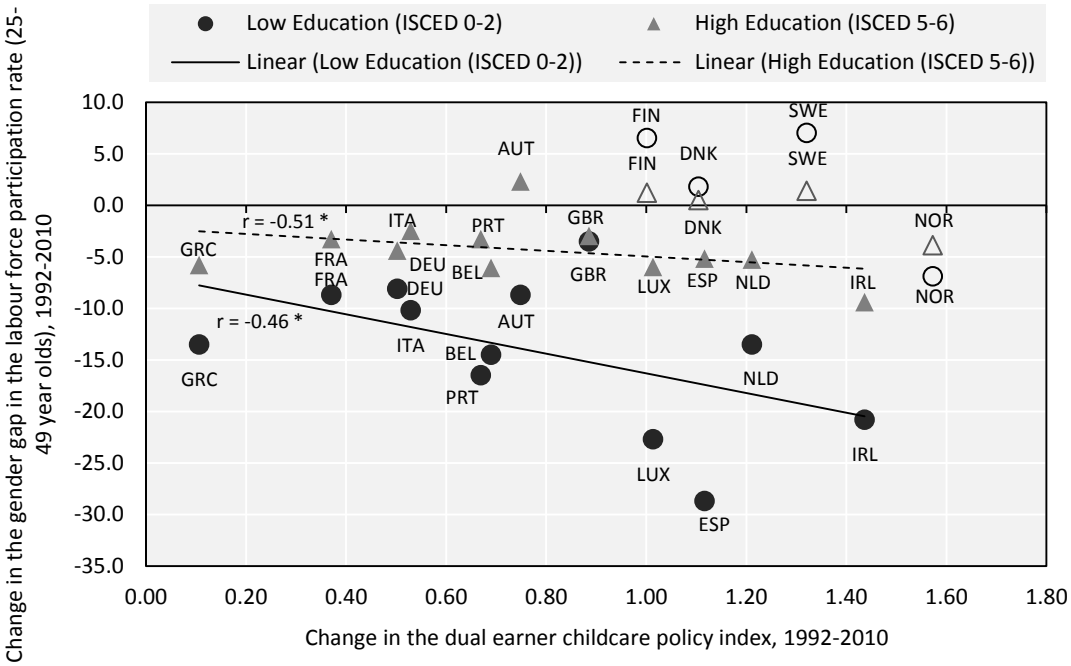
However, as within-country variation in the gender gap is so much larger at lower levels of education, both of these relations do translate into effects of far larger size amongst men and women with lower education attainment. This is illustrated by the bivariate linear regression coefficients at the bottom of table **7.3** – in both cases, the crude regression slope is far steeper for the gap in participation rates amongst men and women with low education that it is for the gap amongst their more highly educated counterparts. In other words, changes in both dual earner-carer leave policy and general family support appear to have a similar *type* of effect across levels of education, but with the *size* of any effect far larger at lower levels of education.

Notably, though, associations between changes in the dual earner childcare policy index and the gender gap in participation do appear to differ slightly across levels of education. Changes in the policy index share no relation with movements in the gender gap for those with high-level qualifications, but a positive if still weak association with changes in the gap at low and particularly moderate levels of education.

That said, and as was also the case in chapter **5**, these overall associations are distorted somewhat by the experience of the Scandinavian countries[111]. The effect of excluding the Scandinavia countries is illustrated by figure **7.6**, which plots changes on the dual earner childcare policy index against changes in the gender gap in the labour force participation rate for individuals with low and high levels of education. The four Scandinavian countries are unshaded, and the fit lines are for the non-Scandinavian countries only.

[111] This point is especially relevant here as the Scandinavian countries' status as outliers is inflated in this shortened series, given the general increase in the gender gap observed in three of the four Nordic states between 1992 and 2010.

Figure 7.6. **Change in the dual earner childcare policy index and change in the gender gap in participation rates amongst men and women with low and high education, 1992 to 2010**
with fit lines for the non-Scandinavian countries only



Note: * = p<0.05 ** = p<0.01 *** = p<0.001. ^ = p<0.1. See figure 4.1 for abbreviations

Excluding the Scandinavian countries reveals fairly similar relations across levels of education. Of the remaining twelve countries, those with substantial increases in the dual earner childcare index – Ireland, Luxembourg, the Netherlands and Spain – tend to see relatively large decreases in the gender gap, particularly at low levels of education, while those with smaller adjustments in childcare policy typically see smaller gains in equality. More generally, amongst the non-Scandinavian nations, changes in the dual earner childcare policy index share a moderate-to-strong correlation with changes in all three gender gaps[112]. Again, though, the *size* of any effect is larger for the gender gap amongst individuals with low levels of education[113].

Fixed effects regression analysis for the gender gap in the labour force participation rate (25-49 year olds; 25-29 year olds; 30-34 year olds), by levels of education

Table **7.4** (overleaf) summarises results from fixed effects linear regression models for the gender gap in the labour force participation rate (25-49 year olds) at the three levels of

[112] Amongst the twelve non-Scandinavian countries, the correlations stand at r= -0.42 for the gender gap in the labour force participation rate for those with low education, r=-0.46 for those with medium education, and r=-0.52 for those with high education.
[113] Amongst the twelve non-Scandinavian countries, the beta coefficients stand at -9.45 for the gender gap in the labour force participation rate for those with low education, -7.52 for those with medium education, and -5.37 for those with high education.

Table 7.4. **Two-way fixed effects models for the gender gap in the labour force participation rate (25-49 year olds), by education level**

		Specification set:	Main specification			Alternative measures of leave policy, with squared term		
		Dependent variable:	Gender gap in the labour force participation rate (25-49 year olds)			Gender gap in the labour force participation rate (25-49 year olds)		
		Model:	**A**	**B**	**C**	**D**	**E**	**F**
		Education level:	Low education (ISCED 0-2)	Medium education (ISCED 3-4)	High education (ISCED 5-6)	Low education (ISCED 0-2)	Medium education (ISCED 3-4)	High education (ISCED 5-6)
Lag	Variable		B SE	B SE	B SE	B SE	B SE	B SE
	Dual earner-carer leave policy							
t-1	Mother-specific earnings-related leave		-0.118 (0.182)	-0.084 (0.123)	0.062 (0.043)			
t	Father-specific leave		0.056 (0.056)	0.059 (0.055)	-0.142 (0.043) **	0.093 (0.067)	0.060 (0.058)	-0.156 (0.049) **
t-1	Gender-neutral earnings-related parental leave		-0.094 (0.074)	-0.033 (0.035)	0.013 (0.019)			
	Dual earner childcare policy							
t-1	Children under 3 in public childcare		-0.157 (0.064) *	-0.047 (0.057)	-0.022 (0.049)	-0.151 (0.079) ^	-0.071 (0.057)	-0.037 (0.038)
t-1	Children 3-6 in public pre-primary care or primary school		0.003 (0.031)	-0.023 (0.023)	-0.025 (0.012) ^	0.004 (0.036)	-0.022 (0.024)	-0.026 (0.011) *
t-1	Public expenditure on childcare services		0.193 (0.293)	0.006 (0.218)	-0.252 (0.169)	0.212 (0.315)	-0.008 (0.215)	-0.260 (0.187)
	General family support policy							
t	Child benefit per month for two chlldren		-0.065 (0.118)	-0.075 (0.075)	-0.026 (0.065)	-0.084 (0.121)	-0.109 (0.093)	-0.040 (0.066)
t	Tax support for families		-0.198 (0.079) *	-0.088 (0.084)	-0.093 (0.065)	-0.159 (0.087) ^	-0.089 (0.091)	-0.106 (0.063)
t-1	Flat-rate parental leave and childcare leave		-0.061 (0.032) ^	-0.042 (0.031)	-0.009 (0.016)			
	Alternative measures of leave policy							
t-1	Total maternity and parental leave available to mothers					-0.334 (0.251)	-0.119 (0.142)	0.035 (0.065)
t-1	(Total maternity and parental leave available to mothers)^2					0.003 (0.003)	0.001 (0.002)	0.000 (0.001)
t-1	Childcare leave					-0.026 (0.026)	-0.057 (0.028) ^	-0.027 (0.033)
t-1	Service Sector Size		-0.142 (0.154)	0.058 (0.135)	-0.083 (0.087)	-0.121 (0.157)	0.060 (0.141)	-0.093 (0.093)
t-1	Public Sector Size		0.770 (0.422) ^	0.493 (0.339)	0.223 (0.189)	0.678 (0.371) ^	0.474 (0.360)	0.241 (0.182)
t-1	Crude birth rate		0.493 (0.292)	0.437 (0.393)	0.309 (0.266)	0.479 (0.310)	0.461 (0.395)	0.351 (0.283)
t	Employment protection legislation index		-3.444 (0.839) ***	-3.966 (0.727) ***	-1.232 (0.736)	-3.960 (0.807) ***	-3.975 (0.749) ***	-1.279 (0.591) *
	Joint F-test on total leave for mothers and its square (d.f)					2.810 (2, 15) ^	0.820 (2, 15)	0.610 (2, 15)
	n		282	282	282	282	282	282
	r-squared (within)		0.911	0.901	0.714	0.913	0.901	0.715

Note : * = p<0.05 ** = p<0.01 *** = p<0.001. ^ = p<0.1. The joint F-test on total maternity and parental leave available to mothers and its square tests the null that the two are jointly equal to zero. Australia, Canada, New Zealand and United States missing entirely. Certain results are sensitive to the omission of influential observations (see appendix **E** for diagnostics).

Specifications :

A-I. Two-way fixed effects (country and time) with country-specific time-trends and cluster robust standard errors (CRSEs). Main specification

D-F. Two-way fixed effects (country and time) with country-specific time-trends and CRSEs. Leave indicators simplified into 'Total effective weeks of maternity and parental leave available to mothers', plus 'Effective weeks of father-specific leave' and 'Effective weeks of childcare leave'.

education. Models **A-C** are the main or standard models, in that they use the main nine indicators of family policy as the key independent variables. The gender gap for men and women with low education is the dependent variable in model **A**, while the gap in participation rates for men and women with moderate and high levels of education are the dependent variables in models **B** and **C**, respectively. Models **D-F** are similar, but use the alternative measures of leave policy outlined earlier in chapter **3.2** – in other words, they substitute in 'effective weeks of total maternity and parental leave available to mothers' and its square plus 'effective weeks of childcare leave' for the indicators of mother-specific earnings-related leave, gender-neutral earnings-related parental leave and flat-rate parental and childcare leave[114].

These main models provide a few point of interest. First and foremost, various results from across table **7.4** suggest that *certain* policies may as theorised be most effective at promoting the relative participation of women with low levels of education. Estimates from models **A-C**, for example, show that changes in childcare services for children aged less than three share a large, negative and significant[115][116] association with changes in the gender gap at low levels of education, but no clear relation with gender differences in participation amongst men and women with moderate and high education. In other words, estimates indicate that increasing public childcare for children aged 0-3 is particularly – and perhaps only – effective at encouraging equal participation amongst less educated men and women. This of course fits well with Mandel and others (Shalev, 2008; Mandel and Shalev, 2009; Mandel, 2009; Mandel, 2011; Mandel, 2012), who argue that public childcare services are likely to be far more valuable for women with lower levels of education.

Similarly, models **D-F** – which, as noted above, use the alternative measure of leave policy – provide some tentative suggestion that changes in total general leave available to mothers may promote equal participation but only among men and women with low

[114] Given the results of the descriptive analysis, it would also be worth exploring whether or not the experience of the Scandinavian countries has any impact on results. There is not space here to present a third set of models, but table **D.4** in appendix **D** (pg. 381) shows results from alternative specifications that include an additional set of interactions between the six dual earner policy indicators and a 'Scandinavia' dummy. These interaction models reveal no new relations within the remaining non-Scandinavian countries.

[115] The diagnostics in appendix **E** (pp. 401-410) show that this relation moves out of significance at the 5% level if the possibly influential case 'Portugal 1993' is removed from the model. However, it remains significant at the 10% level and, importantly, the coefficient remains far larger than the equivalent for the gender gap in participation at high and moderate levels of education. As a result, inferences remain broadly the same regardless of whether 'Portugal 1993' is or is not included.

[116] The sensitivity analyses in appendix **F** (pp. 429-432) also show a similar relation in model **D** – that is, the negative coefficient on public childcare services for 0-2 year olds is significant at the 5% level – when cases imputed using LCVF/NVCB are removed from the model.

education. The estimated coefficient in model **D** is negative and relatively large, while the equivalent estimates in models **E** and **F** – for men and women with moderate and high levels of education, respectively – are comparatively small, and in the latter case actually slightly positive. It should be emphasised that the joint F-test in model **D** is significant only at the more lenient 10% level, so the association on less educated men and women is far from conclusive. Nonetheless, it continues to provide at least a hint that changes in general leave may be particularly effective at closing gender gaps in participation among men and women with low levels of education, which again makes sense according to the theoretical argument put forward by Mandel and others (Shalev, 2008; Mandel, 2009; Mandel and Shalev, 2009; Mandel, 2011; Mandel, 2012).

Lastly, there is also some suggestion in model **A** of a negative and significant association between changes in tax support for the family and the gender gap amongst men and women with low levels of education. This finding is a little curious – in contrast to the theorised effects of financial support for the family, it implies that expanding family-related tax subsidies can *encourage* female activity and promote equality in labour participation. It is worth noting, though, that because the association is concentrated on individuals with low education, it is also concentrated on those men and women that are most likely to be living in low-income households. A possible explanation in this situation is that increasing household resources through family-related tax subsidies might allow families to purchase goods and services – most importantly, private childcare – that are necessary for a second earner to enter the labour market in the first place. In other words, tax subsidies might ease liquidity constraints on low-income families that otherwise prevent second earning (Jaumotte, 2003). In any case, the association certainly provides evidence to dispute any claim that financial support for the family discourages female activity, amongst those with low levels of education at least.

Importantly though, certain results elsewhere in table **7.4** suggest that the effects of family policy on gender differences in labour participation may not be exclusive to men and women with low levels of education. More specifically, estimates suggest that certain policies may help close gender gaps in participation rates specifically amongst men and women with high-level qualifications. Both model **C** and model **F**, for example, show a negative and highly significant association between changes in father-specific leave and the gender gap for men and women with high education, while models **A-B** and **D-E** show no equivalent association for the gender gaps among those with low and moderate education. This relation is notable in itself – inasmuch as it provides some suggestion that introducing or extending leaves reserved for fathers can actually reduce gender gaps in

economic activity – but of particular interest here is the suggestion that these 'dual earner' type father-specific leave policies are effective only at promoting equality among men and women with *high* levels of education. Likewise, model **F** shows a negative and significant[117] association between childcare provision for 3-6 year olds and the gender gap for men and women with high levels of education[118]. In both cases the substantive effect of changes in the policy may be limited – the coefficient on changes in childcare provision for slightly older children in particular is only very small, with the estimated effect of a 49 percentage point increase in coverage, the largest change observed over the series, a decrease in the gender gap of just 1.2 percentage points. Nonetheless, both associations suggest that highly educated women may gain at least to some degree from changes in certain family policy provisions.

This all said, earlier in chapter **5** associations between changes in policy and gender differences in labour participation were found to be stronger and clearer when looking at activity rates amongst men and women of 'prime' childbearing age. It is then worthwhile examining how associations vary across levels of education within this more specific age group. Estimates for men and women of 'prime' childbearing age are shown in tables **7.5** and **7.6** (overleaf). In both cases, models are identical in specification to those shown in table **7.4,** but with participation rates for individuals aged 25-29 at varying levels of education used as dependent variables in table **7.5,** and those for individuals aged 30-34 in table **7.6**[119].

Results from both tables provide further indication that the beneficial effects of family policy are concentrated mostly but not exclusively on women with lower levels of education. Models **A-C** in table **7.5**, for example, show that changes in mother-specific earnings-related leave share a negative, large and highly significant association with the gap in participation rates among 25-29 year olds with low education, while models **A-C** in table **7.6** show something similar for changes in 'dual earner' gender-neutral earnings-

[117] The diagnostics in appendix **E** (pp. 401-410) show that this relation moves out of significance at the 5% level if the influential case 'Luxembourg 1994' is removed from the model.
[118] The sensitivity analysis show in appendix **F** (pp. 429-432) show something similar for model **C** – that is, the negative coefficient on public childcare services for 3-6 year olds moves into significance at the 5% level – if cases imputed using LCVF/NVCB are removed from the model.
[119] It is worth pointing out that because the mean age of women at childbirth increases with levels of education, there is a danger that these more specific models may systematically underestimate the effects of policy on women with higher levels of education. That said, across countries most births even by highly educated women occur when the mother is aged between 25-34. Data on fertility that is disaggregated by education are a little patchy, but even by 2010 the modal age of highly educated women at time of birth was between 30 and 32 in Belgium, Denmark, Finland, Norway, Portugal and Sweden. The only exceptions, where data are available, are Greece and Spain where the modal age of women at time of childbirth was 33 and 34 respectively (Eurostat, 2014).

Table 7.5. **Two-way fixed effects models for the gender gap in the labour force participation rate (25-29 year olds), by education level**

		Specification set:	Main specification			Alternative measures of leave policy, with squared term		
		Dependent variable:	Gender gap in the labour force participation rate (25-29 year olds)			Gender gap in the labour force participation rate (25-29 year olds)		
		Model:	**A**	**B**	**C**	**D**	**E**	**F**
		Education level:	Low education (ISCED 0-2)	Medium education (ISCED 3-4)	High education (ISCED 5-6)	Low education (ISCED 0-2)	Medium education (ISCED 3-4)	High education (ISCED 5-6)
Lag	Variable		B SE	B SE	B SE	B SE	B SE	B SE
	Dual earner-carer leave policy							
t-1	Mother-specific earnings-related leave		-0.973 (0.316) **	-0.211 (0.206)	0.091 (0.125)			
t	Father-specific leave		0.217 (0.173)	0.038 (0.071)	-0.509 (0.205) *	0.410 (0.193) ^	0.101 (0.084)	-0.513 (0.243) ^
t-1	Gender-neutral earnings-related parental leave		-0.184 (0.141)	-0.043 (0.060)	0.040 (0.068)			
	Dual earner childcare policy							
t-1	Children under 3 in public childcare		-0.540 (0.187) *	-0.037 (0.091)	0.139 (0.135)	-0.445 (0.191) *	-0.036 (0.099)	0.160 (0.128)
t-1	Children 3-6 in public pre-primary care or primary school		0.077 (0.069)	-0.027 (0.043)	-0.012 (0.022)	0.090 (0.087)	-0.024 (0.051)	-0.013 (0.022)
t-1	Public expenditure on childcare services		2.322 (0.692) **	-0.788 (0.410) ^	-0.686 (0.414)	2.365 (0.790) **	-0.733 (0.411)	-0.685 (0.422)
	General family support policy							
t	Child benefit per month for two chlldren		-0.092 (0.258)	-0.068 (0.106)	0.027 (0.125)	-0.064 (0.238)	-0.127 (0.143)	0.061 (0.130)
t	Tax support for families		-0.553 (0.407)	-0.007 (0.058)	0.153 (0.179)	-0.370 (0.414)	0.014 (0.077)	0.162 (0.173)
t-1	Flat-rate parental leave and childcare leave		0.058 (0.079)	-0.053 (0.077)	0.062 (0.062)			
	Alternative measures of leave policy							
t-1	Total maternity and parental leave available to mothers					-0.891 (0.388) *	-0.434 (0.198)	0.127 (0.270)
t-1	(Total maternity and parental leave available to mothers)^2					0.010 (0.005) ^	0.005 (0.003)	-0.001 (0.003)
t-1	Childcare leave					0.213 (0.119)	-0.008 (0.029)	0.064 (0.059)
t-1	Service Sector Size		0.101 (0.285)	-0.142 (0.186)	-0.339 (0.170) ^	0.232 (0.255)	-0.117 (0.185)	-0.338 (0.181) ^
t-1	Public Sector Size		1.537 (1.546)	1.059 (0.516)	0.257 (0.231)	1.191 (1.521)	0.912 (0.462)	0.277 (0.217)
t-1	Crude birth rate		2.472 (0.751) **	0.270 (0.359)	-0.401 (0.378)	2.042 (0.624) **	0.227 (0.398)	-0.422 (0.379)
t	Employment protection legislation index		-4.254 (1.443) *	-2.514 (1.122) *	0.703 (0.879)	-3.948 (2.037) ^	-3.086 (1.031)	0.750 (1.102)
	Joint F-test on total leave for mothers and its square (d.f)					2.880 (2, 15) ^	3.340 (2, 15) ^	0.120 (2, 15)
	n		282	282	282	282	282	282
	r-squared (within)		0.535	0.629	0.410	0.539	0.635	0.411

Note : * = p<0.05 ** = p<0.01 *** = p<0.001. ^ = p<0.1. The joint F-test on total maternity and parental leave available to mothers and its square tests the null that the two are jointly equal to zero. Australia, Canada, New Zealand and United States missing entirely. Results are robust to the omission of influential observations (see appendix **E** for diagnostics).

Specifications :

A-I. Two-way fixed effects (country and time) with country-specific time-trends and cluster robust standard errors (CRSEs). Main specification

D-F. Two-way fixed effects (country and time) with country-specific time-trends and CRSEs. Leave indicators simplified into 'Total effective weeks of maternity and parental leave available to mothers', plus 'Effective weeks of father-specific leave' and 'Effective weeks of childcare leave'.

Table 7.6. **Two-way fixed effects models for the gender gap in the labour force participation rate (30-34 year olds), by education level**

		Specification set:	Main specification			Alternative measures of leave policy, with squared term		
		Dependent variable:	Gender gap in the labour force participation rate (30-34 year olds)			Gender gap in the labour force participation rate (30-34 year olds)		
		Model:	**A**	**B**	**C**	**D**	**E**	**F**
		Education level:	Low education (ISCED 0-2)	Medium education (ISCED 3-4)	High education (ISCED 5-6)	Low education (ISCED 0-2)	Medium education (ISCED 3-4)	High education (ISCED 5-6)
Lag	Variable		B SE	B SE	B SE	B SE	B SE	B SE
	Dual earner-carer leave policy							
t-1	Mother-specific earnings-related leave		-0.147 (0.251)	0.092 (0.176)	0.070 (0.103)			
t	Father-specific leave		0.003 (0.074)	0.021 (0.068)	0.008 (0.075)	0.003 (0.083)	0.011 (0.068)	-0.018 (0.067)
t-1	Gender-neutral earnings-related parental leave		-0.180 (0.064) *	-0.007 (0.041)	-0.013 (0.026)			
	Dual earner childcare policy							
t-1	Children under 3 in public childcare		-0.276 (0.135) ^	-0.055 (0.079)	-0.172 (0.148)	-0.237 (0.168)	-0.070 (0.086)	-0.183 (0.156)
t-1	Children 3-6 in public pre-primary care or primary school		-0.025 (0.024)	0.032 (0.038)	-0.005 (0.032)	-0.026 (0.023)	0.030 (0.039)	-0.007 (0.030)
t-1	Public expenditure on childcare services		-0.290 (0.658)	-0.092 (0.381)	0.443 (0.284)	-0.331 (0.651)	-0.074 (0.362)	0.411 (0.278)
	General family support policy							
t	Child benefit per month for two chlldren		-0.281 (0.169)	-0.294 (0.110) *	-0.142 (0.076) ^	-0.203 (0.188)	-0.322 (0.112) *	-0.131 (0.082)
t	Tax support for families		-0.120 (0.220)	-0.042 (0.117)	-0.231 (0.147)	-0.058 (0.215)	-0.068 (0.123)	-0.231 (0.151)
t-1	Flat-rate parental leave and childcare leave		-0.066 (0.054)	-0.058 (0.050)	-0.002 (0.031)			
	Alternative measures of leave policy							
t-1	Total maternity and parental leave available to mothers					-0.047 (0.346)	-0.035 (0.164)	0.095 (0.139)
t-1	(Total maternity and parental leave available to mothers)^2					-0.001 (0.005)	0.000 (0.002)	-0.001 (0.002)
t-1	Childcare leave					-0.015 (0.083)	-0.059 (0.057)	-0.027 (0.051)
t-1	Service Sector Size		-0.530 (0.229) *	0.021 (0.106)	-0.128 (0.154)	-0.509 (0.221) *	0.006 (0.107)	-0.137 (0.159)
t-1	Public Sector Size		0.943 (0.402) *	1.001 (0.477) ^	0.527 (0.258) ^	0.964 (0.453) ^	1.006 (0.475) ^	0.574 (0.283) ^
t-1	Crude birth rate		0.206 (0.585)	-0.084 (0.503)	0.478 (0.272) ^	0.139 (0.648)	-0.016 (0.482)	0.517 (0.293) ^
t	Employment protection legislation index		-3.952 (1.429) *	-3.926 (1.122) **	-1.800 (0.379) ***	-3.652 (1.474) *	-4.282 (0.981) **	-1.686 (0.543) **
	Joint F-test on total leave for mothers and its square (d.f)					3.380 (2, 15) ^	0.060 (2, 15)	0.260 (2, 15)
	n		282	282	282	282		
	r-squared (within)		0.630	0.748	0.676	0.629	0.747	0.676

Note : * = p<0.05 ** = p<0.01 *** = p<0.001. ^ = p<0.1. The joint F-test on total maternity and parental leave available to mothers and its square tests the null that the two are jointly equal to zero. Australia, Canada, New Zealand and United States missing entirely. Results are robust to the omission of influential observations (see appendix **E** for diagnostics).

Specifications :

A-I. Two-way fixed effects (country and time) with country-specific time-trends and cluster robust standard errors (CRSEs). Main specification

D-F. Two-way fixed effects (country and time) with country-specific time-trends and CRSEs. Leave indicators simplified into 'Total effective weeks of maternity and parental leave available to mothers', plus 'Effective weeks of father-specific leave' and 'Effective weeks of childcare leave'.

related parental leave. In both cases changes in the two leaves have no effect on the gender gap among 25-29 or 30-34 year olds with moderate or high levels of education, implying that changes in these 'dual earner' type leaves are most effective at promoting equal participation among men and women with low education. Both sets of models also continue to suggest that the effects of changes in childcare for children aged less than three are strongest and clearest at lower levels of education[120]. Yet, in table **7.5** at least, there remains a negative and significant association between changes in father-specific leaves and gender differences in participation among highly educated men and women, with a coefficient that is in this case actually fairly large. Thus, the broader inference remains that the changes in family policy – in the broad sense – operate largely but not entirely to the benefit of less educated women.

Finally, before moving on, it is worth making a brief note on a couple of other curious associations that emerge from tables **7.5** and **7.6**. Specifically, models **A** and **D** in table **7.5** suggest that changes in childcare spending have a large and positive effect on the gap in participation rates among 25-29 year olds with low education, while models **B** and **E** in table **7.6** indicate that increases in the generosity of child benefit may promote equal participation amongst 30-34 year olds with moderate levels of education. In both cases the association is hard to explain using the theory, although in the former it is possible that causality runs the other way with increases in childcare spending a response to increasing or stagnant gender gaps amongst less educated 25-29 year olds. In any case, given that the two associations are both unexpected in terms of the theory and that there is no evidence of a similar relation elsewhere – either in models for the other specific age group, in those for the broader age group in table **7.4**, or in chapter **5** at the overall level – it is probably best not to place too much emphasis on these single results.

Summary

Results from the two sub-sections above provide some albeit slightly mixed support for the argument that any benefits associated with family policy provision are likely to be concentrated mostly on women with lower levels of education (Shalev, 2008; Mandel, 2009; Mandel and Shalev, 2009; Mandel, 2011; Mandel, 2012). Just as for changes in the overall labour force participation rate covered in chapter **5**, the initial descriptive analysis

[120] The sensitivity analyses shown in appendix **F** (pp. 432-435) suggest that the negative coefficient on changes in public childcare services for 0-2 year olds in model **D** in table **7.5** does move out of significance if cases imputed using LVCF/NVCB are removed. However, it remains significant in model **A** in table **7.5** regardless of whether cases imputed using LVCF/NVCB are included or not, and in any case estimated coefficients continue continue to suggest that any beneficial effects of public childcare for very young children are likely to be most substantial for less educated women.

suggests any links between changes in dual earner policy and headcount participation are either weak or conditional at *all* levels of education, while associations with general family support policy are again negative – not positive – regardless of education. That said, table **7.3** also shows that changes in the gender gap are far larger at low levels of education, so the size of any policy effect would be larger amongst low-skilled men and women than for their more highly educated counterparts. In other words, the strength and direction of crude bivariate relations are similar across levels of education, but there is some suggestion that the size of any impact from changes in policy would be greater for men and women with low levels of education.

Results from the linear regression models mostly – but not completely – point in a similar direction. There is consistent indication across models that the effects of childcare provision for very young children are concentrated on individuals with low-level qualifications, while unexpectedly tax support for the family also appears to encourage equal participation only amongst men and women with low levels of education. There is also evidence to suggest that dual earner-type leaves for mothers may be particularly effective at promoting equal participation among men and women with lower levels of education, if only once the regression models concentrate on men and women aged 25-34. Taken in isolation, these results are consistent with and supportive of the argument that it is women with low education that benefit most from family policy provisions (Shalev, 2008; Mandel, 2009; Mandel and Shalev, 2009; Mandel, 2011; Mandel, 2012).

However, results elsewhere suggest that certain other family policies may promote the relative participation of highly educated women. In particular, results consistently indicate that introducing or extending leaves reserved for fathers encourages equal participation amongst highly educated men and women – which is notable in itself given that the existing comparative literature says little about the possible positive effects of father-specific leave on equality in economic activity (see table **A.1** in appendix **A** (pp. 314-316)) – while there is also some suggestion that childcare services for slightly older children promote the relative activity of women with high level qualifications. These two relations might not hold quite the same prominence as those above – the effect sizes on both are only fairly small, and on balance women with low levels of education do appear to gain more from family policy provision in general. Nonetheless, both relations at least suggest that any benefits attached to family policy provision in general are not fully exclusive to women with low levels of education.

7.4. The female share of managerial employment, by education level

The flip side of the class-based 'policy paradox' is that any adverse trade off effects attached to certain family policies are expected to cause particular damage to the careers of relatively advantaged, highly educated women (Shalev, 2008; Mandel and Shalev, 2009; Mandel, 2011; Mandel, 2012). Results shown in chapter **6** support the argument that certain policies – particularly leave entitlements – may strengthen obstacles for women to high status and high paying positions. However, according to Mandel and others though, because it is highly educated individuals who are mostly likely to be competing for such positions[121], it is also highly educated women who are likely to suffer most from any trade off effects. This section examines whether links between changes in family policy and the female share of managers vary across levels of education, with a particular focus on whether or not any damaging effects attached to leave policies are exceptionally severe for highly educated women.

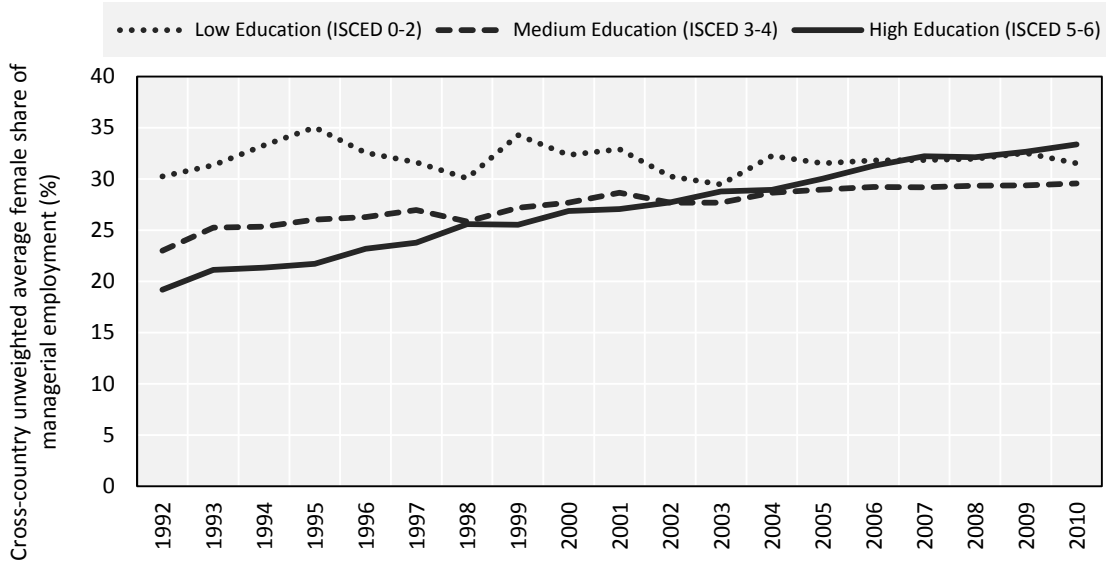
Description of trends and changes in the female share of managers by level of education, and links with changes in family policy

Results earlier in chapter **6** showed that women's relative access to managerial employment increased in almost all of the countries examined over the period between 1992 and 2010. By and large, the following suggests that these gains are concentrated mostly on women with high-level qualifications. Figure **7.7** plots the cross-country unweighted average female share of managerial employment among managers with low, medium and high education for the years 1992 and 2010.

The female share of managers increases, to varying extents, at all levels of education. However, gains are far larger among managers with high education – where the increase between 1992 and 2010 stands at 14.18 percentage points – than for those with moderate and particularly low level qualifications. Indeed, while the female share of managers with low education fluctuates a little over the series, the general trend is fairly flat with the

[121] Empirically, highly educated individuals hold a disproportionately high share of managerial employment. Across the sample, highly educated individuals hold a mean average 35% of managerial employment and highly educated women 34% of female managerial employment. For comparison, the highly educated share of total employment is only 25% and the highly educated share of female employment just 28%. That said, managerial employment is by no mean rare at lower levels of education. Individuals with low education hold a mean average of 26% of managerial employment, and women with low education 28% of total female managerial employment.

Figure 7.7. **Cross-country unweighted average female share of managerial employment amongst managers with equivalent education, 1992-2010**



increase between 1992 and 2010 standing at just over 1 percentage point only. Generally then, on average across countries, the ability of highly educated women to compete with similarly educated men for managerial employment increased considerably over the years following 1992, while the relative ability of women with low education remained fairly stagnant.

Differences across levels of education are illustrated further by table **7.7** (overleaf). Panels **A**, **B** and **C** summarise, by country, changes in the female share of managerial employment amongst managers with low, medium and high education, respectively. In this case, countries are ranked in *descending* order according to change in the female share between 1992 and 2010, as on this indicator an *increase* represents a shift towards equality. The table again includes descriptive statistics and measures of linear dependence.

Panel **A** shows that developments in the female share of managers with low education are fairly mixed across countries. Eight see gains in the female share at this level of education, with the Scandinavian countries in general and Denmark in particular performing well. In seven other countries, however, the female share of managers with low education falls between 1992 and 2010. Decreases in the female share are considerable in Belgium, Germany and France, and exceptionally large in Portugal.

In contrast, panels **B** and **C** suggest that growth in the female share of managers with either moderate or high education is widespread across almost all of the countries

Table 7.7. **Summary of change in the female share of managerial employment amongst managers with equivalent education, 1992-2010[ab]**

With changes in the three policy indices (1992-2010[ab]), and descriptive statistics. Countries are ranked in descending order by change in the female share.

	A. Low education (ISCED 0-2)						B. Medium education (ISCED 3-4)						C. High education (ISCED 5-6)					
		Change, 1992-2010 [a]						Change, 1992-2010 [b]						Change, 1992-2010 [b]				
	Country	Female share of managers with low education (%)	Dual earner-carer leave policy index	Dual earner childcare policy index	General family support policy index	Total general maternity and parental leave available to mothers	Country	Female share of managers with medium education (%)	Dual earner-carer leave policy index	Dual earner childcare policy index	General family support policy index	Total general maternity and parental leave available to mothers	Country	Female share of managers with high education (%)	Dual earner-carer leave policy index	Dual earner childcare policy index	General family support policy index	Total general maternity and parental leave available to mothers
1	Denmark	11.1	-0.17	1.10	-0.65	0.24	Ireland	12.6	0.12	1.44	0.70	2.09	Portugal	21.2	1.32	0.67	0.34	7.49
2	Ireland	8.2	0.12	1.44	0.70	2.09	Spain	10.9	0.49	1.12	-0.06	4.00	Ireland	19.3	0.12	1.44	0.70	2.09
3	Norway	6.0	0.39	1.57	-0.25	-3.29	Greece	9.0	0.15	0.11	0.01	2.00	Spain	18.4	0.49	1.12	-0.06	4.00
4	Sweden	5.1	0.35	0.66	0.27	0.77	Netherlands	7.6	0.60	1.21	0.00	6.76	Belgium	13.4	0.41	0.64	-0.02	3.74
5	Greece	3.8	0.15	0.11	0.01	2.00	Italy	6.8	0.66	0.42	0.68	0.12	Norway	13.4	0.39	1.57	-0.25	-3.29
6	Netherlands	3.4	0.60	1.21	0.00	6.76	Portugal	5.7	1.32	0.67	0.34	7.49	Finland	13.0	0.39	0.65	-0.39	2.12
7	Austria	2.8	-0.41	0.75	-0.22	1.96	Denmark	5.0	-0.17	1.10	-0.65	0.24	Greece	12.0	0.15	0.11	0.01	2.00
8	Finland	1.1	0.39	0.65	-0.39	2.12	Germany	3.2	1.38	0.50	0.64	14.48	United Kingdom	11.4	0.31	0.89	-0.25	4.75
9	Spain	0.0	0.49	1.12	-0.06	4.00	Luxembourg	3.0	1.73	1.02	0.11	23.66	Austria	10.4	-0.41	0.75	-0.22	1.96
10	Italy	-0.1	0.66	0.42	0.68	0.12	Sweden	1.9	0.46	0.90	0.45	2.96	Germany	9.9	1.38	0.50	0.64	14.48
11	Luxembourg	-0.8	1.73	1.02	0.11	23.66	United Kingdom	1.4	0.31	0.89	-0.25	4.75	France	8.9	0.01	0.36	-1.33	-11.54
12	United Kingdom	-1.7	0.31	0.89	-0.25	4.75	Austria	1.1	-0.41	0.75	-0.22	1.96	Netherlands	8.9	0.60	1.21	0.00	6.76
13	Belgium	-7.6	0.41	0.64	-0.02	3.74	Belgium	0.7	0.41	0.64	-0.02	3.74	Sweden	7.5	0.46	0.90	0.45	2.96
14	Germany	-8.0	1.38	0.50	0.64	14.48	France	0.4	0.01	0.36	-1.33	-11.54	Italy	6.9	0.66	0.42	0.68	0.12
15	France	-9.6	0.01	0.36	-1.33	-11.54	Norway	-0.1	0.39	1.57	-0.25	-3.29	Denmark	0.1	-0.17	1.10	-0.65	0.24
16	Portugal	-12.8	1.32	0.67	0.34	7.49	Finland	-1.5	0.39	0.65	-0.39	2.12	Luxembourg	-1.3	1.73	1.02	0.11	23.66
17	Australia	-	-	-	-	-	Australia	-	-	-	-	-	Australia	-	-	-	-	-
18	Canada	-	-	-	-	-	Canada	-	-	-	-	-	Canada	-	-	-	-	-
19	New Zealand	-	-	-	-	-	New Zealand	-	-	-	-	-	New Zealand	-	-	-	-	-
20	United States	-	-	-	-	-	United States	-	-	-	-	-	United States	-	-	-	-	-
Mean		0.05	0.48	0.82	-0.03	3.71		4.22	0.49	0.83	-0.02	3.84		10.84	0.49	0.83	-0.02	3.84
Pearson's r coefficent with change in gender gap			-0.50*	0.50*	0.02	-0.15			0.02	0.16	0.46^	0.11			-0.08	0.07	0.22	-0.25
Bivariate regression beta coefficient with change in gender gap			-5.88	8.39	0.26	-0.14			0.18	1.72	3.62	0.06			-0.84	1.05	2.53	-0.20

Note: * = p<0.05 ** = p<0.01 *** = p<0.001. ^ = p<0.1. The bars symbolize the magnitude of change between 1992 and 2010[a]. Lighter grey bars show positive change, darker grey negative change.

a. Austria 1995-2010, Belgium, 1993-2010, Finland, 1997-2010, France, 1995-2010, Italy, 1992-2003, Luxembourg, 1993-2010, Netherlands, 1996-2010, Norway, 1996-2010 and Sweden, 2001-2010. Australia, Canada, New Zealand and the United States missing completely.

examined. Increases in the female share are generally larger at high levels of education – with the gains in Ireland, Spain and, notably, Portugal exceptionally large – but several countries also see considerable growth in the female share of managers with moderate-level qualifications. Broadly, then, table **7.7** points towards an almost universal improvement in the ability of women with at least moderate-level qualifications to compete with similarly educated men for managerial positions, but more inconsistent developments for women with low levels of education.

Given the general expansion of family policy observed in chapter **4**, these trends provide little immediate support for the argument that policy provision is particularly likely to inflate obstacles to top positions for highly educated women. If anything, the opposite appears true – shifts towards equal representation in management are particularly *large* for women with high levels of education, while in several countries women with low education are less able to compete with similarly educated men for managerial positions in 2010 than they were in 1992. As ever, though, it is possible that these broad trends mask an underlying correlation between the size or magnitude of changes in policy and equality at whatever level of education.

Panel **A** in table **7.7** shows that changes in the female share of managers with low level qualifications share fairly strong links with changes in dual earner policy provision. The female share of managers with low levels of education shares a strong and positive correlation with the childcare policy index, with several countries – particularly Denmark, Ireland and Norway – coupling a considerable increase in female representation with a large expansion in general dual earner childcare provision. Conversely, the association with changes in the dual earner-carer leave policy index is strong and *negative* – put differently, countries with larger (smaller) increases in dual earner-carer leave policy are more likely to see decreases (increases) in the female share of managers with low education. Elsewhere, associations with changes in the general family support index and total leave are only weak. In the latter case, however, the relation is heavily influenced by the experience of France – when removed, the correlation between changes in the female share of managers with low education and total leave available to mothers becomes negative and moderate-to-strong ($r = -0.44$). In other words, when France is excluded, countries with large increases in the length of general leave available to mothers are more likely to see a shift away from equal representation among managers with low-level qualifications.

Panels **B** and **C** suggest crude relations are somewhat weaker for the female share of managers with either medium or high education. In both cases there is no real correlation between movements in the female share and either dual earner policy index, although notably both do share a positive correlation with the general family support policy index. Most important, perhaps, correlations for both with changes in the length of total maternity and parental leave available to mothers are only weak. The relation for the female share of managers with high education is negative, and just as for the share of managers with low education does increase in strength if France is excluded (r = -0.35). Equally though, the correlation turns positive is Luxembourg is removed (r = 0.21) and the association is in general more inconsistent than that seen on the female share of managers with low education. On the whole, changes in the female share of managers with either medium or high education appear mostly unrelated or, in the case of general family support policy, positively related to movements in policy provision.

The broad suggestion here then, is that if changes in family policies do inflate barriers to managerial employment for women – as was indicated by the results of chapter **6** – then the effects seem to fall mostly on women with low rather than high levels of educational attainment. There is also some suggestion that changes in dual earner childcare policy may promote access to managerial positions for women with low education. Overall, though, these initial associations provide little support for the argument that any adverse effects attached to family policy are likely to impact most strongly on relatively advantaged, highly educated women.

Fixed effects regression analysis the female share of managers, by level of education

Table **7.8** shows results from fixed effects models for the female share of managerial employment at the three levels of education. Models **A-C** are the main or primary models, in that they use the main nine indicators of family policy as the key independent variables. The female share of managers with low education is the dependent variable in model **A**, and the share of managers with medium and high education the dependent variables in **B** and **C** respectively. **D-F** are similar, but use the alternative measures of leave policy outlined earlier in chapter **3.2**.

The main models in **A-C** contain several notable results. Model **A**, for instance, shows a positive and significant relation between changes in father-specific leave and the female share of managers with low education. This makes theoretical sense – as discussed earlier in chapter **6**, leaves reserved for fathers should weaken grounds for discrimination and go

Table 7.8. **Two-way fixed effects models for the female share of managerial employment amongst mangers with equivalent education, by education level.**

	Specification set:	Main specification						Alternative measures of leave policy, with squared term					
	Dependent variable:	Female share of managerial employment						Female share of managerial employment					
	Model:	**A**		**B**		**C**		**D**		**E**		**F**	
	Education level:	Low education (ISCED 0-2)		Medium education (ISCED 3-4)		High education (ISCED 5-6)		Low education (ISCED 0-2)		Medium education (ISCED 3-4)		High education (ISCED 5-6)	
Lag	Variable	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE
	Dual earner-carer leave policy												
t-1	Mother-specific earnings-related leave	0.073	(0.466)	0.408	(0.198) ^	-0.031	(0.170)						
t	Father-specific leave	0.658	(0.173) **	0.236	(0.167)	-0.148	(0.110)	0.648	(0.220) *	0.212	(0.217)	-0.223	(0.107) ^
t-1	Gender-neutral earnings-related parental leave	-0.282	(0.164)	0.011	(0.034)	0.079	(0.104)						
	Dual earner childcare policy												
t	Children under 3 in public childcare	0.657	(0.197) **	-0.150	(0.133)	0.222	(0.084) *	0.610	(0.193) **	-0.142	(0.161)	0.194	(0.095) ^
t	Children 3-6 in public pre-primary care or primary school	-0.175	(0.108)	-0.053	(0.024) *	0.053	(0.012) **	-0.175	(0.127)	-0.053	(0.027) ^	0.060	(0.024) *
t	Public expenditure on childcare services	-0.372	(1.012)	-0.554	(0.372)	-0.029	(0.515)	-0.413	(0.951)	-0.408	(0.342)	0.018	(0.517)
	General family support policy												
t	Child benefit per month for two chlldren	0.054	(0.226)	0.131	(0.130)	0.217	(0.159)	-0.008	(0.206)	0.124	(0.149)	0.218	(0.147)
t	Tax support for families	-0.072	(0.267)	-0.071	(0.203)	-0.080	(0.124)	0.014	(0.247)	-0.118	(0.216)	-0.229	(0.110)
t-1	Flat-rate parental leave and childcare leave	-0.248	(0.138) ^	-0.080	(0.052)	-0.052	(0.078)						
	Alternative measures of leave policy												
t-1	Total maternity and parental leave available to mothers							-0.867	(0.687)	0.070	(0.255)	0.616	(0.320) ^
t-1	(Total maternity and parental leave available to mothers)^2							0.010	(0.009)	-0.001	(0.004)	-0.009	(0.005) ^
t-1	Childcare leave							-0.215	(0.177)	-0.033	(0.045)	-0.128	(0.033) **
t	Service Sector Size	0.811	(0.394) ^	0.086	(0.259)	-0.117	(0.152)	0.827	(0.400) ^	0.048	(0.241)	-0.110	(0.151)
t	Public Sector Size	2.499	(1.590)	0.990	(0.385) *	-0.703	(0.491)	2.318	(1.238) ^	1.002	(0.383) *	-0.256	(0.439)
t-1	Crude birth rate	-0.070	(1.088)	0.476	(0.408)	-0.443	(0.469)	0.220	(1.022)	0.614	(0.462)	-0.574	(0.396)
t	Employment protection legislation index	1.834	(2.751)	1.198	(0.915)	0.857	(0.823)	-0.183	(3.087)	0.145	(1.224)	2.354	(0.979) *
t	Economic freedom index	-1.193	(3.056)	1.143	(1.606)	-0.105	(1.377)	-0.922	(2.881)	1.097	(1.664)	-0.403	(1.267)
	Joint F-test on total leave available to mothers and its square (d.f)							1.330	(2, 15)	0.150	(2, 15)	1.960	(2, 15)
	n	256		267		266		256		267		266	
	r-squared (within)	0.453		0.489		0.819		0.455		0.468		0.829	

Note : * = p<0.05 ** = p<0.01 *** = p<0.001. ^ = p<0.1. The joint F-test on total maternity and parental leave available to mothers and its square tests the null that the two are jointly equal to zero. Italy 2004-2010 is excluded from all specifications due to a sharp break in series. Australia, Canada, New Zealand and United States missing entirely. Certain results are sensitive to the omission of potentially influential observations (see appendix **E** for diagnostics).

Specifications :

A-C. Two-way fixed effects (country and time) with country-specific time-trends and cluster robust standard errors. Main specification.

D-F. Two-way fixed effects (country and time) with country-specific time-trends and cluster robust standard errors. Leave indicators simplified into 'Total effective weeks of maternity and parental leave available to mothers' and its sqaure, plus 'Effective weeks of father-specific leave' and 'Effective weeks of childcare leave'.

some way towards redistributing household divisions of labour. It is notable, though, that no such relation is evident among managers with moderate or high levels of education. Both models **A** and **C**, meanwhile, show positive and significant relations between changes in various childcare policies and the female share of managers with low and high education, respectively. In the former, there is a large and positive coefficient on the proportion of children under three in publicly funded care, while in the latter case there are positive significant associations on changes in childcare provision for both younger and older children. Curiously, model **B** shows a *negative* and significant association between provision for older children and the female share of managers with moderate education, although the coefficient here is only small[122] [123]. This latter result is difficult to explain, in that using the theory it is hard to see why an increase in public childcare provision should damage the female share of managers at any level of education, or why the relation for moderately-educated managers should differ from those for managers with low and high education. Broadly, though, these results provide a least some suggestion that an expansion in public childcare services can help at least some women into managerial employment.

These main models do not, however, produce any indication that any adverse effects associated with leave policies are concentrated on women with high levels of education. Indeed, all three models provide little solid evidence of any negative effect of leave on the female share of managers at any level of education – the only relation even close to significance at the 5% level is the negative coefficient in model **A** on flat-rate parental and childcare leave, which provides a hint that changes in these 'general family support' leaves may damage the female share of managers with *low* education[124]. That said, in chapter **6** clear and significant relations between leave and the female share did emerge only once leave policies were measured through the alternative measure of total general leave available to mothers, rather than through the separate indicators of various leave types. What may be of more importance, then, are relations between the three female shares and changes in *total* leave available to mothers. This is explored in models **D-F** in table **7.8**, which as noted above use the alternative measures of leave as independent variables.

---

[122] The diagnostics in appendix **E** (pp. 401-410) also show that the same is true for model **A** if the possibly influential case 'Denmark 1992' is dropped from the model.

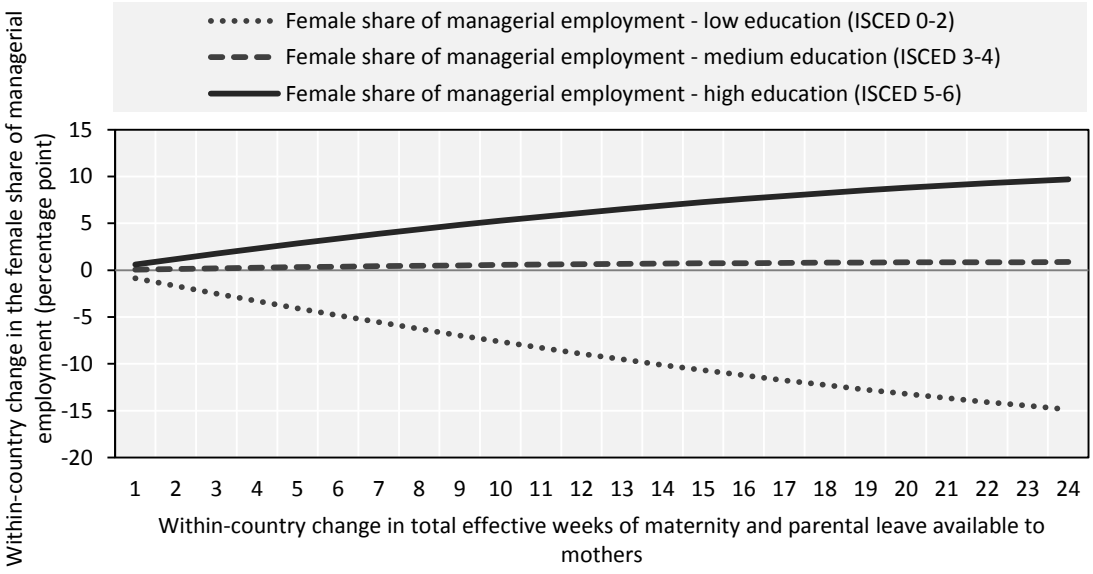
[123] The sensitivity analysis in appendix **F** (pp. 438-442) also shows that the negative coefficient on public childcare services for 3-6 year olds in model **E** moves into significance at the 5% level if any cases imputed using LVCB/NVCF are removed from the model. The coefficient, however, remains very small, and the association in general remains hard to explain using the theory.

[124] Notably, the diagnostics in appendix **E** (pp. 401-410) show that if 'Denmark 1992' is dropped from model **A** the negative coefficient on flat-rate parental and childcare leave moves into significance at the 5% level.

At face value, results from models **D-F** continue to provide little guidance as to how any relation between changes in general leave and the female share of managers is structured by education. In all three models, associations between changes in total leave available to mothers and the female share of managers are not statistically significant at the usual 5% level, implying that there is no clear link between changes in general leave and female representation amongst managers once data are disaggregated by levels of education[125]. This is curious of course, given that the association with the overall female share found earlier in chapter **6** must exist at some level of education, although it should be reemphasised that – because no comparable education-differentiated data are available for Australia, Canada, New Zealand or the United States – the sample used in table **7.8** is a little different to that used in chapter **6**[126].

Yet, there are interesting differences across the three models in the estimated coefficients on total general leave available to mothers that may say at least something about how associations between changes in leave and the female share of managers differ by education. For ease of interpretation, these estimates are plotted in figure **7.8**.

Figure 7.8. **Estimated effects of changes in total effective weeks of maternity and parental leave available to mothers on the female share of managerial employment, by education level**
Based on fixed effects estimates from models D-F in table 7.8



[125] It may be worth noting that the coefficients in both models **D** and **F** move into significance at p<0.05 if OLS standard errors are used in place of the CRSEs.
[126] If these same four countries are also excluded from the models shown earlier in table **6.6** in chapter **6**, the negative relation with total leave available to mothers also falls out of statistical significance.

The figure shows that the estimated effects of changes in general leave vary markedly across levels of education, albeit with considerable uncertainty in all three cases given the size of standard errors. The estimate for the female share of managers with low education is similar in direction and in fact larger in size than that seen in chapter **6** for the overall female share – here, the estimated effect of a 24-week change in total general leave is, all else equal, a decrease of just over 15 percentage points in the female share of managers. In contrast, the effect for the female share of managers with moderate education is effectively zero regardless of the length of change. More strikingly, the estimate for the female share of managers with high education is *positive* if curvilinear and of at least moderate size – in this case, a 24 week change is associated with an *increase* in the female share of managers of just under 10 percentage points.

Given the lack of statistical significance, none of these estimates should be used to make their own firm inferences. It cannot be said with any confidence that leave-driven trade off effects *are* concentrated on women with low education – at least not on this evidence alone – and more so that leaves may *promote* the female share of managers with high education. However, when compared against one another, what the coefficients from models **D-F** do suggest is that any adverse effects attached to changes in general leave are unlikely to be particularly strong for highly educated women. Indeed, given that the estimate for highly educated managers is both positive and not *too* far from significance in itself, models **D-F** provides no indication at all that leave entitlements damage the careers of highly educated women, let alone have effects that are particularly severe for the group.

Summary

Considered as a whole, results from this section provide little evidence to support the suggestion that any adverse effects attached to family policy – particularly leave policies – are especially damaging for highly educated women (Shalev, 2008; Mandel and Shalev, 2009; Mandel, 2011; Mandel, 2012). Indeed, the trends outlined in table **7.7** show that growth in the female share of highly educated managers is particularly large and widespread across almost all of the sample countries, while gains for women with low education are generally far smaller and more inconsistent. Put differently, across countries highly educated women are increasingly capable of competing with similarly educated men for top positions, while in several countries women with low education were less able to compete in 2010 than they were in 1992. Given the observed general increase in family policy provision over the period examined – and in particular the

expansion in leave entitlements – these trends provide little immediate indication that it is highly educated women who are most exposed to any policy trade off effects.

The linear regression models shown in the subsection above struggle to produce clear evidence on the effects of changes in leave entitlements, but loosely point the same way. The models provide no strong indication of any link between leave and the female share of managers at any level of education, which is at least a little concerning given that chapter **6** found a clear and significant association when the female share of managers is measured at the overall level. However, particularly when considered alongside the trends and simple bivariate associations shown in table **7.7**, estimates provide absolutely no support for the argument that highly educated women are especially vulnerable to any adverse effects attached to leave entitlements. Rather, changes in the female share of managers with high education appear at worst independent of changes in maternity and parental leave.

Elsewhere, the regression models do produce a couple of other interesting – and, indeed, statistically significant – results. Father-specific leaves appear to promote the female share of managers with low education. This ties in well with the tentative suggestion in the previous subsection that it is less educated women who are most at risk from leave-driven trade off effects, with the broader inference being that the female share of managers with low education is fairly sensitive to the gender balance of leave entitlements in general. Changes in childcare provision, meanwhile, are found to increase the female share of managers with both low and high education, although curiously not those with moderate education. This is a reasonably novel result as no existing comparative 'over time' studies find or indeed explore the influence of public childcare on women's relative attainment, although it might be used with some caution given that no equivalent relation was found earlier in chapter **6** for the overall female share of managers, and also that it remains difficult to explain why no similar relation is found for moderately-education managers. Regardless, it provides at least some indication that public childcare provisions may help women access high status positions.

7.5. Gender gap in the proportion of employees with top quintile annual earnings, by education level

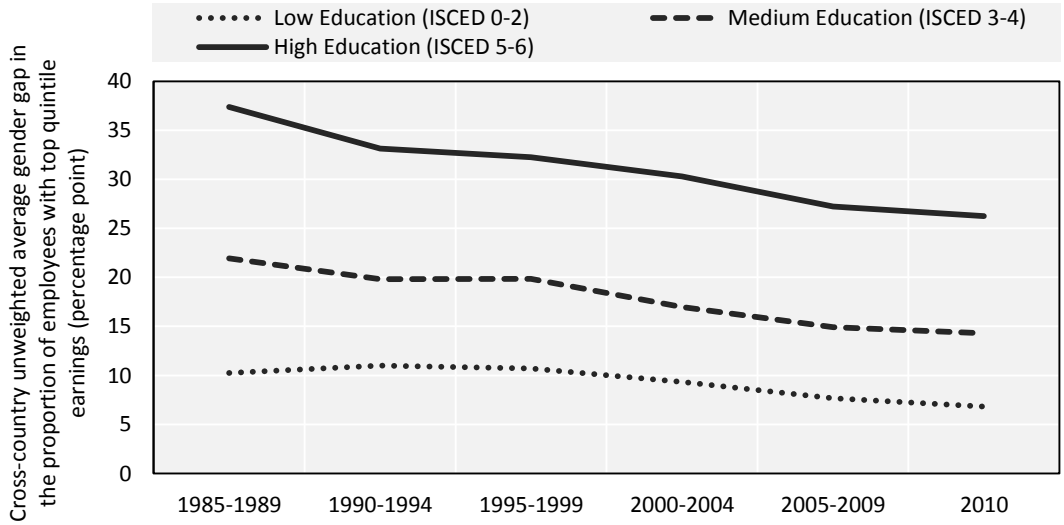
In theory, relations between family policy and gender equality in access to high earnings should be structured by education in a manner similar to that predicted – but not found – in the last section for the female share of managerial employment. The results shown

earlier in chapter **6** confirm that changes in certain policies – specifically, leave entitlements for mothers – may inflate gender differences in top earnings. According to Mandel and others (Shalev, 2008; Mandel and Shalev, 2009; Mandel, 2011; Mandel, 2012), these adverse trade off effects should be concentrated on and strongest for highly educated women, who would otherwise be the most likely candidates for high earning positions[127]. This last section examines whether relations between changes in policy and the gender gap in the proportion of employees with top quintile annual earnings vary across levels of education, with particular attention again paid to links between changes in leave policies and gender differences in top earnings among highly educated employees.

Description of trends and changes in the gender gap in top quintile annual earnings by level of education, and links with changes in family policy

Patterns of development across levels of education in the gender gap in top quintile earnings are not dissimilar to those seen in the last section for the female share of managers. Figure **7.9** plots the cross-country unweighted average gender gap in the proportion of employees with top-quintile annual earnings for employees with low, medium and high levels of education between 1985-1989 and 2010.

Figure 7.9. **Cross-country unweighted average gender gap in the proportion of employees with top quintile earnings by education level, 1985-2010**



[127] Employees with high education are, in the sample, disproportionately likely to have annual earnings in the top fifth of the earnings distribution. On average across the sample counties and years, 38% of employees with high education hold top quintile earnings. That said, a reasonable proportion of employees with low education and medium education also achieve top earnings – the mean averages for the two across the sample are 8% and 15%, respectively.

Over the years examined, average gender differences in top quintile earnings fall at all levels of education. Again, though, decreases in the gender gap are far larger among employees with high-level qualifications than they are amongst their less educated counterparts. The unweighted average gender gap at low levels of education, for example, falls by just under 3.5 points over the series, from around 10 percentage points in 1985-1989 to just under 7 points in 2010. Conversely, the equivalent gap for employees with high education drops from 37.5 points in 1985-1989 to just over 26 in 2010. To be clear, the average gap is far smaller in size for employees with low levels of education, and proportional changes are comparable at all three levels of education[128]. However, the general inference from figure **7.9** is that highly educated women have made particular progress in their ability to compete with similarly educated men for high earnings over the years 1985-2010.

Patterns of change across the individual countries tell a mostly similar story. Panels **A**, **B** and **C** in table **7.9** (overleaf) summarise by country changes in the gender gap in the proportion of employees with top quintile earnings for employees with low, medium and high education, respectively. Countries are ranked in ascending order according to change in the gender gap between the first five-year period (1985-1989) and 2010, or the latest period available. The table once more includes descriptive statistics and measures of linear dependence.

At all three levels of education, a majority of sample countries see at least some decrease in the gender gap in top earnings. Indeed, in each case only between two and three countries experience any kind of increase in gender differences in high earnings. Those countries that perform poorly are fairly consistent across levels of education – Austria and Belgium in particular see either an increase or only a small decrease in all three gender gaps. High performing countries, however, are a little more diverse. Ireland, for example, sees the largest decrease in the gender gap at both low and medium levels of education, but only a comparatively small decrease in the gap amongst highly educated employees. Australia, meanwhile, performs exceptionally well at high education, but shows only a marginal gain in equality amongst employees with moderate level qualifications. More widely, gains in equality are considerable at all three levels of education but are generally largest among employees with high education. The general picture then, is that gains are

[128] The gender gap in the proportion of employees with top quintile annual earnings for employees with low education falls by 33.6% over the series, while the equivalent proportional change for employees with medium education is 34.9% and for high education 29.8%.

Table 7.9 **Summary of change in the gender gap in top quintile earnings, 1985-1989 to 2010[a] (five-year averages), by education level**

With changes in the three policy indices, 1985-1989 to 2010[a] (five-year averages), and descriptive statistics. Countries are ranked in ascending order by change in the gender gap.

	A. Low education (ISCED 0-2)						B. Medium education (ISCED 3-4)						C. High education (ISCED 5-6)					
	Change, 1985-1989 to 2010 [a]						Change, 1985-1989 to 2010 [b]						Change, 1985-1989 to 2010 [c]					
	Country	Gender gap in top quintile earnings	Dual earner-carer leave policy index	Dual earner childcare policy index	General family support policy index	Total general maternity and parental leave available to mothers	Country	Gender gap in top quintile earnings	Dual earner-carer leave policy index	Dual earner childcare policy index	General family support policy index	Total general maternity and parental leave available to mothers	Country	Gender gap in top quintile earnings	Dual earner-carer leave policy index	Dual earner childcare policy index	General family support policy index	Total general maternity and parental leave available to mothers
1	Ireland	-9.6	0.12	1.43	0.67	2.09	Ireland	-11.4	0.12	1.43	0.67	2.09	Australia	-17.2	0.00	0.26	0.48	0.00
2	Germany	-8.2	1.38	0.50	0.62	12.30	United States	-11.3	0.00	0.34	0.50	0.00	Luxembourg	-15.4	1.73	1.23	0.91	23.66
3	Canada	-7.4	0.58	0.06	0.05	18.60	Greece	-10.5	0.10	0.16	-0.08	1.00	Sweden	-13.4	0.49	1.15	-0.13	-7.98
4	United Kingdom	-6.1	0.32	0.67	-0.08	4.94	Luxembourg	-10.1	1.73	1.23	0.91	23.66	United States	-13.2	0.00	0.34	0.50	0.00
5	United States	-5.9	0.00	0.34	0.50	0.00	Canada	-9.5	0.58	0.06	0.05	18.60	Canada	-11.5	0.58	0.06	0.05	18.60
6	Denmark	-5.6	-0.28	1.16	0.07	-3.66	Finland	-9.1	0.43	0.80	-0.65	-2.00	France	-10.1	-0.05	0.74	-0.28	9.10
7	France	-4.7	-0.05	0.74	-0.28	9.10	United Kingdom	-7.1	0.32	0.67	-0.08	4.94	Denmark	-9.5	-0.28	1.16	0.07	-3.66
8	Finland	-3.8	0.43	0.80	-0.65	-2.00	Denmark	-7.0	-0.28	1.16	0.07	-3.66	Finland	-9.1	0.43	0.80	-0.65	-2.00
9	Luxembourg	-3.8	1.73	1.23	0.91	23.66	Norway	-6.2	1.00	1.22	0.02	17.60	United Kingdom	-8.5	0.32	0.67	-0.08	4.94
10	Greece	-3.2	0.10	0.16	-0.08	1.00	Italy	-6.2	0.66	0.68	1.10	0.12	Norway	-7.9	1.00	1.22	0.02	17.60
11	Sweden	-2.1	0.49	1.15	-0.13	-7.98	Sweden	-5.3	0.49	1.15	-0.13	-7.98	Netherlands	-7.2	0.60	1.22	0.06	6.76
12	Spain	-1.9	0.44	1.10	0.05	3.20	France	-3.8	-0.05	0.74	-0.28	9.10	Greece	-7.0	0.10	0.16	-0.08	1.00
13	Netherlands	-1.5	0.60	1.22	0.06	6.76	Netherlands	-3.3	0.60	1.22	0.06	6.76	Spain	-6.7	0.44	1.10	0.05	3.20
14	Belgium	-0.8	0.34	0.55	-0.18	3.38	Spain	-2.9	0.44	1.10	0.05	3.20	Italy	-6.2	0.66	0.68	1.10	0.12
15	Italy	0.2	0.66	0.68	1.10	0.12	Germany	-2.3	1.38	0.50	0.62	12.30	Ireland	-4.3	0.12	1.43	0.67	2.09
16	Austria	1.6	0.16	0.39	-0.19	-4.53	Australia	-1.0	0.00	0.12	-0.26	0.00	Austria	-2.6	0.16	0.39	-0.19	-4.53
17	Norway	2.9	1.00	1.22	0.02	17.60	Austria	0.9	0.16	0.39	-0.19	-4.53	Germany	0.7	1.38	0.50	0.62	12.30
18	Australia	-	-	-	-	-	Belgium	4.1	0.34	0.55	-0.18	3.38	Belgium	8.0	0.34	0.55	-0.18	3.38
19	New Zealand	-	-	-	-	-	New Zealand	-	-	-	-	-	New Zealand	-	-	-	-	-
20	Portugal	-	-	-	-	-	Portugal	-	-	-	-	-	Portugal	-	-	-	-	-
Mean		-3.52	0.47	0.79	0.15	4.97		-5.65	0.44	0.75	0.12	4.70		-7.83	0.44	0.76	0.16	4.70
Pearson's r coefficent with change in gender gap			0.11	0.10	-0.20	-0.12			-0.05	-0.15	-0.33	-0.18			0.05	-0.04	-0.14	-0.08
Bivariate regression beta coefficient with change in gender gap			0.74	0.82	-1.52	-0.05			-0.40	-1.48	-3.19	-0.09			0.53	-0.58	-1.83	-0.05

Note: * = p<0.05 ** = p<0.01 *** = p<0.001. ^ = p<0.1. The bars symbolize the magnitude of change between 1992 and 2010[a]. Lighter grey bars show positive change, darker grey negative change.

a. Austria, 1990-1994 to 2000-2004; Belgium, 1990-1994 to 2000-2004; Denmark, 1985-1999 to 2000-2004; France 1985-1999 to 2005-2009; Germany, 1990-1994 to 2010; Greece, 1995-1999 to 2010; Ireland, 1990-1994 to 2010; Netherlands, 1990-1994 to 2010, Norway, 1985-1989 to 2000-2004; Spain, 1990-1994 to 2010; Sweden, 1990-1994 to 2005-2009, United Kingdom, 1995-1999 to 2010. Australia, New Zealand and Portugal are missing entirely.

b. Austria, 1990-1994 to 2000-2004; Belgium, 1990-1994 to 2000-2004; Denmark, 1985-1999 to 2000-2004; France 1985-1999 to 2005-2009; Germany, 1990-1994 to 2010; Greece, 1995-1999 to 2010; Ireland, 1990-1994 to 2010; Netherlands, 1990-1994 to 2010, Norway, 1985-1989 to 2000-2004; Spain, 1990-1994 to 2010; Sweden, 1990-1994 to 2005-2009, United Kingdom, 1995-1999 to 2010. Australia, New Zealand and Portugal are missing entirely.

c. Austria, 1990-1994 to 2000-2004; Belgium, 1990-1994 to 2000-2004; Denmark, 1985-1999 to 2000-2004; France 1985-1999 to 2005-2009; Germany, 1990-1994 to 2010; Greece, 1995-1999 to 2010; Ireland, 1990-1994 to 2010; Netherlands, 1990-1994 to 2010, Norway, 1985-1989 to 2000-2004; Spain, 1990-1994 to 2010; Sweden, 1990-1994 to 2005-2009, United Kingdom, 1995-1999 to 2010. Australia, New Zealand and Portugal are missing entirely.

fairly widespread across countries and levels of education but with progress towards equal representation sharpest at high levels of education.

These broad trends again provide little immediate support for the argument that family policies are particularly likely to harm the careers of highly educated women. Indeed, just as for the female share of managerial employment discussed in the last section, for most countries the period 1985-2010 is one that couples a general increase in family policy provision with a *decrease* in gender earnings inequality across at all levels of education, but particularly amongst highly educated employees.

Generally, associations between the size of changes in policy and the various gender gaps suggest developments in access to top earnings are mostly unrelated to policy change at all levels of education. Correlations with changes in both dual earner policy indices are very weak across education levels. Relations with general family support policy are slightly stronger – particularly for the gender gap in top quintile earnings for employees with moderate education – and notably are negative, but remain fairly modest nonetheless. Perhaps most important given the results of chapter **6**, correlations with changes in total maternity and parental leave are also weak across levels of education. Broadly then, these initial relations indicate that changes in all three gender gaps are mostly independent of changes in policy.

Fixed effects regression analysis the gender gap in top quintile annual earnings, by level of education

Table **7.10** (overleaf) presents results from fixed effects regression models for the gender gap in the proportion of employees with top quintile annual earnings at varying levels of education. Models **A-C** are again the main or primary fixed effects models. The gender gap in top quintile earnings for employees with low education is the dependent variable in model **A**, while the gaps for employees with moderate and high levels of education are the dependent variables in **B** and **C**, respectively. Models **D-F** are again similar, but use the alternative measures of leave policy as independent variables.

The main models in **A-C** generally show few statistically significant results across all three levels of education, although a couple of estimates remain noteworthy nonetheless. Model **C**, for instance, shows a positive and highly significant association between changes in tax support for the family and the gender gap in top quintile earnings for employees with high

Table 7.10. **Two-way fixed effects models for the gender gap in top quintile earnings, by education level**

	Specification set:	Main specification										
	Dependent variable:	Gender gap in top quintile earnings						Gender gap in top quintile earnings				
	Model:	**A**		**B**		**C**		**D**		**E**		**F**
	Education level:	Low education (ISCED 0-2)		Medium education (ISCED 3-4)		High education (ISCED 5-6)		Low education (ISCED 0-2)		Medium education (ISCED 3-4)		High education (ISCED 5-6)
Lag	Variable	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE
	Dual earner-carer leave policy												
t	Mother-specific earnings-related leave	0.158	(0.648)	-0.735	(0.418) ^	-0.886	(0.630)						
t	Father-specific leave	0.293	(0.495)	-0.123	(0.259)	0.823	(0.430) ^	0.326	(0.444)	-0.335	(0.230)	0.434	(0.511)
t	Gender-neutral earnings-related parental leave	0.115	(0.231)	0.107	(0.131)	0.201	(0.276)						
	Dual earner childcare policy												
t	Children under 3 in public childcare	-0.486	(0.281) ^	0.189	(0.191)	-0.870	(0.429) ^	-0.427	(0.322)	0.093	(0.233)	-0.873	(0.387) *
t	Children 3-6 in public pre-primary care or primary school	-0.022	(0.066)	-0.020	(0.071)	0.009	(0.104)	-0.017	(0.068)	-0.002	(0.085)	0.036	(0.123)
t	Public expenditure on childcare services	-0.182	(0.854)	0.050	(0.656)	-0.665	(1.202)	0.201	(1.073)	0.142	(0.676)	-0.242	(1.490)
	General family support policy												
t	Child benefit per month for two chlldren	-0.395	(0.591)	0.305	(0.459)	-0.530	(0.308) ^	-0.318	(0.536)	0.154	(0.368)	-0.708	(0.413) ^
t	Tax support for families	-0.194	(0.448)	0.342	(0.213)	1.488	(0.525) **	-0.184	(0.407)	0.132	(0.193)	1.016	(0.377) *
t	Flat-rate parental leave and childcare leave	0.150	(0.280)	-0.151	(0.172)	-0.427	(0.237) ^						
	Alternative measures of leave policy												
t	Total maternity and parental leave available to mothers							0.637	(0.450)	0.123	(0.400)	-0.003	(0.778)
t	(Total maternity and parental leave available to mothers)^2							-0.010	(0.009)	0.000	(0.007)	0.001	(0.012)
t	Childcare leave							0.148	(0.228)	-0.125	(0.154)	-0.276	(0.203)
t	Service Sector Size	-0.509	(0.400)	0.083	(0.469)	-0.834	(0.683)	-0.435	(0.468)	0.004	(0.455)	-0.869	(0.729)
t	Public Sector Size	0.108	(1.180)	0.620	(1.078)	-1.996	(2.257)	0.227	(1.208)	0.490	(1.110)	-1.581	(2.472)
t	Crude birth rate	0.077	(0.903)	-0.344	(0.657)	-0.551	(1.056)	0.135	(1.003)	-0.179	(0.668)	-0.422	(1.264)
t	Employment protection legislation index	4.910	(3.020)	-0.959	(1.865)	-4.954	(4.091)	5.308	(2.309) *	1.727	(1.839)	-1.750	(3.820)
t	Economic freedom index	-1.081	(3.385)	0.706	(1.753)	4.211	(3.435)	-0.104	(3.200)	-0.056	(2.223)	3.437	(3.716)
	Joint F-test on total leave for mothers and its square (d.f)							1.060	(2, 27)	0.220	(2, 27)	0.010	(2, 28)
	n	80		81		82		80		81		82	
	r-squared (within)	0.907		0.956		0.968		0.911		0.952		0.963	

Note : * = p<0.05 ** = p<0.01 *** = p<0.001. ^ = p<0.1. The joint F-test on total maternity and parental leave available to mothers and its square tests the null that the two are jointly equal to zero. New Zealand and Portugal excluded from all specifications due to missing data. Certain results are sensitive to the omission of potentially influential observations (see appendix **E** for diagnostics).

Specifications :

A-C. Two-way fixed effects (country and time) with country-specific time-trends and heteroscedasticity robust standard errors. Main specification

D-F. Two-way fixed effects (country and time) with country-specific time-trends and heteroscedasticity robust standard errors Leave indicators simplified into 'Total effective weeks of maternity and parental leave available to mothers' and its square, plus 'Effective weeks of father-specific leave' and 'Effective weeks of childcare leave'.

education. Notably, a similar relation was also found for the overall gender gap in chapter **6** – the extension here is to suggest that the effect is concentrated almost entirely on employees with high levels of formal education[129]. Models **A** and **C**, meanwhile, both hint at some kind of negative relation between changes in childcare provision for children under three and the gap in top quintile earnings for employees with low and high education, respectively. Both are significant only at the more lenient 10% level, and so should be used with caution[130] [131]. However, it is noticeable that in both cases similar relations were also found in the last section for the female share of managers. As a result, they add at least a little weight to the suggestion from section **7.5** that childcare provision may help promote women's relative attainment.

Most importantly though, estimates from across the three main models again offer no indication that highly educated women are at particular risk from any adverse effects attached to leave policies. Indeed, if anything estimates from **A-C** point towards *negative* associations between changes in at least some leaves and gender differences in high earnings amongst more educated employees. Models **B** and **C**, for example, show negative and very large coefficients on mother-specific earnings related leave, while model **C** also shows a similar estimate on changes in flat-rate 'general family support' parental and childcare leave. In all cases these associations are non-significant[132] at the 5% level at least, so none can be used to make any kind of definite inference. However, what remains noteworthy is that all three estimates are negative and so substantial in size, while the equivalent coefficients in model **A** for employees with low education are in all cases positive if small. It would be a stretch to conclude from these estimates that increases in either mother-specific earnings-related leave or flat-rate parental and childcare leave can

[129] As noted in section **6.4**, this association is curious and difficult to explain using the theory. Potential explanations given in section **6.4** include the possibility that tax support for the family may produce some disincentive for second earner women to push for high earning positions on account of increased household income, and that tax subsidies may encourage first earner men to reach high wages due to reduced marginal tax rates for first earners. The concentration of the association on highly educated men and women only increases the curiosity of the relation – it is difficult to see why either of these effects should be particularly strong for highly educated men and women, other than the fact that the relative earnings attainment of highly educated men and women may be most sensitive to changes in policy simply because many high earners tend to be highly educated in the first place.

[130] The diagnostics shown in appendix **E** (pp. 401-410) suggest that the relation in model **C** for the gap amongst employees with high education becomes moves into significance at the 5% level if 'Denmark 1985-89' is dropped from the model.

[131] The sensitivity analyses in appendix **F** (pp. 443-446) show that in both cases the association moves out of significance altogether if cases imputed using LVCF/NVCF are removed from the models. However, this may be due as much to a lack of statistical power in these alternative models (n = 65) than to the removal of the imputed cases themselves (see appendix F for more discussion).

[132] That said, the diagnostics shown in appendix **E** (pp. 401-410) suggest that the relation in model **B** for the gap amongst employees with moderate education becomes significant if either 'Ireland 2010', 'Austria 1990-94', 'Austria 2000-04' are removed from the model.

actively help close gender gaps in top earnings among men and women with higher levels of education. However, they certainly provide no evidence to suggest that changes in these leaves damage highly educated women's access to top earnings, let alone have adverse effects that are particularly severe for the group.

That said, once again, in chapter **6** clear evidence of the damaging effects of leave on gender differences in top quintile earnings only became visible once leaves were measured through the alternative set of indicators. This alternative specification is recreated for the gender gap at the three levels of education in models **D-F** in table **7.10** (pg. 276).

Associations between changes in total maternity and parental leave available to mothers and the gender gap in top quintile earnings are once more not statistically significant across all three models[133]. Similar to the female share of managers covered in the last section then, models **D-F** provide no clear or immediate evidence as to how changes in leaves for mothers influence equality in high earnings across levels of education. However, also like models for the female share of managers, differences across the three models in the estimated coefficients on total maternity and parental leave for mothers do perhaps provide some clues or hints as to how relations may be structured by education. For ease of interpretation, figure **7.10** plots the estimated effects of changes in total leave on the gender gap in top quintile earnings for employees with low, medium and high education.

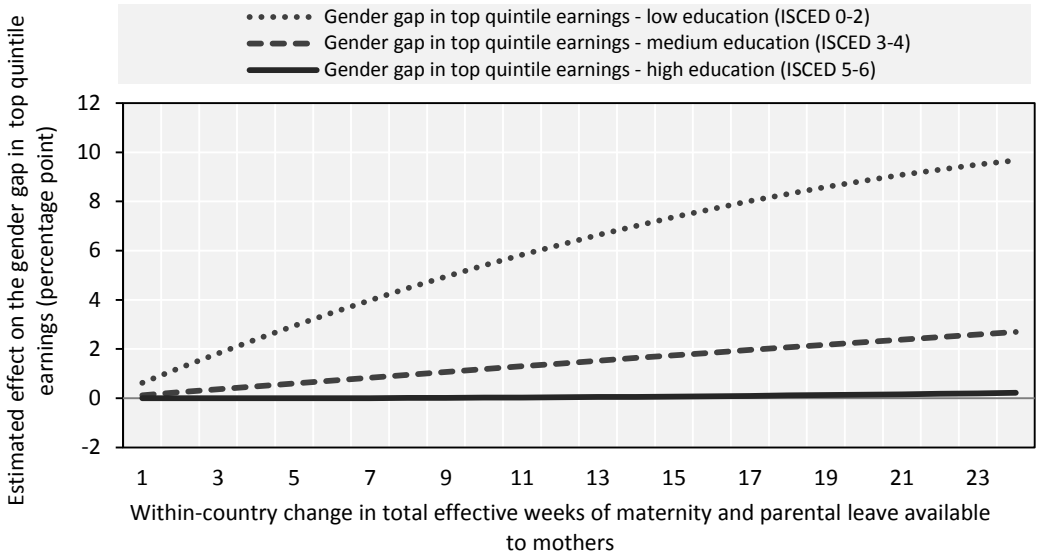
The estimated effect of changes in general leave on high earnings amongst employees with low education are similar to those seen in chapter **6** for the overall gender gap – a 24 week extension in the total length of leave on offer to mothers is estimated to increase the gender gap amongst less educated employees by just under 10 percentage points, all else equal. In contrast, the equivalent estimate is – at 2.7 percentage points – far smaller for employees with moderate education, while the estimated effect on the gender gap amongst employees with high education is effectively zero.

It is important to reiterate once more that all three relations are not statistically significant and cannot stand alone. Thus, there is again no strong evidence of any link between leave entitlements and top earnings at any level of education, which is in itself curious given the association found in chapter **6** for the overall gender gap. However, for

[133] Notably, the diagnostics presented in appendix **E** (pp. 401-410) show that the negative coefficient on total maternity and parental leave available to mothers in model **D** for the gap amongst employees with low education increases in size and becomes highly significant if the influential case 'Sweden 1990-94' is dropped from the model.

Figure 7.10. **Estimated effects of changes in total effective weeks of maternity and parental leave available to mothers on the gender gap in top quintile earnings, by education**

Based on fixed effects estimates from models D-F in table 7.10



the gender gap amongst those with moderate and particularly high education this lack of statistical significance is half the point – changes in leave entitlements for mothers appear completely unrelated to movements in gender differences in top quintile earnings for employees with higher levels of educational attainment. When considered together with the comparatively tiny coefficient on general leave for the gender gap amongst highly educated employees – as well as the estimates for the various different types of leave outlined above – this lack of significance again provides absolutely no support for the argument that any adverse effects attached to leave policies are likely to be strongest for or concentrated on women with high levels of education.

Summary

Overall, results from this section produce inferences that are not dissimilar to those for the female share of managers. Trends and changes in the gender gap in top quintile annual earnings suggest that all female employees regardless of education are increasingly capable of competing with similarly educated men for high earnings, but with progress particularly large for highly educated women. Initial descriptive associations suggest these developments are mostly unrelated to changes in policy – in other words, there is no immediate link between the size or direction of changes in policy provision and the magnitude of progress towards equality at any level of education. Likewise, results from the linear regression analyses also show few clear and statistically significant relations. Nonetheless, several results remain interesting.

First and foremost, the regression models again provide little support for the argument that any leave-driven trade off effects are likely to be particularly severe for highly educated women. Indeed, they provide no evidence to suggest that changes in leave entitlements have any damaging effect at all on earnings attainment amongst women with high levels of education. To reinforce the point, relations with neither total leave for mothers nor any other indicator of leave are statistically significant at any level of education. Nonetheless, estimates once again at least suggest that leave policies do little or no harm to the careers of women with higher levels of educational attainment.

Results elsewhere, meanwhile, provide clearer evidence of effects on gender differences in top earnings that differ across or are specific to employees with particular levels of education. For example, models across table **7.10** show a positive and significant association between changes in tax support for the family and the gender gap in top quintile earnings at high levels of education, while there is again some admittedly weak indication that expanding childcare provision for children under three reduces the gender gap for employees with low and particular high education. Notably though, this latter association is consistent with a similar link found for the female share of managers in the last section. In any case, the headline finding from this section remains that changes in leave policies appear to do no damage to the relative occupational attainment of women with higher levels of education.

7.6. Discussion

In a series of recent papers, Mandel and colleagues (Shalev, 2008; Mandel and Shalev, 2009; Mandel, 2011; Mandel, 2012) argue that the benefits and costs of family policy provision are likely to be structured by class and in particular education. Women with low levels of education are likely to be the primary beneficiaries of dual earner policies. Publicly funded childcare should be especially valuable for less educated women due to the lower market wages typically commanded, while leave policies may be particularly effective at preserving the relatively weak labour market attachment amongst women with low formal qualifications (Shalev, 2008; Mandel, 2011, Mandel, 2012). Highly educated women, meanwhile, are likely to be most exposed to any adverse effects attached to family policy and in particular leave programmes. Leave-driven trade off effects – caused perhaps by inflated discrimination, decreased female human capital or reinforced gender norms – may of course impact on all women aspiring to high status and high wage employment. However, as it is highly educated individuals who are most likely

to be applying for such positions, it is the ability of highly educated women to compete with similarly educated men that should suffer most from any constraints placed on attainment by leave policies. Taken together, the two form the basis of a class-based 'policy paradox' where women with high education 'pay' for increased activity amongst their lower skilled peers through a hardened glass ceiling and additional constraints on career attainment (Shalev, 2008; Mandel and Shalev, 2009; Mandel, 2011; Mandel, 2012).

Results from the previous three sections are not entirely consistent with this class-based policy trade off argument. First off, trends show broad movements over the series towards equality in both economic activity and occupational attainment at all levels of education. Gains in the former do tend to be larger among men and women with low education, but progress towards equal representation in high earnings and amongst managers is generally largest for highly educated women. In other words, in a period characterised by a widespread expansion of dual earner family policy provision, women with low education have made particular gains in activity but their highly educated counterparts have also benefitted from substantial growth in their relative occupational attainment. From the start then, there is no immediate indication that relatively advantaged women have somehow 'paid' for increased activity amongst low-skilled women through constrained career opportunities.

Findings from the linear regression models generally point the same way. Results for changes in the headcount participation rate – shown in section **7.3** – suggest that the effects of certain policies are as theorised concentrated on activity amongst men and women with low levels of education. Most prominently, changes in childcare provision for children aged less than three appear to promote equality in labour participation primarily amongst men and women with low formal qualifications, as also does tax support for the family, somewhat surprisingly. Similarly, dual earner-type leaves for mothers appear particularly effective at encouraging activity amongst less educated women, at least once models concentrate on participation rates for men and women aged 25-34. However, these same models also show that certain other policies – specifically, father-specific leaves and possibly childcare services for slightly older children – operate mostly to the benefit of highly educated women. In substantive terms, the size of the respective coefficients mean that – on balance – women with low education may gain more from family policy provisions in general. Nonetheless, findings continue to indicate that the benefits of family policy are not exclusive to women with low formal education.

Results for the two indicators of occupational attainment, meanwhile, provide no evidence

to suggest that it is highly educated women who suffer most from any adverse trade off effects attached to leave programmes. To be clear once again, the regression models presented in sections **7.4** and **7.5** struggle to produce clear and statistically significant relations between leave and attainment at any level of education. However, in both cases estimates suggest that changes in maternity and parental leave policies are – however measured – at worst unrelated to changes in the ability of highly educated women to compete for top positions and high earnings, both in isolation and particularly also when compared to equivalent estimates for their less educated peers. When combined with the trends and bivariate associations shown across the two sections – which themselves suggest that gains in the relative attainment of highly educated women are comparative large across countries whatever the change in policy – the broad inference is that highly educated women have made particular progress in their ability to compete for top positions regardless of changes to leave entitlements. In other words, leave policies seem to do no harm to the careers of highly educated women, and – in contrast to theories around any class-based 'policy paradox' – certainly do not appear to carry damaging effects that are particularly severe for women with high level qualifications.

As the data, methods and technical specifications used in these analyses are so similar to those also used in the previous two chapters, the results above are subject to all the same caveats, qualifications and limitations. Firstly, the technical specifications used throughout the linear regression analyses remain reasonably conservative so tests are again fairly 'hard'. The use of gender gaps or equality-based measures as dependent variables, for instance, once again demands that policies influence *gender differences* in labour market outcomes at the various levels of education, rather than female outcomes only. Likewise, the use of cluster robust standard errors (CRSEs) to correct for complications caused by non-spherical errors may once more 'reduce' the number of statistically significant relations[134].

Second, results are as ever limited by the data and measures used. In particular, data for two of the three indicators used here – the labour force participation rate and the female

[134] Notably, if models for the female share of managers are run with the normal OLS standard errors, changes in total general leave available to mothers share a negative and significant relation with the female share of managers with low education, and a *positive* and significant association with the female share of managers with high education. This would – if used – provide further and more solid evidence to suggest that leave entitlements constrain the attainment of low-skilled women, and actually *promote* the achievement of their highly educated counterparts. Again, though, these estimates are of uncertain validity. Tests shown in appendix **B.4** (pp. 330-332) confirm that residuals from models for the female share of managers suffer from panel heteroscedasiticity and serial correlation, so OLS standard errors are likely to be open to bias (Beck and Katz, 1995; Beck, 2001).

share of managers – cover the European sample countries and the years 1992-2010 only. As a result, estimates ignore changes in policy and equality within the four excluded non-European countries, and those that occurred before 1992 in all countries. In the case of the female share of managers, it is possible that the loss of the four non-European countries – Australia, Canada, New Zealand and the United States –may help explain the lack of statistical significance on associations between changes in leave and women's access to managerial employment at all three levels of education. That said, the same is also true for associations between changes in leave and the gender gap in top quintile earnings where country coverage is more comprehensive and consistent with chapter 6 even if measurement remains only at five-year intervals. There also remain issues around operationalisation. As discussed earlier in chapter **6**, the female share of managers and the gender gap in top quintile earnings are unlikely to perfectly capture gender equality in occupational attainment, and their use here provides only an indication of the relative labour market achievements of men and women at any levels of education. Lastly, the employment data used remain fairly aggregated despite by being broken down by levels of education and, in the one case, age. It is more than feasible that different relations exist amongst, for example, parents and non-parents. Unfortunately, comparable country-level data that are broken down by parenthood status – with or without further disaggregation by education – are not available.

Notwithstanding these limitations, results from this chapter carry important if not particularly straightforward implications. First and foremost, the general inference regarding leave entitlements for mothers is that any contradictory effects do not seem to operate along class divisions – as is argued by Mandel and colleagues (Shalev, 2008; Mandel and Shalev, 2009; Mandel, 2011; Mandel, 2012) – in as much as highly educated women do not appear to 'pay' for the provision through decreased career attainment. This is not to say that leaves do not carry paradoxical effects – the results of chapter **6**, after all, continue to suggest that changes in leave may moderate gains in women's relative attainment – but the important point here is that these costs do no appear to fall on a group of women – those with high education – who would otherwise gain little from the provision. This of course compromises at least part of the basis of the theorised class-based policy paradox.

The problem in this situation, though, is that logic suggests that the associations found at the overall level in chapter **6** must exist at *some* level of education. On balance, results shown across the chapter hint – but only hint – that it may be the careers of women with *lower* levels of education that are most likely to be at risk from any adverse effects

attached to leave. Growth in women's relative attainment is comparatively mild at lower levels of education, and estimates from the regression models in section **7.4** and **7.5** – while generally highly uncertain – consistently point towards negative effects from leave programmes for women with low education that are far larger in size than any equivalent effect on their more educated counterparts. It should be stressed that the evidence here is far from conclusive – the estimates for less educated women are ultimately not significant – and any association certainly requires further study, but if proven further such a relation would mean that any policy paradox is less 'inter-class' and more 'intra-class', with both the benefits and costs of policy provision falling mostly on women with low level qualifications. Regardless, the central point remains that leaves entitlements appear to do no harm to the attainment of highly educated women.

Explaining the absence of any adverse effects from leave on highly educated women - and, by implication, the possibility of an 'intra-class' trade off – requires some modification of the policy paradox argument. One possible reason why changes in leave appear generally irrelevant to highly educated women's experience of the labour market is that highly educated women are typically less likely to make use of entitlements in the first place. As Moss (2010) notes, information on the take up of leave across socio-economic groups is unfortunately scarce. However, where data are available the suggestion is that women with high level qualifications are less likely to take leave and, when they do, are typically on leave for a shorter period of time than their less educated counterparts (Moss, 2010: 32). More widely, several studies find that better qualified women return to work sooner after childbirth (Gustafsson et al, 1996; Macran, et al, 1996; Rönsen and Sundström, 1996; Gutiérrez-Domènech, 2005) – with Pronzato (2007) showing this pattern holds across European countries regardless of policy setting – while Ruuskanen (2006) finds that women without a university degree are far more likely to fail to return to employment at all once their leave entitlement ends. In addition, fertility in most countries generally decreases with education (Mathews, 1997; Eurostat, 2014) – indeed, based on US census data, León (2004) estimates that each additional 3-4 years of education for the mother reduces the number of children by one. Taken together, this suggests that women with high education are less likely to need and take leave, are likely to use less leave, and are more likely to return to employment once their entitlement expires. Thus, as a group women with high formal qualifications typically represent a smaller relative 'risk' for employers looking for candidates for high-level positions, in comparison to their less educated female counterparts at least.

Of course, most career oriented women whatever their level of education might

themselves be expected to behave in a manner similar to that observed for highly educated women – that is, to have fewer children, to take less leave, and to return to employment fairly quickly after childbirth. As a result, none of the factors outlined above are consistent with a human capital or gender role reinforcement explanation of leave-driven trade off effects. However, a statistical discrimination approach would suggest that a risk-averse employer will treat a given individual based on the average characteristics of their demographic. As a result, if employers are aware of the above, then all women with lower education may be judged as high risk while highly educated women may be treated in a manner at least slightly more similar to men[135]. Put differently, changes in leave may have little effect on the careers of highly educated women because employers expect that – on average – such women are likely to make only limited use of the entitlement, while their less educated counterparts may continue to suffer from leave-driven discrimination on account of the relatively high level of use of leave across the group as whole.

Amongst this discussion, it should not be forgotten that this chapter also provides several other notable and, indeed, statistically significant results. Tax support for the family, for instance, appears to both promote equality in economic activity amongst men and women with low education, and constrain equality in top earnings amongst highly educated employees. Thus, there is some evidence here of an inter-class policy trade off, even if both sides of the trade off are mostly unexpected in terms of the theory.

Dual earner-type leave policies, meanwhile, are associated with decreases in gender differences in participation generally but with the profiting group dependent on the exact policy under consideration. More specifically, dual earner-carer leaves available to mothers – mother-specific and gender-neutral earnings-related leaves – operate as expected mostly to the benefit of less educated women, but father-specific leaves appear to promote equal participation only amongst men and women with higher levels of education. The latter result is notable in itself as leaves for fathers are largely ignored in the 'over time' comparative family policy literature (see table **A.1** in appendix **A** (pp. 314-316)) – thus, the suggestion that changes in father-specific leave can influence equal participation at any level of education is relatively novel. However, a further implication here is that while Mandel and colleagues (Shalev, 2008; Mandel and Shalev, 2009; Mandel, 2011; Mandel, 2012) appear correct in their assertion that the benefits of leaves for mothers fall mostly on women with low education, evidence from this chapter suggests

[135] Furthermore, men with high education are themselves more likely to take leave and use a longer period of sharable leaves (Moss, 2010). To some degree, this may further equalise the treatment of highly educated men and women by employers.

that other groups may be able to gain from different forms of dual earner-carer leave policy. In other words, countries may wish to provide a diversity of leaves and target entitlements specifically at men as well as women if they want to balance the positive effects of child-related leaves across groups.

Lastly, and perhaps most prominently, results provide consistent evidence to suggest that changes in public childcare services for children aged less than three promote both equality in economic activity amongst low-skilled men and women, and also the relative occupation attainment of women with both low and high levels of education. Put differently, using public services to reduce new mothers' caring responsibilities and increase returns to second earnings appears to encourage participation and increase the ability of women with various levels of education to compete with similarly educated men for high status and high earning positions. Taken alongside the absence of any link between changes in provision for children under three and gender job segregation (see chapter **6**), these findings suggest that public services for very young children seem to promote gender equality in employment unambiguously.

To sum up, results from this chapter confirm that the effects of changes in family policy on gender differences in employment may vary across levels of education. This finding is important in itself – if nothing else, it suggests that examining fully aggregated data may not always be the most useful approach and may even at times produce misleading results. However, in this particular case variations across education are not always straightforward, and in certain instances are notably inconsistent with theories around a class-based family policy paradox (Shalev, 2008; Mandel and Shalev, 2009; Mandel, 2011; Mandel, 2012). Changes in policy operate mostly but not exclusively to the benefit of less educated women, while leave entitlements appear to do no harm to the careers of highly educated women. These findings of course have implications for arguments around and understandings of the family policy 'paradox'. These implications, along with those emerging from the previous two chapters, are discussed in depth in the following chapter.

Chapter 8. Discussion and conclusion

The overarching aim of this thesis was to provide an empirical examination into the effects of changes in family policy on developments in gender equality in employment. It explored links between within-country variation in policy provision and a variety of gendered labour market outcomes, including gender differences in economic activity and access to high level and high paying positions, as well as outcomes at differing levels of education. This final chapter looks to bring together the various parts of the thesis in order to draw broad conclusions and discuss any implications from the study for both understandings of the effects of family policy and future comparative family policy research. It begins in section **8.1** with a short summary of the rationale behind and the broad methods and approach used in the thesis – a brief overview of 'what was done and why' – plus a review in section **8.2** of the limitations of the study. Section **8.3** synthesises findings from across the thesis and offers answers to its three main research questions, while **8.4** discusses any lessons and implications that emerge from these findings for the comparative family policy literature. Lastly, section **8.5** reviews the contribution of the thesis to the literature, suggests directions for future research, and offers final reflections on the study as a whole.

8.1. Summary of the thesis: what was done and why

Theories of family policy provide a relatively detailed account of how family policy, as a macro factor, may influence gender differences in labour market outcomes. Much of the theory concentrates on the effects of policy on the supply of market labour. Dual earner leave and public childcare policies, it is argued, should encourage female market activity and help close gender gaps in labour participation (Korpi, 2000; Ferrarini, 2006; Korpi, 2010; Mischke, 2011; Korpi et al, 2013), particularly amongst men and women with lower levels of education (Shalev, 2008; Mandel and Shalev, 2009; Mandel, 2011; Mandel, 2012). In contrast, general family support policies – such as family-related tax and transfer schemes, as well as certain leave and childcare provisions – are likely only to reinforce gender roles and constrain female market participation (Korpi, 2000; Ferrarini, 2006; Korpi, 2010; Mischke, 2011; Korpi et al, 2013).

Importantly, though, many of these same family policies may also carry inadvertent adverse 'trade off' effects that inflate gender job segregation and reinforce 'glass ceilings' on women's careers simultaneous with any influence over economic activity (Ruhm, 1998; Blau et al, 2001; Mandel and Semyonov, 2005; Mandel and Semyonov, 2006; Pettit and

Hook, 2009; Hegewisch and Gornick, 2011; Akgunduz and Plantenga, 2012; Thévenon and Solaz, 2013). Most important here are leave programmes, which unless well designed may damage female human capital and rationalise employer discrimination, with negative consequences for women's access to top positions and the concentration of female employees in 'feminised' occupations (Mandel and Semyonov, 2005; Mandel and Semyonov, 2006). Again, these adverse effects are theoretically likely to differ across socio-economic groups. Here, though, it is highly educated women who are expected to be most exposed to any adverse effects attached to policy provision (Shalev, 2008; Mandel, 2012). Together with the expected effects of policy on market participation, this leads to the theorisation of an inter-class 'policy paradox' where family policy in the broad sense operates mostly to the benefit of less educated women at the expense of the careers of their more educated counterparts (Shalev, 2008; Mandel and Shalev, 2009; Mandel, 2011; Mandel, 2012).

This thesis looked to test empirically whether these theoretical relations hold when looking at changes in family policy provision over time. As per the three research questions outlined at the start of the thesis, it asked:

Q1. How do within-country changes in family policy relate to within-country changes in gender equality in labour market activity?

Q2. How do within-country changes in family policy relate to within-country changes in gender job segregation and gender equality in occupational attainment?

Q3. Do relations between within-country changes in family policy and within-country changes in the various areas of gender equality in employment differ with levels of education?

The emphasis on change or within-country variation in these research questions is important. A body of existing empirical comparative research examines and largely supports the theorised relations between family policy and gender equality in employment. However, much of this existing literature is based on cross-sectional data and therefore relies on between-country differences in policy and observed levels of gender equality only. This is problematic, because such associations are open to omitted variables bias – and, therefore, to potentially misleading results – and because static cross-national relations may say little about the impact of a *change* in policy on gendered labour market outcomes (Frees, 2004; Dougherty, 2006; Wilson and Butler, 2007; Bartels, 2008;

Fairbrother, 2014). This thesis looked to overcome these limitations by combining cross-national data with a time-series dimension in order to examine links between changes in policy provision and gender equality in employment.

It should be reiterated that a growing time-focused comparative family policy literature has begun to explore relations between within-country variation in policy and gender differences in labour market outcomes (Winegarden and Bracy, 1995; Ruhm, 1998; Jaumotte, 2003; Ferrarini, 2006; Tranby, 2010; Nieuwenhuis et al, 2012, Akgunduz and Plantenga, 2012; Thévenon, 2013; Thévenon and Solaz, 2013; Nieuwenhuis, 2014). However, this emerging 'over time' comparative literature remains in its infancy. Almost all of the literature focuses on the effects of policy change on what is termed here labour market activity. As a result, answering this thesis' first research question has to some degree represented a replication study. Yet, many of these existing 'over time' studies may suffer from technical issues that are known to increase the likelihood of finding overly-optimistic or misleading results. Thus, much of the value of this part of the thesis comes from the re-examination of existing results with methods that provide a 'harder' or more conservative test of relations. In the event, certain results are found to differ even if broad inferences remain fairly similar.

This thesis' second and third research questions aimed to fill more obvious gaps in the literature. Few comparative studies examine relations between changes in policy and gender segregation and equality in occupational attainment – and, where they do, they concentrate almost entirely on the overall gender pay gap only (Ruhm, 1998; Akgunduz and Plantenga, 2012; Thévenon and Solaz, 2013) – while associations between changes in policy and gendered labour market outcomes at varying levels of education are severely under researched. Thus, existing knowledge on the 'policy paradox' and more so on any inter-class policy trade off remains mostly cross-sectional. These areas of the thesis then looked to go at least some way towards providing an understanding of how within-country variations in policy relate to changes in segregation and gender equality in career attainment, and to labour market equality at varying levels of education, respectively.

The thesis looked to answer its three research questions through a 'large-N' macro quantitative comparative investigation that stretched across twenty OECD countries and the years 1985-2010. Chapter **4** concentrated solely on family policies. It examined trends, patterns and developments in the thesis' measures of family policy – themselves based loosely around Korpi's (2000) distinction between dual earner and general family support policy types – and charted how provisions have changed and evolved across the twenty

sample countries between 1985 and 2010. This exercise held its own value, but was also helpful in that it outlined the policy context and 'set the scene' for the subsequent analyses of associations between policy change and developments in gender equality in employment.

Chapters **5**, **6** and **7** used statistical techniques to examine links between changes in measures of family policy and macro-level indicators of the various aspects of gender equality in employment covered by the thesis' three research questions. Chapter **5** focused on answering the first research question. It set within-country variations in measures of family policy against two macro-level indicators of gender equality in labour market activity – the gender gap in the labour force participation rate, and the gap in usual weekly working hours. Chapter **6** did the same for the thesis' second research question, with changes in policy examined against three macro-level measures of segregation and equality in occupational attainment – the gender gap in employment in 'female-type' occupations, the female share of managers, and the gender gap in top quintile annual earnings. Lastly, chapter **7** disaggregated three earlier measures – the gender gap in the labour force participation rate, the female share of managers, and the gap in top quintile annual earnings – by levels of education in order to explore if and how relations between policy and equality vary across men and women with differing levels of educational.

In all three chapters analysis was conducted primarily through two-way fixed effects multiple linear regression, a form of regression that estimates relations based on within-country variation in the dependent and independent variables only (Ruhm, 1998; Dougherty, 2006; Wilson and Butler, 2007; Bartels, 2008; Wooldridge, 2009). The use of regression in macro comparative research does have its drawbacks, many of which revolve around the transparency of results and the over-simplification of relations (Shalev, 2007a; see the following section). This thesis does acknowledge these drawbacks – indeed, they motivate the inclusion in this thesis of fairly detailed descriptions of trends and developments in that various measures of policy and employment outcomes. However, the strength of regression is in its ability to handle and synthesise large quantities of data, and to provide some level of statistical control between competing determining factors (Pontusson, 2007). Thus, its use throughout this thesis has allowed the study to examine the effects of a range of family policies on gendered labour market outcomes after controlling for the influence of other policies and alternative determinants, and to make use of all observed within-country variation in both policy and equality from across the sample. In other words, at least as far as data are available, regression analysis has allowed this thesis to base its conclusions on experiences relating to policy change from all

twenty sample countries over all years between 1985 and 2010.

8.2. Limitations of the study

Efforts have been made throughout this thesis to identify and highlight limitations and to draw attention to key decisions and compromises relating to the methods and techniques employed. However, some of these limitations impact upon the reading of results and what findings do and do not say. Before moving on to discuss findings and results then, it is worth reiterating these limitations and outlining any implications for general inferences. These limitations are split into three – those that relate to the thesis' overall research strategy, those that emerge from the data and indicators used, and those that are caused by the use of regression as the primary method of analysis.

General research strategy

The 'large-N' quantitative comparative research strategy used in this thesis carries several benefits in terms of sample size and in the extent to which it reduces the risks of selection bias, particularly in comparison to 'small-N' in-depth qualitative comparative studies (Landman, 2000: 24, 49). It also, however, has its drawbacks. Many of these revolve around the need for comparable measures and data that stretch across the sample. In the case of this thesis, comparability was for various reasons and in various ways restricted, which led to compromises in both the measures and sample used.

First, the need to ensure that policy and employment concepts were transferable across countries and time points led to the use of measures of both that were somewhat abstracted. In other words, to make certain that measures had a similar meaning across cases, it was necessary to use stylised or simplified indicators of several family policies and some labour market outcomes. This is important, because simplifying measures impacts on the practical usefulness of results. Specifically, it means that most findings emerging from this thesis – and also from most other large-N comparative family policy studies, for that matter – shed light only on relations between stylised forms of a certain family policies and employment outcomes. As a result, findings and inferences cannot really be used to advise policy-makers on the exact design of policies, but rather offer guidance on the broad types of policy that may or may not impact on gender differences in outcomes.

Second, restrictions on the availability of comparable data mean that the thesis had to

balance depth in terms of coverage of policies and employment outcomes with breadth in terms of sample countries and years. This had twin consequences for the degree to which the thesis could improve understandings on the influence of changes in policy on gendered labour market outcomes. On the one hand, it meant that the sample used in the thesis was restricted to a relatively select group of countries and a fairly moderate time period, which limits the generalisability of results. Concurrently, it also placed restrictions on the measures and indicators of both family policies and particularly employment outcomes. This concern was covered in some depth in chapters **3.2** and **3.3** and is discussed further in the following subsection, but the broad point is that the use of a 'large-N' comparative research strategy led to compromises in the depth and detail with which this thesis could capture policies and employment outcomes. As a result, findings reflect relations between only those policies and aspects of employment for which at least some comparable data were available.

Data and indicators

The data and indicators used throughout this thesis did suffer from various limitations – not least, some measures were subject to high rates of missing data. These limitations were covered in some depth in chapters **3.2** and **3.3** and at various points throughout the thesis. However, two concerns relating to the measurement of gendered labour market outcomes bear repeating here as they impact on the reading of results.

First, it is acknowledged that the indicators of gender equality in employment used in this thesis were not comprehensive, in that they did not capture every aspect or every possible angle on the various areas of employment under consideration. This was particularly true for the measures of gender job segregation and equality in occupational attainment, which, as noted in chapter **3.3**, is a broad and multifaceted area of equality. The selection of indicators of segregation and occupational attainment was based primilarily on those used in the existing family policy paradox literature (Mandel and Semyonov, 2005; Mandel and Semyonov, 2006; Mandel, 2009; Mandel, 2011; Mandel, 2012) with a view to maintaining theoretical and empirical comparability across studies. However, it is recognised that the use of these particular indicators means that the thesis may have missed the influence changes in family policy on various other aspects of gender segregation and occupational attainment – most important perhaps, the effects of policy on sectoral segregation but also the influence of policy on gender differences in employment at the bottom end of the labour market. Similarly, this thesis' three measures of gender equality in employment across levels of education only touch the surface of education-conditioned gender

differences in labour market outcomes. Restrictions on the number of indicators used were necessary in part due to the availability of data, but also because of space in the thesis. Nonetheless, it should be noted that findings and inferences reflect relations between changes in policy and certain aspect parts of gender equality in employment only. There is certainly room for further research that uses wider or alternative measures of the various aspects of gender equality in employment.

Second, it is worth reiterating that most measures of gender equality in employment used in this thesis remain fairly aggregated, even after differentiating certain indicators by levels of education and in some cases age. Again, the use of aggregate country level indicators was necessary due to the availability of comparable data and in particular to the scarcity of comparative micro data that stretches across countries and time. However, it does mean that findings and inferences should be read as the average effect of changes in policy on equality across demographic and socio-economic groups. It remains possible that family policies have differential effects across groups. For example, given certain results from chapter **5** and **7**, it is feasible that relations between policy and the various other outcomes differ across age groups. It was unfortunately not possible to produce measures differentiated by age on any indicator other than the gap in labour force participation rates, but use of more specific age groups might reveal clearer associations between family policy and working hours, and perhaps also differing links with the various measures of gender job segregation and equality in occupational attainment. Likewise, it is also possible that associations may vary across other demographic and socio-economic groups. The existing family policy literature suggests that relations are particularly likely to differ between parents and non-parents (Gornick et al, 1998; Misra, et al, 2008; Nieuwenhuis et al, 2012; Nieuwenhuis, 2014) but the effects of changes in family policy may also vary across the numerous other markers of demographic and socio-economic status, such as single-parenthood or family size and structure (Maldonaldo and Nieuwenhuis, 2014). Again, repetition of this thesis' analyses with data dissagregated by socio-economic groups might reveal different relations between changes in policy and gender differences in employment outcomes.

Regression as the method of analysis

Lastly, while the specific method used throughout the thesis – two way fixed effects multiple linear regression – carries a number of benefits, it is worth noting again that it also restricts what results can and cannot say about relations between changes in policy and gendered labour market outcomes. As touched on above and as covered in chapter

3.4, the use of multiple regression in macro comparative research has been criticised on the grounds that it lacks transparency and over-simplifies relations (Shalev, 2007a). A particularly pertinent aspect of this criticism for the reading of relations revolves around the fact that regression analyses generally – but not necessarily – produce only one single fixed coefficient to summarise the relation between a given independent variable and dependent variable as it exists over the entire sample. Shalev (2007a) in particular suggests this is unrealistic, as diverse contexts across time and especially place mean that the effects of a given variable may vary across the sample.

Almost all of the models produced in this thesis are open to this criticism, as they too summarise relations through only a single fixed coefficient that is assumed to hold across countries and years. As a result, it is important to note that any findings and inferences apply to the sample as a whole, and that the effects of a given policy may differ for a given country or within a certain subset of the sample. As discussed in appendix **B.4** (pp. 335-336), it would of course be valuable to explore whether or not associations differ across countries or time periods. However, such an exercise is expensive – particularly in terms of space – and is beyond the scope of this thesis.

Improvements

With the possible exception of the need to move measures of policy and employment to higher levels of abstraction, most of these limitations are not inevitable – in almost all cases they are caused by constraints on the availability of comparable data, and in some cases by a lack of space in the thesis. Future research undertaking a similar exercise may wish to use individual or micro level repeated cross-section survey data as its source of information on employment outcomes, ideally in combination with multilevel modelling techniques. Such micro data would allow the analysis to better differentiate between different groups of individuals and, dependent on the survey, may contain information on a wider range of employment outcomes. Multilevel models, meanwhile, not only have the ability to estimate the effects of variation in macro level factors such as policy provision on micro level units (Frees, 2004; Rabe-Hesketh and Skrondal, 2012; Fairbrother, 2014), but also have the capacity to neatly and concisely estimate variations in relations across macro units (Beck and Katz, 2007; Bartels, 2008; Rabe-Hesketh and Skrondal, 2012; Fairbrother, 2014). Thus, combining micro level repeated cross-section data with multilevel models would help overcome several of this thesis' major limitations.

Unfortunately, suitable repeated cross-section data are currently scarce. For their

multilevel analyses of relations between policy change and the likelihood of female employment, Nieuwenhuis et al (2012) and Nieuwenhuis (2014) used micro data derived from the Eurobarometer survey series. The Eurobarometer data are, though, heavily restricted in their coverage of employment outcomes. Other possible sources include the Luxembourg Income Study, although as noted earlier data here are generally available only at 5-year intervals and coverage of outcomes is fairly limited in earlier years. Perhaps the most promising sources of repeated cross-section data come from Eurostat, the European Union's statistical office. The European Union Labour Force Survey (EU-LFS), for example, offers comparable micro data on numerous employment outcomes that stretches across all EU member states from 1983 onwards, or from the first year following their accession. However, access to the EU-LFS data is difficult. Efforts were made to access the EU-LFS micro data during the course of this study, but were unfortunately unsuccessful. The European Union Statistics on Income and Living Conditions (EU-SILC) survey offers a more accessible alternative. However, EU-SILC only started in 2004 so at present offers little scope for analyses of the effects policy change. Once the survey has been running for a sufficient number of years, it may offer a fruitful avenue for the investigation of the impact of within-country variation in family policy on gendered labour market outcomes.

8.3. Synthesis of findings

Despite its limitations, the thesis produced a number of notable findings. In terms of broad trends, it has shown that in a period characterised by a general expansion in dual earner leave and childcare policy – as well as, in varying directions, changes to policies that are more supportive of the nuclear family unit – there has been a near universal decrease in gender differences in labour market outcomes across areas of employment and levels of education. It has also shown, however, that relations between changes in policy and these developments in equality outcomes are not always quite as clear or straightforward as the existing literature might suggest. At this point it might be useful to return to the thesis' three research questions before looking to bring results together and draw any emerging broad conclusions.

The thesis' first research question asked how changes in family policy provision relate to developments in gender equality in labour market activity, that is, differences in the extent of male and female market participation. In broad terms, findings from chapter **5** suggest that as expected changes in dual earner leave and childcare policies may help close gender gaps in market participation, even if only amongst 25-34 year olds. Particularly noteworthy here was the finding that the positive effects of general leave on activity

appear driven solely by leave programmes with a dual earner orientation – changes in flat-rate 'general family support' parental and childcare leaves, in contrast, were found to be neutral with respect to the gender gap in market participation. Thus, results from chapter **5** provide at least some support for Korpi's (2000; 2010) assertion that the structure and design of leave policies can have a meaningful impact on the extent to which they encourage dual earning. Also of note was the finding that general family support policies seem to cause little damage to gender gaps in economic activity. Indeed, general family support policies appear largely irrelevant to the relative extent to which men and women are active in the labour market.

It is worth pointing out again that results from chapter **5** did suggest changes in policy are generally unrelated to gender differences in working hours, and also for the most part to participation rates when the latter is measured for the broader 25-54 year old age group. In both cases this is inconsistent with much of the existing 'over time' empirical literature (e.g. Winegarden and Bracy, 1995; Ruhm, 1998; Jaumotte, 2003; Akgunduz and Plantenga, 2012; Nieuwenhuis et al, 2012), perhaps for reasons discussed in the following section. Regardless, broad inferences remain mostly similar – increases in dual earner provisions may help promote female economic activity and encourage equal participation even if they have no impact on working hours.

Findings from chapter **6** were more immediately in line with expectations. The thesis' second research question asked how changes in family policy relate to changes in gender job segregation and equality in occupational attainment, with a particular view to whether or not changes in leave and childcare policies inflate segregation and reinforce 'glass ceilings' on women's careers. Results suggest that changes in neither dual earner provisions nor any other family policies have any clear effect on developments in the relative concentration of women in 'female-type' occupations. However, changes in total general leave available to mothers do appear to constrain growth in women's relative access to both high status managerial positions and to top quintile annual earnings, while notably there is also some suggestion that the introduction of, or extensions to, leaves reserved for fathers may improve women's relative access to high earnings, all else equal. These results provide considerable support for arguments around policy trade offs or the welfare state 'policy paradox' (Mandel and Semyonov, 2005; Mandel and Semyonov, 2006; Pettit and Hook, 2009), particularly when combined with those from chapter **5**.

Finally, the thesis' third research question asked whether relations between policy and gender equality in employment vary across levels of education, with particular focus on

the theorised inter-class policy paradox put forward by Mandel and other (Shalev, 2008; Mandel and Shalev, 2009; Mandel, 2011; Mandel, 2012). Chapter **7** found that the effects of several policies do indeed differ with levels of education. However, these variations did not always follow the expected pattern.

With regard to labour market activity, chapter **7** did find that the effects of public childcare for children under three were concentrated mostly on women with lower levels of education, as also were the effects of certain dual earner-carer leave policies. However, other policies – specifically, father-specific leaves and childcare for slightly older children – were found to promote equal participation only amongst highly educated men and women. The inference here then is that family policy as a whole does not benefit only less educated women – rather, different policies appear to be effective at promoting equality in activity amongst different socio-economic groups, even if on balance less educated women may gain more.

Chapter **7** generally struggled to produce clear findings on relations between policy and occupational attainment at differing levels of education, but several associations were noteworthy nonetheless. There was some evidence to suggest that childcare provision for very young children may promote the relative attainment of women with both low and high levels of education, and surprisingly also that family-related tax subsidies may constrain highly educated women's access to top earnings. However, the headline finding from this part of the thesis was that there was no evidence to suggest changes in leave entitlements cause particular damage to the careers of highly educated women – indeed, changes in the relative attainment of women with high education appear at worst unrelated to alterations in the provision of leave programmes. Thus, the latter half of chapter **7** produced no support at all for the argument that highly educated women in particular 'pay' for policy provisions through decreased career attainment, in turn compromising at least part of the class-based policy paradox (Shalev, 2008; Mandel and Shalev, 2009; Mandel, 2011; Mandel, 2012).

Bringing these various findings together produces an overall account of the effects of family policy that is slightly 'messier' than the neat description given in the literature (Korpi, 2000; Mandel and Semyonov, 2005; Mandel and Semyonov, 2006; Mandel and Shalev, 2009; Korpi, 2010; Mandel, 2011; Mandel, 2012; Korpi et al, 2013). Results suggest that dual earner-type leave and childcare policies may indeed help close gender gaps in labour market activity. These effects operate mostly to the benefit of less educated women, but certain policies – most notably father-specific leaves – do seem to promote

equal participation specifically amongst men and women with high levels of educational attainment. At the same time, certain provisions – specifically, leave entitlements for mothers – may inadvertently damage female attainment and reinforce 'glass ceilings' on women's careers. Yet, this does not appear to apply to highly educated women, whose careers were expected to be *most* at risk from any adverse effects attached to leave entitlements. Findings are unfortunately unclear on which group or groups are subject to these leave-driven 'trade off' effects, but results suggest at least that highly educated women's experience of the labour market is largely unaffected by changes in leave entitlements for mothers.

To some extent then, the overarching finding from across the thesis' empirical chapters is that associations are largely consistent with some form of broad family policy paradox (Mandel and Semyonov, 2005; Mandel and Semyonov, 2006; Pettit and Hook, 2009) but provide less support for the more recent class-based extension to the policy paradox theory (Shalev, 2008; Mandel, 2009; Mandel and Shalev, 2009; Mandel, 2011; Mandel, 2012). In other words, findings indicate that dual earner policy – and leave entitlements in particularly – may at once both promote and damage women's position in the labour market, but there is less evidence to suggest that these contradictory effects operate neatly and clearly along class lines or produce some kind of precise trade off between the separate interests of women with different levels of education.

8.4. Lessons and implications

These various findings carry a number of lessons and implications for the comparative family policy literature. Many of these implications were touched on at various points during the thesis, but several bear repeating here at the conclusion. As a means of organisation, the following splits these lessons into two – first, those that have implications for comparative family policy research and in particular the methods and techniques used in future family policy studies, and second those that impact on the theory and understandings of links between family policy provision and gender equality in employment.

Lessons for research and methods

First off, certain results from various parts of the thesis suggest that there may be meaningful differences between the ways in which policy and employment outcomes are associated in the cross-section, and how the two are related when looking at within-

country changes over time. Much of the rationale behind this thesis was to examine whether relatively well-established cross-sectional associations between policy and equality also hold when relations are stretched across time. This was motivated in large part by concerns about the validity and usefulness of cross-sectional findings, due primarily to their openness to omitted variable bias and their static nature, respectively (Frees, 2004; Dougherty, 2006; Wilson and Butler, 2007; Bartels, 2008; Fairbrother, 2014). As it turns out, many cross-sectional relations remain evident when looking at changes over time. However, in certain instances the 'within-country' relations produced by thesis did not match those from the cross-sectional literature, most often because the given relation was simply not clear or apparent.

This is perhaps best illustrated by results from chapter **7** on associations between changes in policy and the relative occupational attainment of women with differing levels of education. The broad pre-existing argument here – that leaves and perhaps public childcare services are particularly likely to damage the careers of highly educated women – was based entirely on between-country differences in policy provision and the career attainment of women with varying levels of education (Shalev, 2008; Mandel, 2009; Mandel and Shalev, 2009; Mandel, 2011; Mandel, 2012). When looking over time, however, there is simply no evidence to suggest that increases in leave or childcare provisions constrain the careers of women with high education, and in fact highly educated women have made particular progress in terms of relative occupational attainment over a period that can be characterised by a widespread expansion of dual earner policy. This has implications for theory and understandings of course, but the point here is that the use of the cross-sectional association alone may have led to inaccurate or misleading conclusions regarding the impact of policy on women's careers.

The implication in terms of methods then, is that it might be unwise to place *too* much emphasis on associations based only on cross-national or between-countries differences alone. This is not to say that cross-sectional analyses are not worthwhile – far from it, cross-sectional comparative family policy research has generated numerous important insights and has stimulated much of the debate on comparative family policies – or that time-series cross-section techniques and other 'over time' methods are infallible or somehow superior to cross-sectional analyses. Indeed, given data constraints and other complications, comparative studies that focus on within-country variation cannot in many cases – including this one – offer the same level of detail and sophistication as pure cross-sectional studies. It also not to say that, where relations differ, the cross-sectional association is necessarily 'wrong'. As Shalev (2007a) argues, it is feasible that '*the effect of*

a given independent variable may be quite different in time series and cross-section' (2007a: 280), most likely because the causal mechanism differs between the two in some way. However, it should be recognised that cross-sectional comparative studies are vulnerable to omitted variable bias and that the results produced *may* not always accurately reflect the impact of a change in policy on a given outcome.

Notably though, results produced by this thesis did not only differ from those in cross-sectional family policy studies, but also in certain instances from findings in the emerging 'over time' comparative family policy literature. This was particularly the case in chapter **5,** where models produced no evidence of links between changes in policy and gender differences in working hours, and few clear associations between family policy and the gender gap in labour force participation rates among 25-54 year olds. In both cases, clear and statistically significant associations are common in the existing time-series cross-section family policy literature (e.g. Winegarden and Bracy, 1995; Ruhm, 1998; Jaumotte, 2003; Akgunduz and Plantenga, 2012; Nieuwenhuis et al, 2012; see table **A.1** in appendix **A** (pp. 314-316)).

It was argued at the end of chapter **5** that these discrepancies were most likely due to differences in statistical methods and specifications – specifically, the use in this thesis of gender gaps to reduce the risk of bias from wider labour market processes, and more so cluster robust standard errors to prevent bias from residuals that suffer panel heteroscedasticity and serial correlation. It should be reiterated that without direct access to the data used, it cannot be known whether existing studies suffer from these biases, and results presented in this thesis certainly do not disprove those from the existing literature. Indeed, the mismatch in results may also be a consequence of differences in other areas, such as the sample or the exact measures used. It is also worth stating that in the event, these discrepancies did not lead to major differences in inferences – the broad conclusion from chapter **5** remained that certain leave and childcare policies may promote gender equality in economic activity, even if there was no evidence of any impact on working hours. Nonetheless, the differences in results and the evidence used to support the argument above – particularly the alternative models shown in appendix **D** (pp. 377-390) that use the normal uncorrected OLS standard errors – continue to suggest that failure to correct for statistical issues may influence findings.

The wider lesson here then is that addressing statistical concerns and correcting for potential issues and complications may have a considerable impact on results. To be clear, this thesis has not been written on econometric methodology and it does not claim to

present any kind of methodological innovation – indeed, the techniques referred to above are common in wider social science research[136]. Nevertheless, certain results presented in this thesis do provide useful applied examples of the importance of considering statistical complications, and highlight the potential vulnerability of comparative policy research to misleading results should such concerns not be fully addressed.

Lastly, it is worth making a brief note on the importance of disaggregated data and variations in findings across subgroups. Results from chapter **7** suggest that there might be fairly substantial differences in relations across levels of education – and also age groups, for that matter – with in several cases important implications for broad conclusions on the effects of family policy. As an example, results presented in table **7.4** indicate that increases in father-specific leave may promote equal participation but only amongst highly educated men and women. Importantly, this relation was not at all apparent in chapter **5** when looking at links between policy and the overall participation rate. As a result, this and several other potentially useful findings would have been invisible had this thesis used only aggregate level data.

Of course, allowing relations to differ across levels of education barely scratches the surface of possible variations across subgroups. As noted above, existing research already suggests that relations are likely to differ between parents and non-parents (Gornick et al, 1998; Misra, et al, 2008; Nieuwenhuis et al, 2012; Nieuwenhuis, 2014), while the impact of policy may also vary across the numerous other markers of demographic and socio-economic status – for instance, single-parenthood or family size and structure (Maldonaldo and Nieuwenhuis, 2014) – all of which may further modify and possibly compromise existing conclusions on links between policy and employment outcomes. However, the point here is that use of fully aggregated employment data may disguise important relations between policy and labour market outcomes.

The final broader lesson then is that focusing too much on relations between policy and aggregate or overall employment outcomes may lead to inferences that are misleading or perhaps even dangerous. As noted above in section **8.2**, the use of aggregated data is often necessitated by data availability, particularly in situations such as this where information is required to stretch across countries and time. Nonetheless, the limitations of aggregated

[136] For example, the routine for cluster robust standard errors is built into Stata – a mainstream statistical software package – as standard, and the article detailing its introduction to Stata (Rogers, 1993) has according to Google Scholar received 1975 citations. More generally, the seminal article by Beck and Katz (1995) on the dangers of non-spherical errors in time-series cross-section regression has been cited over 4000 times, again according to Google Scholar.

data should at least be acknowledged, and efforts should be made wherever possible to use data that allows for investigation across subgroups.

Implications for theory and knowledge

In addition to these technical lessons, several results from across the thesis carry implications for theories of and conclusions around the effects of policy on gendered labour market outcomes. As always, it would be premature to place too much emphasis on or to draw strong policy conclusions from one single set of results. Nonetheless, a number of findings do have at least some impact on understandings around how family policies influence gender differences in employment.

First and foremost, results from across the thesis provide considerable support for arguments around the wider 'family policy paradox' (Mandel and Semyonov, 2005; Mandel and Semyonov, 2006), in a much as there is consistent suggestion that changes in certain policies – specifically, leave entitlements for mothers – have contradictory effects on gender differences in employment outcomes. Of course, in broad terms the concept of a policy trade off is far from new – as discussed in chapter **2.3**, a sizeable cross-sectional literature already finds that gender gaps in economic activity tends to be lower and gender differences in occupational attainment higher in countries that are more generous providers of leave and childcare policies (e.g. Mandel and Semyonov, 2005; Mandel and Semyonov, 2006; Misra et al, 2008; Mandel, 2009; Mandel, 2011; Mandel, 2012). However, the contribution here is to show that these contradictory effects are also observable when looking at changes in provision within countries over time[137]. In other words, at least as far leave entitlements for mothers are concerned, findings from this thesis verify and solidify cross-sectional associations and suggest that policy trade offs are more than simply a coincidental artefact of between-country differences in policy provision and patterns of gendered employment outcomes.

In substantive terms, establishing that changes in at least some policies carry contradictory effects is important in as much as it adds further weight to the argument

[137] To be clear, several 'over time' comparative studies already show that changes in leave entitlements for mothers encourage female economic activity (e.g. Winegarden and Bracy, 1995; Ruhm, 1998; Jaumotte, 2003; Akgunduz and Plantenga, 2012; Thévenon and Solaz, 2013). However, as discussed in chapters **2** and **6**, evidence on links between changes in leave and women's occupational attainment is limited to only one single study (Akgunduz and Plantenga, 2012) that, in the event, finds an association between leave and the female share of managerial and professional employment that is significant only at the more lenient 10% level. Findings from this thesis build and expand upon this study to solidify the argument that changes in leave policies have contradictory effects on women's employment outcomes.

that it is difficult to provide a set of family policies that are unambiguously 'woman-friendly' (Mandel and Shalev, 2009). Much of the cross-sectional literature frames the discussion of gender trade offs almost in terms of a zero-sum game – the paradoxical effects of family policy mean that it is not possible to promote all aspects of gender equality in employment simultaneously, so countries are forced to 'choose' – based on prevailing gender politics and the wider ideological context – between different forms of gender stratification[138] (Mandel and Semyonov, 2006; Mandel, 2009). Interpretations here are maybe not quite so strict, particularly given that there is no evidence in this thesis to suggest that dual earner childcare policies do any damage to women's careers. Thus, in the particular case of childcare services, it may be possible to provide policies that are generally beneficial for women's labour market outcomes. Nevertheless, the wider point remains mostly valid – the presence of contradictory effects on leave entitlements means that it may be necessary for countries to weigh up and balance the relative merits of using leaves to promote female economic activity against those of providing a labour market that best allows women to reach top positions.

It is worth highlighting here that certain results from across the thesis suggest countries may be able to maximise the benefits and minimise the 'costs' of leave programmes through the provision of certain types or combinations of entitlements. For example, a major finding from chapter **5** was that leaves with 'dual earner' characteristics appear particularly effective at encouraging equal participation. Results from chapters **6** and **7**, meanwhile, suggest that the damaging effects of leaves for mothers may be at least partially offset by the provision of father-specific entitlements. The rough inference then, is that countries may be able to provide a set of leaves that are mostly or at least *more* beneficial for women's labour market outcomes generally if provisions contain the right structures and designs, and if entitlements are offered on a basis that at least approaches some form of gender-balance. Yet, to some extent these are side issues – the major implication remains that certain policies appear to carry contradictory effects, and that it is important to recognise that provision may involve compromises and trade offs between the competing labour market interests of different women.

Importantly though, results from the thesis failed to provide support for the more recent argument that the contradictory effects of leave policies – as well as the benefits and 'costs' of wider dual earner provision, for that matter – are likely to be divided neatly and

[138] The social democratic countries, for example, prefer to provide policies that promote full female activity even at the expense of women's careers. Liberal-type states, in contrast, favour a gender-neutral approach that allows at least some women to reach top positions even if it does less to promote the position of most women (Mandel, 2009: 708-712).

clearly by levels of education. Indeed, chapter **7** produced only mixed support for theories around the class-conditioned effects of policy provision more generally (Shalev, 2008; Mandel and Shalev, 2009; Mandel, 2011; Mandel, 2012). For example, while Mandel and others appear broadly correct in their assertion that it is less educated women who stand to gain the most from dual earner leave and childcare provisions, certain policies – specifically, father-specific leave and public childcare services for slightly older children – seem to operate mostly to the benefit of women with high level qualifications. More notably perhaps, there was very little support in chapter **7** for the suggestion that any adverse effects attached to leave or indeed any other dual earner-type policies are particularly severe for highly educated women. Rather, the careers of these women appear largely safe from any harmful effects attached to policy provision.

This broad set of findings carries several implications. For instance, establishing that different dual earner policies seem to promote economic activity amongst different groups of women implies that countries may need to adopt a diversity of provisions if they wish to balance the benefits of family policies across groups. The apparent resistance of highly educated women to any adverse effects attached to leave policies, meanwhile, means that countries may provide entitlements for mothers at least without fear of damaging the careers of a demographic that – while comparatively privileged – has generally struggled the most to compete with similarly educated men for top positions (see chapter **7.2** and tables **C.30-C.35** in appendix **C** (pp. 371-376)). However, perhaps the most considerable implications here revolve around the fact that results suggest any family policy paradox does not seem to operate neatly along class lines. In other words, while changes in certain policies may indeed have contradictory effects on women's employment outcomes, there is little in this thesis to indicate that these contradictions produce some strict trade off between the labour market interests of women from separate demographic groups.

From a mostly academic perspective, the failure to find a clear inter-class trade off is important in as much as it implies that theories around the class-conditioned effects of family policy may need at least some modification. This is particularly so with regards to how any adverse effects attached to leave policies are structured by education, since findings here are clearly inconsistent with the expectation that it should be the careers of highly educated women that are most at risk (Shalev, 2008; Mandel and Shalev, 2009; Mandel, 2012). Results in this thesis are unfortunately unclear on which group or groups of women *are* subject to the adverse effects observed at the overall level, so any further theorisations are admittedly a little speculative. Nonetheless, the apparent immunity of highly educated women to the damaging effects of leave implies at least that whatever

mechanisms lie behind leave-drive trade off effects – statistical discrimination, for example – may not apply to or extend across all women equally. The cautious suggestion at the end of chapter **7** was that highly educated women may be relatively safe from the harmful effects of leave simply because they are less likely to make use of leave entitlements in the first place. As a result, women with high level qualifications may, on average, represent a comparatively small risk to employers looking for candidates for high-end positions. This was, however, very much a post-hoc explanation and was not hypothesised by the author prior to the production of results. There is certainly a need for further investigation into the ways in which any negative side-effects attached to leave policies interact with class, and indeed into how leave policies impact differently on women with different resources and socio-economic backgrounds more generally.

The absence here of a clear inter-class trade off also has more practical implications though, particularly in the extent to which it provides evidence against the argument that policy trade off effects may compromise the the political feasibility of extensive leave and childcare provisions. As touched on briefly in chapter **2**, theories around the class-conditioned effects of family policy at times stretch beyond simply describing the expected impact of policy across groups to argue that inter-class policy trade offs – and in particular the concentration of any 'costs' of dual earner policies on women with high education – are likely to damage political support for dual earner policies (see Shalev, 2008). More precisely, they suggest that because highly educated women are set to gain the least and lose the most from generous leave and childcare policies, they are also unlikely to lend political support to, and may even actively resist, any general shift towards extensive dual earner provision. Crucially, the severity of the issue is likely to be amplified by the fact that highly educated women tend to hold the largest political capital. The end result – so the argument goes – is that the labour market interests of highly educated women are likely to prevent or obstruct generous policy provision in all but the most solidaristic of states[139] (Shalev, 2008: 438-439).

Yet, results from chapter **7** suggest that neither leave nor childcare policies need cause any such political opposition amongst relatively privileged women, since there is no evidence of an inter-class trade off generally and no indication that dual earner policies do any harm to the careers of women with high level qualifications specifically. This is not to trivialise the possibility of trade off effects amongst other groups of women. Again, results

[139] Indeed, following a comparison of policy provision and gender outcomes between the United States and Sweden, Shalev goes as far as to suggest that '*class interests and gender politics stand in the way of moving the United States toward a radically different set of employment and family policies*' (2008: 439).

are unfortunately unclear on which groups are most vulnerable to the damaging effects of leave observed at the overall level, but the tentative suggestion at the end of chapter **7** was that it may be the careers of *less* educated women that are at most risk. If proven further, this would mean that any paradoxical effects of policy shift to become mostly 'intra-class' which may, of course, still lead to compromises and difficulties when looking to balance the varying labour market interests of different women. Nonetheless, the central point remains that any benefits from leave or other dual earner policies do not seem to come at the expense of the careers of an entire demographic – highly educated women – that otherwise stand to gain little from the provision. As a result, any trade off effects attached to family policies – particularly leave policies – need not necessarily compromise the political feasibility of extensive dual earner provision.

Elsewhere, results from across the various empirical chapters carry implications for general family support provisions in as much as they suggest that changes in these policies – including both flat-rate 'general family support' leave entitlements and family-related tax and transfer policies – seem to do little or no harm to gender differences in economic activity. Broad inferences with regards to flat-rate parental and childcare leaves are a little complicated of course, given that results from chapter **6** suggest leave policies in general may damage women's relative career attainment – thus, even if these leaves do not discourage female labour supply their provision appears to remain outright harmful to women's labour market interests. However, as far are family-related tax and transfer policies are concerned, the absence here of any damaging side effects on female market activity could and should be regarded as a positive.

As noted at various points earlier in the thesis, both child benefit and tax subsidies for the family are used in many countries as key measures against child poverty and are often central to state efforts to boost the incomes of households with children (Oxley et al, 1999; Pressman, 2011; Gornick and Jäntti, 2012). Thus, establishing that these policies do no harm to female activity should only reinforce the case for – or at least remove one potential obstacle against – their provision. Moreover, there was some suggestion in chapter **7** that changes in family-related tax subsidies may even actively *promote* equal participation amongst less educated men and women. This latter finding was unexpected theoretically and would certainly require further testing before being used to justify policy. However, if confirmed, it would perhaps even enhance the rationale behind the provision of financial support for the family, on the grounds that it may also help boost the incomes of households with less educated parents indirectly through labour market participation. In any case, the broader point remains that changes in family-related tax and

cash transfer policies seem to do no damage to female labour supply, and thus may be used to provide families with financial support without the risk of inflating gender gaps in market activity.

Findings from across the thesis also carry implications for the provision of public childcare services, particularly in the extent to which they underline the importance of public or publicly supported childcare for children aged less than three. More specifically, results from the various empirical chapters indicate that changes in provision for children under three may not only help reduce gender gaps in labour force participation rates – both generally and in particular amongst less educated men and women – but also and importantly carry no apparent side effects for gender job segregation or women's careers. Indeed, the suggestion from chapter **7** was that changes in childcare for the under threes may even promote equality in occupational attainment amongst individuals with either low or high levels of education. It is notable that changes in provision for slightly older children appear to have only limited effects on gender differences in employment, and more so that changes in public childcare spending seems to have no impact at all. Nonetheless, results consistently suggest that public services for children less than three may represent a particularly effective tool for the promotion of women's labour market interests.

It should be acknowledged that public childcare provisions are not cheap. Indeed, in 2010, public spending on early childhood education and care reached in the most generous countries – such as Denmark and Sweden – as high as 2% of GDP, or around 6.7% of total social expenditure (OECD, 2013d). It should also be emphasised here at the conclusion that the data used to measure childcare provision for children between zero and three is far from perfect – the indicator suffers from a high rate of missing data, and even where cases are complete the data are unlikely to fully capture public childcare provisions (see chapter **3.2**). Nonetheless, as far as the data do reflect state efforts to provide or support childcare services for very young children – and to the extent that countries are willing to fund extensive public childcare systems – the broad inference here is that supporting childcare services for the very young may be one of the most promising avenues for provision, not only with respect to female market participation but also for gender equality in employment more generally.

Finally, before closing, it is worth making a brief note on the effects of father-specific leave. As mentioned at several points across the thesis, father-specific leaves are generally understudied in the comparative family policy literature and in particular in 'over time'

comparative family policy research (see table **A.1** in appendix **A** (pp. 314-316)). Findings from this thesis, however, suggest that leaves reserved for fathers may have important and meaningful effects on gender difference in employment outcomes – specifically, results suggest that father-specific leaves may help close gender gaps in economic activity – albeit possibly only among highly educated men and women – and perhaps more importantly can help offset at least some part of the damaging effect of leaves for mothers on women's career attainment. Findings from one single study are of course hardly conclusive, and the impact of father-specific leave on gender differences in labour market outcomes certainly needs further investigation. However, these initial results suggest that leaves for fathers – which, as outlined in chapter **4**, are already becoming increasingly common and extensive across countries – may well represent an important policy tool for governments seeking to promote gender equality in employment outcomes.

8.5. Final reflections and conclusions

It was stated at the start of the thesis that understanding the effects of changes in family policy on gender differences in employment outcomes is central to identifying the best route towards a more efficient and equitable labour market. Motivated in large part by concerns around the validity of well-established cross-sectional associations and limitations in the scope of existing 'over time' research, the principle aim of this study was to provide an empirical investigation into the role played by changes in family policy in the development over time of gender gaps in various employment outcomes. The thesis faced its challenges, especially with regard to the availability of suitable and useful comparative data. Nonetheless, it was able to go at least some way towards addressing certain gaps and deficiencies in the comparative family policy literature, particularly around the lack of breadth in existing studies that examine links between within-country variation in policy and women's careers and the almost entire absence of research on the impact of changes in policy on outcomes at differing levels of education.

The primary empirical contribution of the thesis was to show that while changes in certain policies may indeed have contradictory or paradoxical effects on women's employment outcomes, any such paradox does not seem to operate neatly and clearly along class lines. Results indicate that dual earner leave and childcare policies promote equal market participation, while at the same time certain policies – specifically, leave entitlements for mothers – may inadvertently damage women's ability to reach top positions and high wages. Results also suggest that these effects may vary by levels of education. Yet, these variations were not always as the theory predicts. The effects of policy on economic

activity appear to operate primarily but not exclusively to the benefit of men and women with low levels of education, while any damaging effects attached to leave do not seem to apply to highly educated women. Thus, while the provision of family policy may still involve difficulties when looking to balance the concerns of different women, it does not appear the case that policies produce some form of strict trade off between the separate interests of women from different socio-economic groups. Put simply, certain family policies may well have paradoxical effects on female employment outcomes, but the benefits do not appear to accrue *only* to less educated women while the costs do not appear to fall only – or, indeed, at all – on their highly educated counterparts.

In some ways, these findings open up as many avenues for research as they close. For instance, establishing that at least some family policies have contradictory effects on gender differences in employment outcomes raises other questions around how countries may structure provisions so as to maximise the benefits and minimise the damaging 'costs' of policy provision. As touched on in the section above, there was some indication in this thesis that leaves with 'dual earner' characteristics may be particularly effective at promoting equal participation, and also that father-specific leaves may help offset at least some of the damaging effects attached to leave entitlements for mothers. More importantly, perhaps, there was also consistent evidence to suggest that public childcare services for children under three may encourage female activity seemingly without any adverse effects on women's careers. Both sets of findings are encouraging and offer clues as to how countries may mitigate or avoid policy trade offs, but most are fairly novel and all need further verification before being used to inform policy. There certainly remains a need for future family policy research to consider not only whether or not policies have paradoxical effects, but also how and in what way countries can construct a set of policies that best promotes gender equality in employment while also causing the minimum of harm to women's occupational attainment.

There is undoubtedly also a demand for further investigation into the impact of changes in family policy on employment outcomes across levels of education. Findings from this thesis suggest that there may be important differences in the ways in which policies affect the outcomes of individuals with different levels of education, but results from one study are of course hardly decisive. This is particularly the case with regard to how the damaging effects of leave policies on women's careers are structured by education. As noted above, results here indicate that changes in leave policies have no detrimental effects *at all* on highly educated women's ability to reach managerial positions and high wages. However, this raises at least a couple of further questions around the ways in

which leave-driven trade off effects interact with education.

Firstly, the apparent immunity of highly educated women to the adverse effects of leave policies remains at least slightly curious in itself, given both the expectations of the theory (Shalev, 2008; Mandel and Shalev, 2009; Mandel, 2012) and that positions at the top end of the labour market are generally dominated by individuals with high level qualifications. The cautious suggestion earlier was that highly educated women may escape any damaging effects mostly because they are less likely to make use of leave entitlements in the first place, but it should be emphasised that this was post-hoc reasoning only. There is certainly a need for further theoretical and empirical research into the ways in which leave policies do or do not impact on the careers of highly educated women, and particularly for investigation into how or why women with high level qualifications appear largely safe from any adverse effects attached to leave policies.

Secondly, if highly educated women are not subject to the damaging effects of leave, then the question remains which group or groups of women are vulnerable to the effects seen at the overall level? As discussed earlier, answers in this thesis are unfortunately unclear – there was a hint in chapter **7** that it may be women with low education that are most at risk from leave-driven trade off effects but, given the lack of statistical significance on the association, evidence there was far from conclusive. There is then a need for further investigation into links between leave and women's occupational attainment across levels of education generally. However, the prospect that it may be less educated women that are particularly susceptible to any adverse effects – and, by implication, the possibility of a policy paradox with both sides concentrated mostly on women with lower levels of education – may warrant particular attention from future research.

Lastly, in broader terms, results from across the thesis highlight a general need for future comparative family policy research to both consider relations between changes in policy and outcomes over time, and to take into account possible differences in associations across various socio-economic and demographic groups. As noted earlier, meeting these twin requirements is difficult at present due primarily to limitations on country-level data and constraints on the availability of repeated cross-section micro data. However, as and when suitable data become available, family policy research may wish to explore further how changes in policy impact differentially on men and women with varying characteristics.

As a final point, it should not be forgotten that the broad message from the thesis in terms

of trends and developments in gender equality is largely positive. Although women's economic activity and attainment continues to lag behind that of their male counterparts on all indicators used, the trend across countries and areas of equality is for falling gender differences in outcomes with decreases that are in many cases substantial. This is particularly true for equality in labour participation – especially amongst less educated men and women – but also and importantly broadly the case across measures of segregation and occupational attainment. While the role of family policy in these developments appears fairly messy and contradictory, these broad trends provide at least some cause for optimism even if – and this should be stressed – male and female labour market outcomes remain unequal across all countries examined.

Appendix A. Summary of methodological and empirical aspects of twenty key comparative family policy studies

Table A.1. Summary of methodological and empirical aspects of twenty key comparative family policy studies

Author(s) (Year)	Across countries and/or across time	Country sample	Year(s) sampled	Family policies covered	Family policy data sources or dataset	Labour market outcomes covered	Labour market data sources or dataset	Method of analysis	Key findings
Winegarden and Bracy (1995)	Across countries and across time	17 OECD countries	1959-1989 (at 10 year intervals)	Weeks and wage replacement rate of maternity leave.	Various, primarily: United States Department of Health and Human Services, Social Security Programs Throughout the World	Female labour force participation rate (20-34 year olds)	OECD Labour Force Statistics; ILO Labour Statistics	Pooled time-series cross-section: fixed effects OLS regression	Extending maternity leave increases female labour force participation. Changes to the wage replacement rate during maternity leave are not significantly associated with female labour force participation.
Gornick, Meyers and Ross (1998)	Across countries	14 OECD countries	Circa 1985	Policies that support employment for mothers with children under three: Presence, coverage, weeks and wage replacement rate of maternity leave; Presence of paternity leave; coverage and enrolment in childcare, and tax relief for childcare, for those under three. Policies that support employment for mothers with preschool-aged children: coverage, enrolment and tax relief for children between three and school age.	Gornick, Meyers and Ross (1997) Family Policy Database	Female employment rates (15-64 yer olds); motherhood employment gap (15-64 year olds)	Luxembourg Income Study (LIS) Micro-data	Logistic multivariate regression	*Policies that support employment for mothers with children under three* reduce the motherhood employment penalty for mothers with children under three; *Policies that support employment for mothers with preschool-age children* reduce the motherhood employment penalty for mothers with children age 3-5
Ruhm (1998)	Across countries and across time	9 Western European countries	1969-1993	Weeks and wage replacement rate of parental leave.	International Labour Organization (ILO) Legislative Series; United States Social Security Administation Social Security Programs Throughout the World	Gender gap in the employment rate (15-49 year olds; 25-34 year olds); gender gap in hourly manufacturing wages (all ages)	OECD Labour Force Statistics; ILO Labour Statistics	Pooled time series cross section: fixed effects weighted least squares regression	Short periods of paid parental leave promote female employment rates with little effect on female wages. Longer periods of leave continue to promote female employment rates, but decrease female hourly earnings.
Jaumotte (2003)	Across countries and across time	17 OECD countries	1985-1999	Weeks of leave available to mothers; Public expenditure on childcare; Level of child benefits; Tax penalties on second earners.	Various, primarily: OECD Taxing Wages; OECD Jobs Study; OECD Social Expenditure Database; OECD Education Database; Gauthier and Bortnik (2001) Comparative Maternity, Parental, and Childcare Database	Female labour force participation rate (25-54 year olds)	OECD Labour Market Statistics	Pooled time series cross-section: fixed effects two-stage least squares regression	Public expenditure on childcare and paid parental leaves promote female labour force participation. Tax penalties on second earners decrease female participation, and the level of child benefit decreases women's part-time employment.
Mandel and Semyonov (2005)	Across countries	20 OECD countries	Circa 1991-2000	Welfare State Intervention Index (WSII): Weeks and wage replacement rate of maternity leave; Enrolement of pre-school children in public childcare; Size of public social service sector.	Various: unobtainable	Gender gap in annual earnings (25-60 year olds)	Luxembourg Income Study (LIS) Micro-data	Multilevel linear regression	After accounting for cross-national differences in wage structures, the WSII is negatively but insignificantly associated with the gender pay gap. Weeks of maternity leave increase the gender pay gap. Childcare and size of the social service sector share no relation with the gender pay gap.
Pettit and Hook (2005)	Across countries	19 OECD and Eastern European countries	Circa 1995	Weeks of maternity leave; Weeks of parental leave; Enrolment in public childcare for those aged under three	Various, primarily: Gauthier and Bortnik (2001) Comparative Maternity, Parental, and Childcare Database; Gornick, Meyers and Ross (1997) Family Policy Database	Female employment (18-65 year olds)	Luxembourg Income Study (LIS) Micro-data	Multilevel linear regression	Shorter parental leaves increase employment for women with children under six, but longer parental leaves decrease the probability that a mother with children under six is employed. Publicly provided childcare promotes employment for women who are married or who have children under six.
Ferrarini (2006)	Across countries and across time	18 OECD countries	1970-2000	Dual Earner Policy: Weeks and wage replacement rate of maternity leave; Weeks and wage replacement rate of paternity leave; Weeks and wage replacement rate of earnings-related parental leave. General Family Support: Weeks of flat-rate parental leave; Level of child benefits; Level of lump-sum maternity grants	Social Citizenship Indicator Programme (SCIP) Database.	Female labour force participation rate (20-44 year olds)	OECD Labour Force Statistics; ILO Labour Statistics	Pooled time-series cross-section: fixed effects OLS regression	*Dual earner* policies promote female labour force participation. *General family support* policies are negatively but not significantly related to female labour force particpation.
Mandel and Semyonov (2006)	Across countries	22 OECD and Eastern European countries	Middle-to-late-1990's	Welfare State Intervention Index (WSII): Weeks and wage replacement rate of maternity leave; Enrolement of pre-school children in public childcare; Size of public social service sector.	Various: unobtainable	Gender differences in odds of labour force participation; in odds of employment in a managerial position; in odds of employment in a 'lucractive' managerial position; and in odds of employment in a 'female-type' occupation (all 25-60 year olds)	Luxembourg Income Study (LIS) Micro-data	Multilevel logistic regression	The WSII measure is positively associated with female labour force participation, but negatively associated with women's access to mangerial positions and positively related to the concentration of female employees in 'female-type' jobs.

Table A.1 (cont'd.). Summary of methodological and empirical aspects of twenty key comparative family policy studies

Author(s) (Year)	Across countries and/or across time	Country sample	Year(s) sampled	Family policies covered	Family policy data sources or dataset	Labour market outcomes covered	Labour market data sources or dataset	Method of analysis	Key findings
Misra, Budig and Boeckman (2008)	Across countries	18 OECD and Eastern European countries	Circa 1995/2000	Weeks and wage replacement rate of maternity leave; Weeks and wage replacement rate of parental leave; Weeks and wage replacement rate of paternity leave; Enrolment in public childcare for children under three; Enrolment in public childcare for children between three and five.	Boeckman, Budig and Misra (2012) Work-Family Policy Indicators	Motherhood wage gap (25-49 year olds)	Luxembourg Income Study (LIS) Micro-data	Two-stage Heckman estimation models	Maternity, parental and paternity leave all decrease the motherhood wage penalty, although the effects of parental leave weeks are curvilinear in that they inflate the wage penalty when very long or very short. Public childcare for under threes decreases the motherhood wage penality, while public childcare for three to five year olds shares no significant relation with the motherhood wage penalty.
Tranby (2010)	Across countries and across time	14 OECD countries	1960-2008	Presence, weeks and wage replacement rate of maternity leave; Presence and weeks of parental leave; Presence of paternity benefits; Weeks of and presence of paid childcare leave; Public expenditure on leave policies; Entitlment to and enrolment in public childcare for children under three; Entitlment to and enrolment in public childcare for children between three and school age; Public expenditure on childcare; Presence of tax relief for childcare; Public expenditure on family allowances.	Author's own from numerous sources	Female labour force participation rates (15-64; 15-24; 25-34; 35-44; 45-54 year olds); female part-time employment rates; female share of part-time employment; female involuntary part-time employment; gender pay gap; occupational segregation (all all ages).	Various, primarily: OECD Labour Force Statistics; ILO Labour Statistics	Pooled time-series cross-section: random coefficients models	Parental leaves and public childcare provision increase labour force participation amongst young women. Public childcare provision also decreases women's concentration in part-time employment and in involuntary part-time employment, and reduces the gender pay gap. Parental leaves and public childcare share no significant relationship with occupational segregation. Family allowances and benefits reduce labour force participation amongst young women and, importantly, increase occupational segregation.
Mandel (2011)	Across countries	15 OECD countries	2007	Weeks of maternity and parental leave; Provision of childcare for children under three; Proportion employed in the service sector; Proportion employed in the public sector; public expenditure on family services; public expenditure on family cash transfers; public expenditure on family tax measures.	Various, primarily: OECD Family Database; OECD Employment Outlook; Hausmann et al (2009) The Global Gender Gap Report	Employment rate among mothers (all ages); labour force participation rates (all ages); employment rate among single mothers (all ages); women's representation in mangerial occupations (all ages); women's representation in top wage quintile (25-64 year olds); women's representation in supervisory positions (all ages)	Various, primarily: Luxembourg Income Study (LIS) Micro-data; International Social Survey Programme	Exploratory factor analysis and descriptive statistics	The effects of family policies vary by class position. Those countries that provide extensive family policies promote equality among disadvantaged groups but hold greater inequalities amongst advantaged groups. The opposite is true for countries with relatively ungenerous sets of family policy.
Mischke (2011)	Across countries	EU15	2005	Dual Earner Support:Weeks and wage replacement rate of maternity leave; Weeks and wage replacement rate of paternity leave; Weeks and wage replacement rate of earnings-related parental leave; Coverage of public childcare for children under three. General Family Support:Weeks and wage replacement of flat-rate parental and childcare leaves; Coverage of public childcare for children aged three to school age; Public expenditure on child and family benefits; Tax savings for families	Various, primarily: Moss and O'Brien (2006) International Review of Parental Leave Policies and Related Research; Eurostat; OECD Benefits and Wages	Female labour force participation rates (all ages)	Eurostat Labour Market Statistics; Moss and O'Brien (2006) International Review of Parental Leave Policies and Related Research	Descriptive statistics	Countries with greater levels of *dual earner support* policy also tend to have higher female labour force participation rates.
Akgunduz and Plantenga (2012)	Across countries and across time	16 European countries	1970-2010	Total weeks of paid leave available to mothers (weighted by the appropriate replacement rate).	Various, primarily: Gauthier and Bortnik (2001) Comparative Maternity, Parental, and Childcare Database	Gender gaps in the employment rate (15-64; 25-34 year olds), in weekly working hours (25-54 year olds), in hourly manufacturing wages (all ages), in wages for 'financial intermediaries' (all ages); and the female share of employment in high-level occupations (all ages)	OECD Labour Force Statistics; ILO Labour Statistics; Eurostat Labour Market Statistics	Pooled time series cross section: fixed effects OLS and weighted least squares regressions	The length of leave available to mothers shares a curvilinear relation with female employment rates and weekly working hours. Short periods of leave promote female activity but the effect diminishes past a certain length. The length of leave is unrelated to female manufacturing wages. However, the length of leave is negatively related to female wages in 'financial intermediation' and to the share of women in high-level occupations.
Mandel (2012)	Across countries	21 OECD and Eastern European countries	Circa 1995/2000	Welfare State Intervention Index (WSII): Weeks and wage replacement rate of maternity leave; Enrolement of pre-school children in public childcare; Size of public social service sector.	Various: unobtainable	Standardized gender pay gap, by levels of education (25-60 year olds)	Luxembourg Income Study (LIS) Micro-data	Multilevel linear regression	The WSII increases earnings inequalities amongst highly educated men and women but has no effect on those with low education. Leave entitlements increase earnings inequalities amongst both groups, but with an effect that is far larger for men and women with high education. Childcare has no effect at either level of education. Public welfare employment increases earnings inequalities amongst highly educated men and women but has no effect on those with low education.

Table A.1 (cont'd.). Summary of methodological and empirical aspects of twenty key comparative family policy studies

Author(s) (Year)	Across countries and/or across time	Country sample	Year(s) sampled	Family policies covered	Family policy data sources or dataset	Labour market outcomes covered	Labour market data sources or dataset	Method of analysis	Key findings
Misra, Budig and Boeckman (2012)	Across countries	21 OECD and Eastern European countries	Circa 2000	Weeks of maternity leave; weeks of parental leave; Enrolment in public childcare for children under three; Enrolment in public childcare for children between three and six.	Boeckman, Budig and Misra (2012) Work-Family Policy Indicators	Female employment hours (25-54 year olds); female annual wages (25-54 year olds)	Luxembourg Income Study (LIS) Micro-data	Two-stage Heckman estimation models	Weeks of maternity leave promote women's working hours and earnings, while weeks of parental leave have curvilinear effects on both. Public provsion of childcare for under threes promotes both hours and earnings, while public provision of childcare for three to six year olds is neutral.
Nieuwenhuis, Need and van der Kolk (2012)	Across countries and across time	18 OECD countries	1975-1999	Weeks and wage replacement rate of maternity leave; Weeks of childcare leave; Level of family allowances; Level of tax relief for families.	Gauthier and Bortnik (2001) Comparative Maternity, Parental, and Childcare Database; Gauthier (2003) Comparative Benefits Database	Female employment status (20-50 year olds)	Eurobarometer Micro-data	Multilevel logistic regression	Weeks and higher wage replacement rates for maternity leave and weeks of childcare leave promote female employment. .Weeks of maternity leave have a negative effect on the employment of non-mothers. Family allowances reduce the employment of mothers, and family tax benefits reduce the employment of all women.
Korpi, Ferrarini and Englund (2013)	Across countries	15 OECD countries	2000	Dual Earner Carer Policy: Weeks and wage replacement rate of earnings-related parental leave; Weeks of paternity leave; Enrolment in public childcare for children under three; Enrolment in full-time public children for children between three and school age. Traditional Family Support: Level of child benefit; Enrolment in part-time childcare for children aged three to school age; Weeks of childcare leave; Marriage subsidies.	Various, primarily: Social Citizenship Indicator Programme (SCIP) Database; European Union Eurydice Database; Gornick and Meyers (2003) Comparative Family Benefits Database	Female employment status, by education level (25-54 year olds); Women's representation in top earnings quintile (25-54 year olds), by education level.	Luxembourg Income Study (LIS) Micro-data	Multilevel logistic regression	*Dual earner carer* policies promote female employment at all levels of education, but with the coefficient slightly larger for those with low and medium education.*Traditional family support* policy is negatively but mostly insignificantly related to female employment at all levels of education. Both policy measures decrease the probability of highly educated women reaching top quintile wages. However, after controlling for socio-economic selectivity in women's employment, major differences in women's chances of finding top quintile earnings cannot be found.
Thévenon (2013)	Across countries and across time	18 OECD countries	1980-2007	Public expenditure on family benefits; Public expenditure on childcare services; Public expenditure on leave and birth grants; Weeks of paid leave; Service coverage for children under age 3; Relative tax rate of second earner; Financial incentive to work part-time	OECD Family Database	Female labour force participation rate (25-54 year olds); female full-time employment (25-54 year olds); female part-time employment (25-54 year olds).	OECD Labour Force Statistics	Pooled time-series cross-section: fixed effects OLS regression	Public expenditure on leaves increases female full-time employment relative to part-time employment; Childcare enrolment rates are positively associated with both full-time and part-time employment rates; Increased relative tax rates on second earners reduce female labour force participation; women are more likely to work part-time when two-earner households are taxed less than one-earner households on an equivalent income; Public expenditure on family cash benefits is unrelated to female employment
Thévenon and Solaz (2013)	Across countries and across time	30 OECD countries	1970-2010	Total weeks of paid leave available to mothers.	OECD Family Database	Gender difference in employment rates (25-54 year olds); in average working hours (25-54 year olds); and in hourly wage rates (all ages).	OECD Labour Force Statistics; OECD Earnings Database	Pooled time-series cross-section: fixed effects OLS regression	Relatively short periods of paid leave reduce the gender employment gap, while longer periods (beyound two years) have the opposite effect. All leaves contribute to a widening of the gender pay gap.
Niuwenhuis (2014)	Across countries and across time	17 OECD countries	1980-1999	Weeks and wage replacement rate of paid leave for mothers; Level of family allowances expenditure.	Gauthier and Bortnik (2001) Comparative Maternity, Parental, and Childcare Database; Gauthier (2003) Comparative Family Benefits Database	Motherhood employment gap, by education level (20-50 year olds).	Eurobarometer Micro-data	Multilevel logistic regression	Longer periods of paid leave reduce the motherhood employment gap at all levels of education, but have a stronger effect on mothers with high education.

Appendix B. Methodological appendix to chapter 3

Chapter **3** outlined the data, methods and techniques used in the thesis in some detail. However, a number of aspects require a little further discussion and clarification. This appendix expands upon and justifies several features of the thesis' research strategy. Section **B.1** discusses the thesis' use of a large-N quantitative comparative approach. **B.2** outlines and adds detail to the techniques used to construct the thesis' three composite family policy indices. **B.3** clarifies how the thesis deals with missing data, while **B.4** discusses the various issues and complications involved with using regression techniques to analyse time-series cross-section data, and justifies the techniques used in the thesis to deal with these complications.

B.1. Large-N quantitative comparative approach

As touched on at the start of chapter **3**, the general research strategy used in this thesis could be classified as 'large-N' quantitative comparative, in that the thesis looks to understand links between changes in policy and employment outcomes through the analysis of quantitative data drawn from a relatively large number of countries (20) and fairly large number of years (26). Comparative methods are, of course, popular in social policy research and indeed in social research more widely. Although to some degree all social research is comparative (Kennet, 2001: 41), explicit comparative designs look to use contextual, temporal or spatial variation as controlling factors and to employ the 'logic of comparison' in order to approximate some form of quasi-experiment (Lijphart, 1971), with the end goal of isolating empirical relationship that are disassociated from a given and specific situation (Pennings et al, 1999: 24; Hantrais, 2009: 6, 10). In this case, the thesis looks to draw on similarities and differences in the experience of a number of countries in order to identify some general influence of family policy on employment outcomes. Of course, it is by no means impossible to explore the effects of family policy within a given country[140]. However, at times single country studies struggle to isolate the direct effects of family policies from the many other context-specific determinants of gender differences in employment outcomes. Using and comparing the experiences of multiple countries allows for delineation of whether the two share an association away

[140] Indeed, a number of extremely valuable studies explore the influence of policy and changes in policy within a single country (e.g. Baum, 1993; Joesch, 1997; Waldfogel, 1999; Waldfogel et al, 1998; Bainbridge et al, 2003; Naz, 2003; Zveglich and van der Meulen Rodgers, 2003; Schönberg and Lusteck, 2007; Baker and Milligan, 2008; Lefebvre and Merrigan, 2008; Lundin, Mörk and Öckert, 2008; Hanratty & Trzcinski, 2009; Havnes and Magstad, 2009)

from a given specific setting.

There is, of course, no one particular comparative method. Generally, strategies in comparative social research tend to be separated into two main types – small-N case-oriented studies, and large-N variable-oriented studies[141] (Landman, 2000: 49). The former case-oriented approach takes countries themselves as the primary units of analysis and seeks to understand the complex causes of specific and diverse outcomes within the defined countries. To do so, case-oriented studies examine countries in depth and detail, often through qualitative methods that generate rich data and perhaps in combination with quantitative information. The focus of investigation typically leans towards a deep understanding of the similarities and differences between countries, which aids identification of shared – or not – characteristics that account for a given or a differential outcome (Landman, 2000: 27). However, the emphasis on a small number of countries also means that small-N studies are generally more susceptible to selection and omitted variable bias (King et al, 1994).

In contrast, the large-N, variable-oriented approach focuses mostly on understanding associations between variables as they exist across countries. In other words, it pays less attention to the countries within which the variables are embedded, and instead looks to identify 'law-like' relationships that hold across a number of cases (Hantrais, 2009: 32). In order to establish robust 'law-like' relations, the variable-oriented approach requires a relatively large number of cases. As a result, this approach tends to be dominated by quantitative data and statistical methods that are capable of synthesising and analysing large quantities of information (Landman, 2000: 24).

Large-N quantitative comparative research strategies carry a number of benefits. Not least, the use of statistical methods can, if applied correctly, reduce the dangers of omitted variable bias and spurious relations, and provides a greater level of statistical control. The ability to analyse a large number of cases, meanwhile, allows for more comprehensive inferences that suffer less from selection bias (Landman, 2000: 24, 49).

That said, large-N comparative methods also carry several complications and drawbacks. An issue that is general to all comparative research but amplified in large-N studies, is that of establishing equivalence of concepts and measures across countries (Landman, 2000:

[141] Single country case studies can also be considered as comparative if they operate within a comparative framework and are conscious of the specific context within which the case study is embedded (Hantrais, 2009: 32).

38). This point is particularly relevant here, since even similar types of family policies are often diverse in practice across countries – for example, eligibility criteria for similar leave policies differ between countries in numerous ways. Likewise the definitions used for measuring aspects of employment often differ cross-nationally. One method for overcoming the equivalence problem is to increase the level of abstraction in concepts and measures (Landman, 2000: 49). This thesis follows the literature in using more general and transferable measures of policy and employment than might be used in a single country or small-N study – for example, to overcome issues of comparability, leave policies are captured in this thesis through the transferable concepts of 'weeks of entitlement' and the 'wage replacement rate across the leave'. However, the use of more general and comparable measures of policy also comes at a cost. It often means sacrificing many of the idiosyncratic features of country policy that may influence employment outcomes[142], and at time reduces the real-world meaning of empirical results. As a result, any findings from this thesis and indeed most other large-N studies generally represent stylised pointers only, rather than specific recommendations on exact policy design.

A second main drawback of large-N comparative research is that – in part due to the above – suitable quantitative data are often restricted in availability (Landman, 2000: 25). In order to minimise problems of equivalence it is necessary to use comparable data that have been designed or adjusted to be fully transferable across countries. However, for both employment and family policy such comparable data is relatively scarce, especially when also looking to extend relations across time. As discussed in detail in sections **3.2** and **3.3**, this places some restriction on the aspects of both family policy and employment that it is possible to examine within the thesis.

Lastly, the methods of analysis typically associated with large-N comparative research – in particular, multiple regression – have been criticized for reducing complex comparative relations into single estimates of associations that ignore much of the valuable wider information on country cases (Shalev, 2007a). In other words, in the search for 'law-like' relations across cases, quantitative large-N studies often transform information-rich cases into simple observations that fit neatly into defined variables and precise relations, and as a result remove data from its real world context and sacrifice much of the value of comparative analysis. This particular criticism was discussed and addressed in depth earlier in section **3.4**.

[142] To use leave policies as the example once again, using only weeks of entitlement and wage replacement rates to capture the policy means the effects of eligibility conditions, for example, on incentives for mothers to engage in employment prior to motherhood, or on the proportion of new mothers who are able to take maternity leave, are ignored.

These drawbacks are not insubstantial, and of course limit the results produced by this thesis. However, the large-N quantitative comparative approach remains the most appropriate comparative strategy for answering the thesis' three research questions. In particular, as the thesis explicitly looks to examine the impact of *changes* in policy, it is necessary to use methods that are able to handle large amounts of data and to control for alternative influences on developments in gender differences in employment. Accordingly, and following much of the existing comparative family policy literature, this thesis examines relations between changes in policy and outcomes using quantitative measures drawn from number of countries and time points and statistical techniques – primarily, multiple linear regression – that are capable of providing at least some level of statistical control.

B.2. Construction of the three composite family policy indices

As stated in chapter **3**, the thesis uses its nine main measures of family policy both as individual indicators in their own right, and as components in one of three policy indices that reflect and summarise the general level of provision of dual earner-carer leave policy, dual earner childcare policy, and general family support policy, respectively. It is not uncommon for indices to be used to measure family policy – Gornick et al (1998), Mandel and Semyonov (2005), Mandel and Semyonov (2006), Tranby (2010), and Korpi et al (2013), amongst others, all use indices to capture family policies within their studies. However, producing policy indices can be fairly complicated, and construction requires a number of decisions and considerations. Aside from judgments around data and indicators, the various measures used need to be normalised in order to ensure comparability, weighted to reflect importance to the overall composite, and lastly 'aggregated' or compiled into the final index (Nardo et al, 2005). This thesis' approach to normalisation, weighting and aggregated was summarised briefly in **3.2**, but all three warrant a little further elaboration. The following outlines various issues, discusses alternatives, and justifies the final decisions made during the construction of the three family policy indices.

Normalisation

As a first stage of index construction, the various indicators chosen to capture the three areas of family policy need to be normalised or transformed onto a common scale. This is necessary because the indicators often differ in their units of measurement, so aggregating

in raw form would lead to composites that are difficult if not impossible to interpret and that are dominated by those indicators measured on the largest scale. The normalisation process can also be used to minimise between-indicator differences in distributional characteristics, and in particular between-indicator differences in variances. Where variances differ between indicators, those with the larger variance are inadvertently weighted strongest in the overall composite while the influence of those with smaller variance is compressed (Plantenga et al, 2003: 55; Paroulo et al, 2013: 612). Thus, minimising differences between indicators is necessary in order to avoid or at least reduce any unwarranted weighting of indicators in the final index.

There are a number of methods that can be used to normalise indicators (Nardo et al, 2005: 17-19). These techniques range from the very simple – such as ranking, which is rejected here as it retains only ordinal information and leads to vast reductions in detail – to more complex methods such as categorical scales, which is considered unsuitable here because categorical scales are not well suited to showing change over time (Nardo et al, 2005: 18). A particularly popular method is min-max re-scaling (Nardo et al, 2005: 18), which transforms variables on to a common scale that varies between 0 and 1 by subtracting the minimum possible value from the actual value, and then dividing by the possible range. This technique has been used by Gornick et al (1998), Tranby (2010) Mischke (2011), amongst others, in their family policy indices. However, it is rejected here because for at least some of the family policy indicators it is not clear where or at what values the range should be set, and also because in itself min-max re-scaling does nothing to reduce unequal variances between the indicators (Paruolo et al, 2013: 617).

The method finally chosen here - Z-score standardisation - is an equally popular alternative. Z-score standardisation transforms indicators so that they hold a standard normal distribution, that is, so that all indicators are expressed on a common scale with a mean of zero and a standard deviation of one (Jacobs et al, 2004: 37). Normalised indicator scores are thus expressed relative to the mean in units of standard deviations, and importantly hold identical (unit) variances. For a given indicator in a given year, this transformation can be expressed algebraically as:

$$NX_{ji}^{t} = \frac{X_{ji}^{t} - E(X_{i}^{t})}{\sigma(X_{i}^{t})}$$

Where NX_{ji}^{t} is the normalised value for country $_{j}$ on indicator $_{i}$ at time $_{t}$, X_{ji}^{t} is the raw

value for country $_j$ on indicator $_i$ at time $_t$, and $E(X_i^t)$ and $\sigma(X_i^t)$ are the mean and standard deviation of indicator $_i$ in year $_t$.

To ensure comparability across years it is necessary that the mean and standard deviation used in the calculation are held constant over each time point. Nardo et al (2005: 60) recommend using the mean and standard deviation from a base year – usually the first year in the series – so that if desired it is possible to integrate data from additional years without changing the inital normalised scores. However, the use of a base year can be problematic if the variance on a given indicator is exceptionally low or high in the base year relative to the rest of the series – as the standard deviation used to standardise scores across the remainder of the series will also be relatively small or large, subsequent variations in standardised scores on that indicator will be inflated or compressed, respectively. This distortion can cause the post-standardisation variance on a given indicator to differ substantially from the other standardised indicators over the remainder of the series, possibly to the extent that between-indicator differences in variances are greater after base year standardisation than before[143].

To avoid this problem, this thesis' three policy indices use the mean and standard deviation for the entire series – that is, the mean and standard deviation of each indicator across all countries and all years in the sample – for standardisation . This ensures that each indicator has identical (unit) variances over the series as a whole. Under this transformation, normalised indicator values are relative to the overall mean indicator score and are expressed in units of the overall standard deviation, which can be represented by:

$$NX_{ji}^t = \frac{X_{ji}^t - E(X_i)}{\sigma(X_i)}$$

Where $E(X_i)$ and $\sigma(X_i)$ are the mean and standard deviation of indicator $_i$ across all time periods. Scores can then be interpreted as differences in standard deviations from the overall mean for a given country in a given year on a given indicator.

It is worth pointing out that Z-score standardisation does suffer from a couple of

[143] In the current dataset this particularly problem occurs with Indicator 2 - Father-specific leave, in effective weeks. As paternity leaves and father-specific leaves were almost entirely absent in 1985 (fourteen of the countries included offered no paid father-specific leave in 1985, and only two offered over one week) but developed to varying extents across countries over the series, the standard deviation for Ind.2 is exceptionally low in 1985 compared to much of the rest of the series.

limitations. The standardised values are relative to other observed scores in the sample rather than some substantive benchmark, so the final index values lose much of their 'real-world' meaning. Use of the mean also implies that standardised values may be susceptible to distortions by extreme outliers (Jacobs et al, 2004: 37). However, these drawbacks are considered less severe than those suffered by alternative techniques.

Weighting

Following normalisation but prior to aggregation, it may be desirable to weight the individual indicators to reflect their importance to the overall policy area under consideration (Nardo et al, 2005:21). In existing family policy indices, theoretical weighting has been used by Korpi et al (2013) – who assign weights of 0.5 to their childcare leave and marriage subsidy indicators within their general family support index because they effect only some families – and Gornick et al (1998) – who weight various maternity leave indicators by 0.5 to reflect their limited length, and paternity leave indicators by 0.5 to reflect their indirect effect of female employment. Mandel and Semyonov (2005; 2006) also implicitly use weights, since their family policy indices are constructed using the factor loadings produced by factor analysis.

Weights do, though, imply strong value judgments about the theoretical contribution of various indicators to the composite under consideration, and should only be used with strong justifications. In the current case, neither Korpi's (2000) theoretical conception nor comparative family policy theory in general are considered detailed or developed enough to provide a strong basis for applying differential weights to the indicators. It is not clear, for example, whether mother-specific leave is a more or less important component of a country's set of dual earner-carer leave than father-specific leave or earnings-related parental leave. Likewise, and unlike Korpi et al (2013), this author is not comfortable with the suggestion that flat-rate parental and childcare leaves are a less central or influential component of general family support policy than child benefits, for example.

As a result, the three family policy indices used in this thesis do not apply weights to the individual indicators prior to aggregation. It is recognised, though, that an absence of weights implies equal weighting and, thus, that each of the indicators are considered as being of 'equal' importance to the underlying family policy type (Nardo et al, 2005: 21). This is, of course, a value judgment in itself, and it is acknowledged that there is also no strong reason to believe that all aspects of the three family policy types are of equal value.

However this is considered a more conservative and transparent approach than applying weights in an ad-hoc manner without strong justification.

Aggregation

Finally, following normalisation and weighting the various individual indicators need to be combined or aggregated into their respective composite family policy indices. Again, there are a number of methods that can be used for aggregation of indicators into their final composites (Nardo et al, 2005: 22). These include the surface measure of overall performance (SMOP) technique – which is attractive primarily because it produces intuitive and useful graphical visualisations of the data through the radar charts, but is rejected here because there is simply not enough space to present the charts – and the multi-criteria approach (MCA), which is considered unsuitable for reasons explained a little later on. The method finally chosen here for this thesis' three policy indices is straightforward linear aggregation – that is, the simple arithmetic mean of each index's normalised sub-indicators. The formula for this calculation can be given by:

$$CI_j^t = (1/n) \sum_{i=1}^{n} NX_{ji}^t$$

Where CI_j^t is the composite indicator score for country $_j$ and time $_t$, n is the number of indicators included in that composite indicator and NX_{ji}^t is the normalised value for country $_j$ at time $_t$ on indicator $_i$.

As ever, though, linear aggregation does carry drawbacks. In particular, linear aggregation implies complete compensability across indicators – in other words, a high score on one sub-indicator can entirely offset an equally low score on another sub-indicator, or vice versa (Nardo et al, 2005: 22). It is not clear from the theory whether compensability is appropriate for the three composite family policy indices. Should, for example, the presence of a long mother-specific leave be able to compensate for the absence of father-specific leave? On the other hand, should not high public expenditure on childcare services be able to compensate for low public service provision, given that states may choose to assist parents through demand-side cost subsidisation rather than direct provision?

Compensability can be avoided by using the Condercet multi-criteria approach (MCA) as touched on above. However, to do so the MCA transforms all indicators (or criteria) into

ordinal variables with countries ranked according to their relative performance across measures (Nardo et al, 2005: 22). Thus, the Condercet MCA is considered unsuitable for the composite family policy indices produced here due to the desire to retain detail in the data. Geometric aggregation – the *n*th root of the product of the indicators – can also be used to produce partial-compensability: since the geometric mean places greater weight on changes in low absolute values than in high absolute values, a given country would need an extremely high score on one indicator to compensate for a low score on another indicator (Nardo et al, 2005: 22). In other words, under geometric aggregation a country would need to provide an extremely generous set of mother-specific leave policies to compensate for the absence of any father-specific leave. However, since the geometric mean uses the *n*th root of the product of the indicators, it requires all indicators to be positive. Thus, the geometric mean is unsuitable for the three composite family policy indicators as the use of Z-scores produces negative as well as positive indicator scores.

Given these issues, linear aggregation is considered the most suitable method for the thesis' three policy indices. Uncertainty around the desirability of complete compensability remains – and should be kept in mind when interpreting results – but linear aggregation is considered an intuitive and transparent approach (Zhou et al, 2005: 307) and the most appropriate for the three composite family policy indicators.

B.3. Handling missing data in the indicators of family policy

The thesis' indicators of family policy were selected so as to minimise missing data, but unfortunately several continue to suffer from a certain number of missing cases. As touched on in chapter **3**, missing cases can cause serious problems for analysis, particularly as through listwise deletion they lead to the loss of an entire case if even only one variable suffers from a single missing value. This problem is amplified further in the context of the use of indices, as a missing value on just one of the component indicators will compromise the validity of the entire index for the given country-year. Thus, it is important that any missing data in the indicators of family policy are handled appropriately.

As stated in chapter **3**, this thesis deals with missing data primarily through linear interpolation and, in cases at the beginning or end of the series, through 'carry next value back' and 'carry last value forward'. There are though a number of alternative and, in many cases, more sophisticated techniques available for treating and filling missing cases. Nardo et al (2005: 10, 17), for example, outline several competing methods, most of which

can be separated into two main types.

The first is single imputation, which is a broad family of techniques ranging from ad-hoc and deterministic imputation methods through to more refined regression- and model-based techniques, all of which fill the missing observation with a single value (Nardo et al, 2005: 52-53). These methods range in their complexity, and the techniques finally used in this thesis – linear interpolation and 'carry next value back'/'carry last value forward' – both fall into this category. However, all single imputation techniques suffer from the problem that they may systematically underestimate variance in the imputed values because they do not fully capture the uncertainty around the unknown values (Honaker and King, 2010: 563; Nardo et al, 2005: 17).

The second general method is multiple imputation. This is a model-based technique that looks to overcome the problem of underestimated variance by estimating several values for each piece of missing data. This allows the imputed data to reflect uncertainty in the missing observations and produces complete datasets that are superior to those filled using single imputation, from a statistical perspective at least (Honaker and King, 2010: 563).

Multiple imputation works well for data with independent observations (Honaker and King, 2010: 563). However, multiple imputation – and indeed all model-based methods – are not always well suited to data with non-independent, clustered or hierarchical structures, as is the case here where countries are repeatedly observed over time. In such situations the predictive models that lie behind multiple imputation methods can often return implausible imputed values that differ significantly from otherwise smooth or stable time trends, or that seem unlikely based on real-world knowledge (Honaker and King, 2010: 562). This is particularly problematic in the case of policy data, where indicator values tends to be relatively similar year-on-year.

In an attempt to overcome this problem, Honaker and King (2010) have developed a multiple imputation algorithm that takes into account the dependent and correlated structure of time-series cross-section data, and is designed to generate imputed values that are smooth over time within countries. This technique has been successfully applied within a time-series cross-section setting (e.g. Castellaci and Natera, 2011). Unfortunately,

however, this author could not get Honaker and King's method to predict consistently reasonable and plausible results for all the missing data within the current dataset[144].

Because of issues with inconsistent and implausible estimates, both multiple imputation and other model-based single imputation methods are considered unsuitable for use in this thesis. As stated in **3.2**, it is recognized that both methods finally chosen – linear interpolation and 'carry next value back'/'carry last value forward' – may, as single-imputation methods, lead to a reduction of variance in the post-imputation indicators. However, as the missing data in question is policy data, it is considered more important for filled values to be plausible and consistent. As a result, linear interpolation and 'carry next value back'/'carry last value forward' are considered the most suitable methods for dealing with missing data in this thesis' nine main indicators of family policy.

B.4. Estimations issues in time-series cross-section linear regression analysis

As discussed in chapter **3.4**, analysis in this thesis is conducted primarily through fixed effects multiple linear regression. Using multiple regression to examine the sort of data used here – time-series cross-section (TSCS) data – carries several advantages, not least that it is capable of synthesising large quantities of information and of providing at least some level of control between competing explanatory factors. However, it can also introduce a number of potential statistical issues that may complicate the estimation of relations. Many of these complications revolve around the fact that, because in TSCS data the same set of countries are observed repeatedly over time, cases are unlikely to be independent. If not handled properly, this lack of independence may lead to biased regression coefficients and incorrect standard errors and, consequently, false inferences (Beck and Katz, 1995; Beck, 2001; Wilson and Butler, 2007).

The techniques and corrections used in this thesis' regression models for any such statistical issues were summarised in chapter **3.4**. However, in several cases these issues require further detail and discussion. The following outlines and tests for the various potential issues, discusses options for dealing with any complications, and justifies and clarifies the final decisions made.

[144] To be clear, this is not a criticism of Honaker and King's (2010) algorithm. Rather, it is possible that these implausible results are caused by a given set of policy variables being poor predictors of other specific policy variables.

Unit heterogeneity

A primary concern in TSCS regression analysis is unit heterogeneity, that is, cross-country differences in the dependent variable caused by time-constant country-specific factors that are not included in the analysis, either because the appropriate variable is unknown or because it is not or cannot be observed (Wilson and Butler, 2007: 104). If not accounted for, the implicit assumption is that no unobserved country-specific heterogeneity exists (Wilson and Butler, 2007: 104). This may turn out to be correct, but in the presence of any unobserved heterogeneity estimates are open to omitted variable bias as the included independent variables are forced to explain variation caused by the omitted country-specific variables (Dougherty, 2006: 417). Unobserved heterogeneity is a concern in any analysis – indeed, as discussed in chapter **2**, it may be a core problem with the existing cross-sectional family policy literature – but any bias is likely to be inflated when using TSCS data due to repeated measurement of the same units.

Testing for unit heterogeneity is difficult since, by their nature, the variables in question are unobserved[145]. In the current case, however, unobserved heterogeneity is sufficiently likely to be taken almost as given[146].

Several methods exist for dealing with the problem, the three most common of which are random effects (RE), fixed effects (FE) and first-differencing (FD) (Dougherty, 2006: 412). The first two deal with heterogeneity by allowing the intercept to vary between units. The RE model does this by estimating a random parameter with a zero mean and estimatable variance. It assumes, however, that the unit-specific effects are uncorrelated with the included independent variables, which is often unrealistic in many TSCS applications (Wilson and Butler, 2007: 104)[147].

---

[145] Wilson and Butler (2007: 104-105) suggest including country-specific dummies and running a joint F test on the dummies, with any significant result indicating unobserved heterogeneity. However, as Plümper et al (2005: 331) point out, country-specific dummies also capture between-country differences in the levels of included independent variables and any pre-t_1 effect of time-varying independent variables. Thus, the presence of statistically significant country-specific dummies does not necessarily indicate the presence time-constant unit-specific heterogeneity.

[146] As an example, country-specific culture and tradition are likely to play a strong role in determining gendered labour market outcomes (Pfau-Effinger, 1998; Pfau-Effinger, 2004), are relatively constant – or at least slow-moving – over time, and despite the best efforts of researchers remain difficult to observe. As a result, if unaccounted for, country-specific differences in culture would likely bias results as other included factors are forced to pick up culture-driven variation in outcomes.

[147] This can be tested using a Hausmann test. Tests on the current dataset (not shown) reject the null that the unobserved effects are uncorrelated with the included independent variables, suggesting that the RE model is unsuitable. In any case, the FE model is preferred for substantive reasons.

The FE model, meanwhile, provides each unit with its own specific intercept through the inclusion of unit-specific dummy variables (less one, to avoid multicollinerity). These unit-specific dummies completely absorb all between-unit differences in the *levels* of all included variables, removing any unit-specific heterogeneity but also removing all other between-country variation (Beck, 2001: 285; Wilson and Butler, 2007: 120; Bartels, 2008: 6). As a result, both the dependent and independent variables are effectively centred on their unit-specific mean[148], leaving only within-unit variation and with the model transformed into one of within-unit change only (Plümper et al, 2005: 334). In many situations this is undesirable – between-unit variation is often of interest, and the centering of variables prevents the estimation of time-invariant or slowly changing variables due to collinearity (Beck, 2001; Wooldridge, 2010). In the current case, however – where the interest lies mostly in within-country relations between changes in policy and changes in equality outcomes – the fixed effects, within-unit change model is attractive.

The third common approach is to use a first-difference model, which estimates relations based on the year-on-year change – that is, the value at $_{t}$ less the value at $_{t-1}$, or the 'first-difference' – in all dependent and independent variables (Dougherty, 2006: 413). Taking year-on-year changes 'differences-out' any time-constant unit-specific heterogeneity, but also removes all other level variation from the included variables, leaving only variation that exists between $_{t}$ and $_{t-1}$ (Kittel and Winner, 2005: 278-279). Thus, like the FE estimator, FD produces results that are based on within-unit change only. In this case, however, estimates reflect only the instantaneous effects of a change in the independent variables, with any medium- or long-run association completely ignored (Kittel and Winner, 2005: 279). This has several advantages with regard to trending variables (see later in this section), but also radically changes the meaning and interpretation of estimates. In the current case, relations estimated using first-differences would reflect only a one-time effect of changes in family policy on gendered labour market outcomes.

As stated in chapter **3**, the approach taken here to unit heterogeneity is to use the fixed effects model. This is justified largely on theoretical grounds – given that this thesis' three research questions focus explicitly on relations between *changes* in policy and gender differences in employment outcomes, fixed effects models, with their focus on within-country variation only, appear particularly appropriate. Unfortunately though, use of fixed

[148] Indeed, an exactly equivalent model is the 'within-estimator', which centres all variables on their unit-specific means before estimation. This saves on degrees of freedom as it is no longer necessary to include the unit specific dummy variables (Dougherty, 2006: 412, 415).

effects does mean that this thesis cannot examine the effects of any time-constant or slowly changing factors on gender equality in employment.

Non-spherical errors

A standard OLS assumption is that regression errors are 'spherical', that is, they are identically and independently distributed with constant variance across observations (homoscedasticity) and no systematic dependence or correlation between observations (no autocorrelation) (Beck and Katz, 1995: 636; Beck, 2001: 274; Stock and Watson, 2007: 182). However, TSCS data tend to violate these assumptions, as repeatedly observing the same countries over time often results in 'clustered' data with non-independent errors across units and time (Beck and Katz, 1995: 636; Plümper et al, 2005: 329; Bartels, 2008: 2). More specifically, TSCS errors tend to be: panel heteroscedastic, with each unit having their own and different error variance; contemporaneously correlated, with errors for a given unit correlated with errors for other units at a given point in time: and serially correlated, with errors for a given unit in a given year correlated with earlier and later errors for that unit (Beck and Katz, 1995: 636; Plümper et al, 2005: 329). The result is that OLS standard errors are unlikely to be correct, leading to over- or under-confidence in the coefficients and incorrect inferences (Beck and Katz, 1995: 636; Beck, 2001: 274).

Table **B.1** presents results of tests for these three issues. In all cases, results are for the main models shown in chapters **5**, **6** and **7** for each of the eight dependent indicators of gender equality in employment. These tests suggest that models for all dependent variables suffer from the first and third issues – panel heteroscedasticity and serial correlation. Interesting, though, none appear to suffer from contemporaneous correlation[149].

There are, again, several methods available for dealing with non-spherical errors[150]. Perhaps the most common approach is to use panel corrected standard errors (PSCEs), which adjust OLS standard errors according to the clustered properties of the data in

[149] This is slightly surprising as, given the interdependence of OECD and particularly European economies, it might be expected that countries would experience common labour market shocks and, as result, cross-sectional correlation of errors. It is possible, however, that the use of gender gap indicators – rather than female outcome indicators - removes the effects of common shocks if, for example, the impact is felt equally (or almost equally) by men and women.

[150] An alternative and historically popular technique not discussed here is the 'Parks method', which transforms the data based on the correlated residuals before re-estimating the model through OLS. However, Beck and Katz (1995) show comprehensively that the Parks method severely underestimates standard errors.

Table B.1. **Tests for non-spherical errors in the regression models presented in chapters 5, 6 and 7**

				Panel heteoscedasticity		Contemporaneous correlation				Serial correlation				
				Modified Wald test for groupwise heteroscedasticity [a]		Pesaran's test of cross sectional independence [b]		Friedman's test of cross sectional independence [c]		Wooldridge's test for autocorrelation [d]		Lagged residual test for autocorrelation [e]		
Dependent Variable	Age group	Education Level	Test model	Chi-square (d.f.)	P	Statistic	P	Statistic	P	F (d.f.)	P	B	SE	
Gender gap in the labour force participation rate	25-54	-	Model A in table 5.3	465.65 (20)	0.000	-2.75	0.060	4.47	1.000	65.411 (1, 19)	0.000	0.94	(0.01)	***
Gender gap in the labour force participation rate	25-34	-	Model A in table 5.5	728.95 (20)	0.000	-1.75	0.081	11.88	0.891	25.98 (1, 19)	0.000	0.90	(0.01)	***
Gender gap in usual weekly working hours	25-54	-	Model A in table 5.7	567.28 (19)	0.000	-1.10	0.273	17.09	0.448	104.038 (1, 18)	0.000	0.94	(0.01)	***
Gender gap in the proportion of employees in 'female-type' occupations	All ages	-	Model A in table 6.3	76.68 (18)	0.000	0.38	0.707	5.14	0.997	22.906 (1, 17)	0.000	0.97	(0.02)	***
Female share of managerial employment (%)	All ages	-	Model A in table 6.6	162.20 (20)	0.000	-1.56	0.119	8.51	0.981	1.211 (1, 19)	0.285	0.80	(0.03)	***
Gender gap in the proportion of employees with top quintile earnings (5-year interval)	25-54	-	Model A in table 6.8	359.13 (18)	0.000	-	-	-	-	17.132 (1, 15)	0.001	0.46	(0.10)	***
Gender gap in the labour force participation rate	25-49	Low	Model A in table 7.4	92.73 (16)	0.000	-1.08	0.279	9.43	0.854	10.143 (1, 15)	0.006	0.94	(0.02)	***
		Medium	Model B in table 7.4	248.27 (16)	0.000	-0.90	0.367	9.20	0.867	11.540 (1, 15)	0.004	0.93	(0.02)	***
		High	Model C in table 7.4	144.69 (16)	0.000	0.43	0.667	13.52	0.562	30.444 (1, 15)	0.000	0.71	(0.04)	***
Gender gap in the labour force participation rate	25-29	Low	Model A in table 7.5	581.2 (16)	0.000	1.14	0.253	19.81	0.179	0.125 (1,15)	0.729	0.63	(0.05)	***
		Medium	Model B in table 7.5	76.19 (16)	0.000	0.25	0.805	13.58	0.558	1.396 (1, 15)	0.256	0.66	(0.04)	***
		High	Model C in table 7.5	770.53 (16)	0.000	-0.18	0.854	14.45	0.491	3.563 (1, 15)	0.079	0.39	(0.06)	***
Gender gap in the labour force participation rate	30-34	Low	Model A in table 7.6	130.81 (16)	0.000	0.58	0.563	19.12	0.209	0.041 (1, 15)	0.842	0.70	(0.04)	***
		Medium	Model B in table 7.6	179.31 (16)	0.000	-0.61	0.540	11.59	0.710	6.483 (1, 15)	0.022	0.78	(0.04)	***
		High	Model C in table 7.6	218.74 (16)	0.000	-1.43	0.152	5.59	0.986	1.464 (1, 15)	0.245	0.58	(0.04)	***
Female share of managerial employment (%)	All ages	Low	Model A in table 7.8	101.11 (16)	0.000	-0.26	0.797	11.25	0.735	5.262 (1, 15)	0.037	0.74	(0.04)	***
		Medium	Model B in table 7.8	100.50 (16)	0.000	0.08	0.938	17.69	0.280	2.675 (1, 15)	0.123	0.77	(0.04)	***
		High	Model C in table 7.8	72.81 (16)	0.000	-0.44	0.664	15.28	0.431	23.251 (1, 15)	0.000	0.91	(0.03)	***
Gender gap in the proportion of employees with top quintile earnings (5-year interval)[h]	25-54	Low	Model A in table 7.10	165.96 (16)	0.000	-	-	-	-	5.285 (1, 15)	0.036	0.29	(0.14)	*
		Medium	Model B in table 7.10	67.47 (16)	0.000	-	-	-	-	0.995(1, 15)	0.334	0.58	(0.12)	***
		High	Model C in table 7.10	1808.61 (16)	0.000	-	-	-	-	12.427 (1, 15)	0.003	0.70	(0.09)	***

Note : See the respective models for the full specifications

a. Null hypothesis is constant variance of errors (homoscedasticity) across units (Baum, 2001)

b. Null hypothesis is errors are cross-sectionally independent (no contemporaneous correlation) (De Hoyos and Sarafidis, 2006)

c. Null hypothesis is errors are cross-sectionally independent (no contemporaneous correlation) (De Hoyos and Sarafidis, 2006)

d. Null hypothesis is that errors are serially independent (no (first-order) serial correlation) (Wooldridge, 2002).

e. Null hypothesis is no relation between the residuals and their lag (no serial correlation).

f. Tests for contemporaneous correlation exclude Canada due to high level of missing data.

g. Tests for serial correlation exclude Luxembourg due to strong year-on-year fluctuations

h. Too few common observations to run tests for contemporaneous correlation

order to take into account any panel heteroscedasticity and contemporaneous correlation (Beck and Katz, 1995: 638; Beck, 2001: 278). PCSEs are generally considered a sound method for dealing with these two issues (Wilson and Butler, 2007: 104), and according to Beck come at '*no cost*' (2001: 278). They do nothing, however, to correct for serial correlation.

Here, Beck (2001: 279) and Beck and Katz (1995: 645) recommend adding a lagged dependent variable (LDV) to the model, which '*in almost all cases*' (Plümper et al, 2005: 329) removes serial correlation from the errors. The use of LDVs has, however, been criticised by several authors (Achen, 2001; Plümper et al, 2005). In particular, Achen (2001) shows that LDVs can capture an unjustifiably large proportion of variation in the dependent variable when at least some of the independent variables exhibit a trend, while several authors (Wooldridge, 2002: 270; Kittel and Winner, 2005: 278; Plümper et al, 2005) argue that combining an LDV with unit fixed effects necessarily biases estimates. The result is that the lagged dependent variable can suppress the coefficients on the independent variables, and in certain circumstances even reverse the direction of relations (Achen, 2001; Plümper et al, 2005).

An increasingly common alternative is to use cluster robust standard errors (CRSEs). Similar to PCSEs, CRSEs adjust standard errors to the clustered properties of the data, but importantly are consistent for panel heteroscedasticity, contemporaneous correlation and/or serial correlation[151] (Rogers, 1993; Angrist and Pischke, 2009: 312-313; Baum, 2006: 138). Thus, CRSEs can correct for non-spherical errors without the need for an additional LDV to remove serial correlation. A concern with CRSEs, though, is that they require a 'large' number of units for proper estimation, with estimates of the standard error biased downwards when the number of units is small (Angrist and Pischke, 2009: 319; Wooldridge, 2010: 311). It is not clear what constitutes a 'large' number of units (Angrist and Pischke, 2009: 320). Rogers (1993) suggests that the bias will be small if no unit exceeds roughly 5% of the total sample – implying that around twenty countries is close to sufficient – while Wawro et al (2011) provide evidence to indicate CRSEs are consistent with n=16. In any case, most statistical software – including STATA, as is used here – are able to apply finite sample corrections to adjust for a small number of units (Baum, 2006: 139; Baum et al, 2010). As noted in the text in section **3.4**, it is this latter approach – CRSEs – that is used across almost all models presented in this thesis.

[151] Standard CRSEs correct standard errors only for one-way clustering, so that there is a choice between adjusting for contemporaneous and serial correlation. However, Baum et al (2010) have recently developed a two-way cluster robust estimator, which allows for dependence in errors both within and between units.

Trends, non-stationarity and unit roots

An issue in any analysis with a time dimension is stationarity, that is, whether the distributional characteristics – primarily, the mean and variance – of the data series are constant over time (Wooldridge, 2009: 846). Estimating relations in OLS when more than one of the variables are non-stationary risks spurious results as two unrelated variables can appear to share an association only because the distributional characteristics – perhaps the mean – are changing concurrently over time[152]. Of perhaps greatest concern is non-stationarity caused by a unit root, that is, a highly persistent series where the current value of a variable for a given unit is equal to the previous year's value plus some weakly dependent process (Wooldridge, 2009: 391-393). These highly persistent variables tend to lead to the violation of several central OLS assumptions, and often result in spurious estimates (see Wooldridge, 2009: 388-396, 636-637).

Table **B.2** (overleaf) presents the results of Im-Pesaran-Shin and Fisher-type tests (Im, Pesaran and Shin, 2003; Choi, 2001; see Baltagi, 2001: 236-239) for unit roots in six of the eight indicators of gender equality in employment used across the thesis as dependent variables. Unfortunately it is not possible to perform Im-Pesaran-Shin tests on both the gender gap in employment in 'female-type' occupations and the female share of managers, and either type of test on the gender gap in top quintile earnings, due to a shortage of observations in the time-series. In most cases the tests suggest that the various measures of gender equality in employment do *not* contain unit roots. However, there is some suggestion of a possible unit root in the female share of managers with low and possibly also moderate education, and perhaps also the gender gap in the overall labour force participation rate. That said, these tests should be treated with caution – as Kittel and Winner (2005: 278) note, formal tests for unit roots are known to under-reject the null that the series are non-stationary.

Beck (2008) suggests an alternative test – first, run a model including a lagged dependant variable and examine whether the coefficient on the LDV is near one, and second do likewise with an autoregression on the residuals. In both cases, a coefficient near one indicates a possible unit root. Results from these 'Beck-type' tests are shown in the last two columns in table **B.2**. In all cases, tests for each of the eight dependent variables are again run on their respective main models (see chapters **5**, **6** and **7**). For all eight

[152] Or, alternatively, if only one variable is non-stationary then a 'true' relation between two variables may be obscured (Wooldridge, 2009: 366).

Table B.2. **Tests for non-stationarity and unit roots in the dependent variables used in chapters 5, 6 and 7**

			Formal unit-root tests										Beck's autoregression approach					
			Im-Pesaran-Shin unit-root test [a]		Fisher-type (Phillips-Perron) unit-root tests [b]								Coefficient on lagged dependent variable [c]			Coefficient on lagged residuals [d]		
Dependent Variable	Age group	Education Level	Statistic	P	Inverse chi-squared	P	Inverse normal	P	Inverse logit t	P	Modified inverse chi-squared	P	B	95% confidence interval		B	95% confidence interval	
Gender gap in the labour force participation rate	25-54	-	-1.374	0.085	109.052	0.000	-3.316	0.001	-4.869	0.000	7.720	0.000	0.589	0.516	0.661	-0.065	-0.152	0.021
Gender gap in the labour force participation rate	25-34	-	-0.300	0.382	80.695	0.000	-2.550	0.005	-3.344	0.001	4.550	0.000	0.573	0.498	0.648	-0.080	-0.171	0.011
Gender gap in usual weekly working hours	25-54	-	-1.729	0.042	63.052	0.007	-1.669	0.048	-1.819	0.036	2.874	0.002	0.544	0.457	0.631	-0.066	-0.165	0.034
Gender gap in the proportion of employees in 'female-type' occupations	All ages	-	-	-	64.752	0.002	-2.114	0.017	-2.554	0.006	3.389	0.000	0.291	0.159	0.423	-0.022	-0.147	0.102
Female share of managerial employment (%)	All ages	-	-	-	121.617	0.000	-5.507	0.000	-6.711	0.000	9.125	0.000	0.117	-0.004	0.237	-0.065	-0.175	0.046
Gender gap in the proportion of employees with top quintile earnings (5-year interval)	25-54	-	-	-	-	-	-	-	-	-	-	-	-0.339	-0.895	0.216	-0.544	-0.790	-0.299
Gender gap in the labour force participation rate	25-49	Low	-1.230	0.109	104.765	0.000	-4.601	0.000	-5.637	0.000	9.096	0.000	0.105	-0.037	0.247	-0.030	-0.154	0.094
		Medium	-2.119	0.017	68.867	0.000	-3.402	0.000	-3.590	0.000	4.608	0.000	0.259	0.133	0.386	-0.089	-0.205	0.027
		High	-2.928	0.002	150.483	0.000	-7.423	0.000	-10.016	0.000	14.810	0.000	0.041	-0.097	0.178	-0.103	-0.222	0.015
Gender gap in the labour force participation rate	25-29	Low	-3.398	0.000	173.132	0.000	-8.382	0.000	-11.558	0.000	17.642	0.000	-0.101	-0.233	0.032	-0.096	-0.219	0.028
		Medium	-2.786	0.003	134.820	0.000	-7.062	0.000	-8.819	0.000	12.853	0.000	-0.063	-0.203	0.076	-0.032	-0.156	0.091
		High	-2.848	0.002	131.782	0.000	-7.576	0.000	-8.799	0.000	12.473	0.000	0.010	-0.120	0.140	-0.110	-0.233	0.013
Gender gap in the labour force participation rate	30-34	Low	0.267	0.605	84.859	0.000	-3.636	0.000	-4.455	0.000	6.607	0.000	-0.156	-0.301	-0.011	-0.045	-0.174	0.084
		Medium	-3.454	0.000	107.428	0.000	-6.679	0.000	-7.170	0.000	9.428	0.000	-0.034	-0.171	0.104	-0.046	-0.169	0.077
		High	-4.518	0.000	175.809	0.000	-9.304	0.000	-11.997	0.000	17.976	0.000	0.027	-0.108	0.162	-0.061	-0.188	0.065
Female share of managerial employment (%)	All ages	Low	0.887	0.812	88.333	0.000	-3.895	0.000	-4.579	0.000	7.531	0.000	0.259	0.126	0.393	-0.073	-0.204	0.057
		Medium	-1.525	0.064	71.418	0.000	-4.263	0.000	-4.468	0.000	5.347	0.000	0.171	0.034	0.308	-0.092	-0.218	0.035
		High	-1.664	0.048	97.310	0.000	-4.739	0.000	-5.940	0.000	8.690	0.000	0.148	0.014	0.283	-0.031	-0.158	0.097
Gender gap in the proportion of employees with top quintile earnings (5-year interval)[h]	25-54	Low	-	-	-	-	-	-	-	-	-	-	-0.875	-1.471	-0.278	-0.528	-0.820	-0.235
		Medium	-	-	-	-	-	-	-	-	-	-	-1.029	-1.951	-0.108	-0.739	-0.950	-0.528
		High	-	-	-	-	-	-	-	-	-	-	-0.252	-0.817	0.312	-0.661	-0.914	-0.408

Note: All test models for Beck's autoregression approach are run using two-way fixed effects and country-specific time trends and include all appropriate independent policy and control variables (see main specifications in chapters 5, 6 and 7).

a. Null hypothesis is that all groups contain a unit root (Im, Pesaran and Shin, 2003).

b. Null hypothesis is that all groups contain a unit root (Choi, 2001)

c. Coefficient on the lagged dependent variable should not = 1 (Beck, 2008)

d. Coefficient on the lagged residual should not = 1 (Beck, 2008)

e. Too few years to run the Im-Pesaran-Shin test

f. Too few years to run both Im-Peraran-Shit and Fisher-type tests.

dependent variables the 95% confidence interval on both the LDV and the lagged residuals do not overlap – and, indeed, are far from – one, suggesting the none of the dependent variables contain a unit root[153].

Nonetheless, almost all of the indicators used in this thesis – be they dependent or independent variables – do contain some form of time trend. As a result, there remains at least some risk of spurious regression across most if not all of the models produced.

There are two main options available to deal with trending data. One is to estimate relations using the first difference (FD) estimator. As outlined earlier in this section, first difference models work by using year-on-year changes in variables only. As taking the year-on-year difference completely removes *all* level information, any trend in any of the included variables is cancelled out entirely through differencing (Kittel and Winner, 2005: 278). However, as also noted earlier on, first differencing completely changes the interpretation of the model to one that estimates the immediate one-time effects of the independent variables only.

A second option is to include country-specific time trends in the model[154]. These effectively de-trend the data – that is, in effect they subtract the value predicted by a linear trend from the observed value on a given indicator for a given country – so that all that remains is variation around the trend (Wooldridge, 2009: 365). This technique is fairly common – Ruhm (1998), Akgunduz and Plantenga (2012), Thévenon (2013) Thévenon and Solaz, (2013) all include country-specific time trends in their models – and is generally effective at reducing the risk of spurious regression as long as the variables do not contain unit roots. Unlike first differencing, it also has the advantage of being compatible with the inclusion of fixed effects. In part due to the latter, country-specific time trends are used in this thesis across all models to account for trending data.

Heterogeneous slopes

A central characteristic of most pooled TSCS regression analyses is that they generally

[153] As a side note, it might be interesting to note here that Beck and Katz (2011) suggest that the type of variables used in this thesis may well be highly persistent but cannot, by definition, contain a unit root as they are bounded – typically, between 0 and 100 – and thus over a long enough period must hold a constant mean.

[154] Another alternative is to include a common time trend. This is, however, unlikely to resolve the spurious regression problem as the magnitude of trends differ across countries (see chapters 4, 5, 6 and 7) - any country with an above (below) average trend on a given initial variable will, post-common-detrend, have a series with a positive (negative) trend.

estimate a single common coefficient – otherwise known as a homogenous slope – for all units and periods included in the analysis (Beck and Katz, 2007). In other words, it is assumed that the relationship between the dependent variable and a given independent variable is identical across units and time periods, with this common relationship represented by a single estimate. In the current analysis, the use of a homogenous slope would mean that the relationship between within-country variation in given policy and labour market indicators is assumed identical across the twenty-countries and twenty-six years in the sample.

The use of homogenous slopes across pooled units and time periods has been criticised as overly simplistic or unrealistic (e.g. Shalev, 2007a), and various techniques have been developed to allow slopes to vary across units or time. The simplest is to include an interaction effect between the independent variable and the unit, group of units or time period of interest. More sophisticated techniques include Pesaran and Smith's (1995) mean group estimator – which estimates individual relations for each unit and/or time period, before taking the mean as the overall relation – and random coefficients models (RCMs) or multilevel models, which allow for country-specific variation around a common coefficient (Beck and Katz, 2007).

It would of course be valuable to incorporate heterogeneous slopes into this thesis' analyses of links between changes in policy and gender differences in employment outcomes. Indeed, examining whether a given relationship varies across contexts would represent a worthwhile task in itself, particular if combined with an exploration of *why* relations differ. However, doing so comes at a cost – estimating individual unit, group or time slopes takes a large number of parameters (Beck, 2001: 286) and, more practically, takes a large amount of space to present, especially where several models are estimated. In many instances this additional space is tricky to justify, particularly in cases such as this where it would represent a secondary question only.

For the most part, estimation in this thesis uses only the simpler, common homogenous slopes – that is, regression models estimate within-country relations as they exist across all countries and time points included in the analysis only. However, as noted at several points across the thesis and in particular in chapter **8**, it is worth bearing in mind that relations may vary for a given individual country or group of countries, and that the presence or absence of a significant relation means only that the given relation is apparent across the sample as a whole.

Reverse causality

A final consideration is, as ever, endogeneity, and in particular endogeneity due to reverse causality or simultaneity between the dependent and independent variables. If unaccounted for, such endogeneity could lead to bias and inconsistency in the OLS estimates of not only the endogenous variable under consideration, but also all other variables included in a given model (Wooldridge, 2009: 552).

A particular concern here is reverse causality between the measures of gender equality in employment and several of the family policy indicators. It is possible, for example, that increases in female labour market activity – and, perhaps, also attainment – could drive increases in the generosity of family policy provision through political pressures and labour market tensions (Winegarden and Bracy, 1995: 1024; Thévenon and Solaz, 2013: 27). The indicators of childcare provision are perhaps at most risk, as the decision to make use of childcare is to some degree simultaneous with, typically, a mother's decision to participate in the labour market (Thévenon, 2013: 23). That said, the emphasis here on *public* childcare – which is determined by policy decisions as well as demand – does limit the danger to some degree. Several of the control variables are also potentially endogenous. The size of the service and public sectors could increase with female employment if a shift away from female domestic labour creates increased demand for services and public services – for example, an increase in demand for domestic and care services – while fertility may clearly be influenced by female participation, although the variable used here – the crude birth rate – partially reduces the risk of endogeneity (Thévenon, 2013: 23).

Winegarden and Bracy (1995) produce evidence to suggest that leave policies are unlikely to be endogenous (1995: 1024), but the other indicators remain a risk. The preferred solution in the presence of possible reverse causality is to instrument the endogenous variables – that is, to approximate the endogenous variable with one or more additional variables that correlate with the original variable but are not themselves endogenous – and to estimate the model using two-stage least squares (see Wooldridge, 2009: 546-566; Thévenon and Solaz, 2013: 27). Unfortunately, however, finding valid instruments for the endogenous variables is difficult.

As a compromise, Jaumotte (2003), Thévenon (2013) and Thévenon and Solaz (2013: 27) use as instruments the one-year lag of any potentially endogenous variables, under the argument that current values of the dependent variable are less likely to influence past

values of the endogenous variables[155]. As an exploration, the main model used in chapters **5**, **6** and **7** are re-run using the same approach, that is, estimated in two-stage least squares with any potentially endogenous independent variables instrumented by the one-year lag. Table **B.3** shows the results of a Durbin-Wu-Hausmann tests (Baum, Schaffer and Stillman, 2003) run on these models, which tests the null that running the same model in OLS produces consistent estimates or, in other words, that any (potentially) endogenous variables have no effect on results.

For all eight models the test fails to reject the null at $p<0.05$, suggesting results from the two-stage least squares models are not different to an equivalent model estimated using OLS. In other words, either the models do not suffer from endogeneity caused by reverse causality, or using the one-year lag of any potentially endogenous variables as instruments is ineffective at dealing with effects of any endogeneity. Given these results, and because the two-stage least squares estimator is less efficient than OLS (Wooldridge, 2009: 527), instrumental variables are not used here. However, as a precaution – and in part for theoretical reasons – in several specifications any potentially endogenous variables are lagged at ('proxied' by) one year (see section **3.4**). Estimation remains, however, in OLS.

[155] Angrist and Krueger (2001) do, however, caution against using lagged values as instruments as it is possible that the lagged value will remain correlated with the error term, in which case two-stage least squares may produce estimates with greater bias than OLS with the original variables (2001: 76).

Table B.3. **Tests for endogeneity in the models presented in chapters 5, 6 and 7**

Dependent Variable	Age group	Education level	Test model	Durbin-Wu-Hausman test of endogeneity [a] Chi-Squared (d.f.)	P
Gender gap in the labour force participation rate	25-54	-	Model A in table 5.3	5.806 (6)	0.445
Gender gap in the labour force participation rate	25-34	-	Model A in table 5.5	7.538 (6)	0.274
Gender gap in usual weekly working hours	25-54	-	Model A in table 5.7	6.254 (6)	0.395
Gender gap in the proportion of employees in 'female-type' occupations	All ages	-	Model A in table 6.3	5.602 (6)	0.469
Female share of managerial employment (%)	All ages	-	Model A in table 6.6	4.636 (4)	0.327
Gender gap in the proportion of employees with top quintile earnings (5-year interval)	25-54	-	Model A in table 6.8	7.148 (4)	0.128
Gender gap in the labour force participation rate	25-49	Low	Model A in table 7.4	4.379 (6)	0.626
		Medium	Model B in table 7.4	6.083 (6)	0.414
		High	Model C in table 7.4	6.197 (6)	0.401
Gender gap in the labour force participation rate	25-29	Low	Model A in table 7.5	6.126 (6)	0.409
		Medium	Model B in table 7.5	2.941 (6)	0.816
		High	Model C in table 7.5	6.398 (6)	0.380
Gender gap in the labour force participation rate	30-34	Low	Model A in table 7.6	6.726 (6)	0.347
		Medium	Model B in table 7.6	5.013 (6)	0.542
		High	Model C in table 7.6	8.354 (6)	0.213
Female share of managerial employment (%)	All ages	Low	Model A in table 7.8	0.802 (4)	0.938
		Medium	Model B in table 7.8	6.716 (4)	0.152
		High	Model C in table 7.8	2.093 (4)	0.719
Gender gap in the proportion of employees with top quintile earnings (5-year interval)[h]	25-54	Low	Model A in table 7.10	5.536 (4)	0.237
		Medium	Model B in table 7.10	3.418 (4)	0.490
		High	Model C in table 7.10	3.571 (4)	0.467

Note: See the respective models for the full specifications

a = Null hypothesis is that OLS yields consistent estimates (Baum, Schaffer and Stillman, 2003)

Appendix C. First statistical appendix to chapters 4, 5, 6 and 7: full results for each indicator of family policy and gender equality in employment, by country and year

Table C.1. **Mother-specific earnings-related job protected leave, in effective weeks, by country**

	Mother-specific earnings-related job protected leave, in effective weeks																													
	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Ave.	Std. Dev.	Min	Max
Australia	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Austria	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	0.0	16.0	16.0
Belgium	11.1	11.1	10.7	10.7	10.7	11.5	11.5	11.5	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.4	0.3	10.7	11.6
Canada	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.4	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.4	0.3	7.2	7.8
Denmark	13.5	13.7	13.1	12.8	12.8	12.6	12.3	12.2	10.9	9.4	8.5	8.2	8.0	7.8	7.7	7.7	7.4	7.3	7.2	7.3	7.2	6.8	6.9	6.8	6.9	6.9	9.3	2.6	6.8	13.7
Finland	13.3	13.3	14.0	14.0	14.0	14.0	14.0	12.3	11.6	11.6	11.6	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	14.1	14.1	14.1	14.1	12.9	1.0	11.6	14.1
France	16.8	16.8	16.8	16.8	15.7	15.7	15.7	15.7	15.7	15.7	15.7	18.4	18.2	16.1	16.6	16.1	15.6	14.7	14.8	13.6	14.3	14.3	14.3	14.3	14.7	14.6	15.7	1.2	13.6	18.4
Germany	-	-	-	-	-	-	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	0.0	14.0	14.0
Greece	12.0	12.0	12.0	12.0	12.0	12.0	15.0	15.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	15.3	2.0	12.0	17.0
Ireland	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.7	9.1	8.5	8.1	10.4	9.7	9.4	9.0	10.4	11.7	11.1	11.6	11.9	9.9	0.9	8.1	11.9
Italy	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	18.2	2.7	16.0	21.3
Luxembourg	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	0.0	16.0	16.0
Netherlands	12.0	12.0	12.0	12.0	12.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	15.2	1.6	12.0	16.0
New Zealand	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Norway	6.0	6.0	6.0	6.0	6.0	6.0	8.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	8.5	7.6	8.1	9.0	8.5	8.7	8.1	1.2	6.0	9.0
Portugal	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	14.0	14.0	14.0	14.0	15.7	15.7	17.1	17.1	17.1	17.1	17.1	17.1	17.1	17.1	9.7	9.7	14.3	2.3	9.7	17.1
Spain	10.5	10.5	10.5	10.5	10.5	12.0	12.0	12.0	12.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	14.3	2.4	10.5	16.0
Sweden	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.3	3.1	3.0	3.2	3.2	3.2	3.2	6.4	6.4	6.4	6.4	6.4	6.4	6.2	6.2	6.2	3.0	2.8	0.0	6.4
United Kingdom	8.0	8.0	8.0	8.0	8.1	8.1	8.1	8.0	8.0	8.0	8.0	8.0	7.8	7.7	7.7	7.6	7.5	7.5	9.3	10.4	10.2	10.4	12.3	12.5	12.3	12.8	8.9	1.7	7.5	12.8
United States	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Average	9.6	9.6	9.6	9.5	9.5	9.8	10.3	10.2	10.1	10.3	10.4	10.6	10.5	10.4	10.5	10.7	10.7	11.0	11.0	11.0	11.0	11.0	11.3	11.3	10.9	11.0				
Std. Dev.	5.9	5.9	5.9	5.9	5.8	6.0	5.9	5.9	5.9	6.0	5.8	6.0	6.0	5.9	6.0	6.3	6.4	6.2	6.2	6.1	6.2	6.2	6.2	6.2	6.1	6.1				
Min	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Max	16.8	16.8	16.8	16.8	16.0	16.0	16.0	16.0	16.0	16.0	16.0	18.4	18.2	16.1	16.6	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3				

Source(s): see 'Data Sources'

Table C.2. **Father-specific job protected leave, in effective weeks, by country**

	Father-specific job protected leave, in effective weeks																													
	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Ave.	Std. Dev.	Min	Max
Australia	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Austria	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.1	5.1	5.1	4.8	4.0	4.0	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	2.0	0.0	5.1
Belgium	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	4.2	3.5	3.4	3.4	4.3	4.3	4.2	4.2	4.7	4.7	4.7	4.8	4.7	2.4	1.9	0.6	4.8
Canada	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denmark	1.3	1.3	1.2	1.2	1.2	1.2	1.2	1.1	1.0	0.9	0.8	0.8	0.7	0.7	1.4	1.4	1.4	0.7	0.7	0.7	0.7	0.7	0.7	0.6	0.7	0.7	1.0	0.3	0.6	1.4
Finland	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.7	2.0	1.9	1.9	2.1	2.1	2.1	2.1	2.1	2.1	2.1	3.5	3.4	3.4	3.4	3.3	3.4	3.3	4.9	1.9	1.4	0.0	4.9
France	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	1.3	1.3	1.2	1.3	1.3	1.3	1.3	1.3	1.3	0.8	0.3	0.6	1.3
Germany	-	-	-	-	-	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.7	4.6	4.6	4.5	0.9	1.9	0.0	4.7
Greece	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.2	0.2	0.0	0.4
Ireland	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Italy	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	2.2	2.7	0.0	5.3
Luxembourg	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	19.4	19.5	18.9	19.2	19.1	18.6	19.0	19.0	18.8	18.5	18.5	17.6	8.9	9.4	0.4	19.5
Netherlands	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.4	3.0	3.0	3.1	5.9	6.0	0.9	1.8	0.0	6.0
New Zealand	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Norway	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	4.0	4.0	4.0	4.0	4.0	3.9	3.8	3.7	3.6	3.6	3.6	4.2	4.7	5.1	5.9	8.8	9.0	3.2	2.6	0.0	9.0
Portugal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	11.5	11.5	2.4	3.3	0.0	11.5
Spain	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.0	3.0	3.0	3.0	0.8	1.0	0.4	3.0
Sweden	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	4.9	4.6	4.5	4.8	4.8	4.8	4.8	8.0	8.0	8.0	8.0	8.0	8.0	7.8	7.8	7.8	4.7	2.7	1.8	8.0
United Kingdom	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.1	0.2	0.0	0.4
United States	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Average	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.5	0.5	0.9	0.9	0.9	1.1	2.2	2.5	2.5	2.5	2.6	2.5	2.6	2.8	3.1	3.2	3.8	3.9				
Std. Dev.	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1.0	1.0	1.6	1.6	1.6	1.8	4.4	4.4	4.3	4.5	4.5	4.4	4.5	4.5	4.4	4.3	4.9	4.8				
Min	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Max	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	4.0	4.0	4.9	5.1	5.1	4.8	19.4	19.5	18.9	19.2	19.1	18.6	19.0	19.0	18.8	18.5	18.5	17.6				

Source(s): see 'Data Sources'

Table C.3. **Gender-neutral earnings-related job protected parental leave, in effective weeks, by country**

	Gender-neutral earnings-related job protected parental leave, in effective weeks																													
	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Ave.	Std. Dev.	Min	Max
Australia	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Austria	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Belgium	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Canada	0.0	0.0	0.0	0.0	0.0	6.0	6.0	6.0	5.7	5.5	5.5	5.5	5.5	5.5	5.5	5.5	19.3	19.3	19.3	19.3	19.3	19.3	19.3	19.3	19.3	19.3	9.8	7.9	0.0	19.3
Denmark	7.5	7.6	7.3	7.1	7.1	7.0	6.8	6.8	6.1	5.2	4.7	4.6	4.5	4.3	4.3	4.3	4.1	12.9	12.9	13.0	12.8	12.0	12.2	12.0	12.3	12.3	8.1	3.4	4.1	13.0
Finland	21.0	21.0	21.0	21.0	21.0	21.0	22.6	19.8	17.4	17.4	17.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.7	18.7	18.7	18.7	19.2	1.4	17.4	22.6
France	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Germany	-	-	-	-	-	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	29.1	29.1	29.1	29.1	5.8	11.9	0.0	29.1
Greece	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ireland	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Italy	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	5.6	2.6	2.6	7.8
Luxembourg	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Netherlands	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
New Zealand	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.6	6.6	6.8	7.4	7.3	7.2	7.1	7.4	7.6	2.5	3.5	0.0	7.6
Norway	12.0	12.0	14.0	16.0	18.0	22.0	22.0	19.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	27.4	24.5	26.0	29.0	25.5	26.0	24.7	5.9	12.0	29.0
Portugal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.7	10.7	0.8	2.9	0.0	10.7
Spain	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sweden	34.7	34.7	34.7	34.7	46.3	46.3	46.3	46.3	46.3	46.3	35.4	33.2	32.6	34.7	34.7	34.7	34.7	31.8	31.8	31.8	31.8	31.8	31.8	30.8	30.8	30.8	36.1	5.8	30.8	46.3
United Kingdom	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
United States	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Average	4.4	4.4	4.5	4.6	5.3	5.8	5.6	5.3	5.6	5.6	5.0	4.9	4.9	5.0	5.0	4.7	5.4	6.0	6.0	6.0	6.0	5.8	7.3	7.4	7.8	7.9				
Std. Dev.	9.3	9.3	9.4	9.5	11.8	12.0	11.8	11.4	12.1	12.1	10.3	10.0	9.9	10.3	10.3	10.2	10.8	10.4	10.4	10.4	10.2	9.9	11.2	11.4	10.9	11.0				
Min	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Max	34.7	34.7	34.7	34.7	46.3	46.3	46.3	46.3	46.3	46.3	35.4	33.2	32.6	34.7	34.7	34.7	34.7	31.8	31.8	31.8	31.8	31.8	31.8	30.8	30.8	30.8				

Source(s): see 'Data Sources'

Table C.4. **Proportion of children under three years of age in public or publicly supported childcare, by country**

	Proportion of children under three years of age in public or publicly supported childcare (%) (with imputed data)																													
	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Ave.	Std. Dev.	Min	Max
Australia	2.0	2.1	2.3	2.4	2.5	2.6	2.8	2.9	3.0	3.2	3.3	3.4	3.7	3.9	4.2	4.4	4.7	4.9	5.3	5.8	6.2	6.5	6.9	7.2	7.8	8.3	4.3	1.9	2.0	8.3
Austria	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	5.0	5.4	6.3	7.1	7.7	8.0	8.7	8.5	9.2	10.2	10.8	11.8	14.0	15.8	17.1	17.1	7.4	4.7	3.0	17.1
Belgium	20.0	20.0	20.0	20.0	22.0	24.0	26.0	28.0	30.0	29.6	29.1	28.7	28.3	27.8	27.4	27.0	27.8	28.3	28.6	29.6	30.3	30.4	30.4	30.4	30.4	30.4	27.1	3.7	20.0	30.4
Canada	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	0.0	5.0	5.0
Denmark	42.0	43.5	45.0	46.5	48.0	47.0	47.8	48.5	49.3	50.0	46.0	48.0	55.0	55.0	56.0	56.3	57.0	55.0	55.0	59.3	61.7	63.7	65.7	65.7	65.0	65.7	53.7	7.5	42.0	65.7
Finland	32.0	31.8	31.6	31.4	31.2	31.0	27.3	23.5	19.8	16.0	18.0	22.0	25.0	25.0	25.0	24.0	24.7	24.3	24.3	25.0	25.0	26.0	27.0	28.3	27.0	27.7	25.9	4.2	16.0	32.0
France	20.0	20.0	20.0	20.0	20.6	21.2	21.8	22.4	23.0	22.6	22.1	21.7	21.3	20.9	20.4	20.0	21.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	21.4	0.9	20.0	23.0
Germany	-	-	-	-	-	-	10.3	8.7	7.0	5.3	3.6	3.7	3.7	3.8	3.8	5.0	6.3	7.7	9.0	10.2	11.3	12.4	13.4	14.5	15.6	16.7	8.6	4.3	3.6	16.7
Greece	2.0	3.0	3.5	4.0	3.8	3.6	3.4	3.2	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.8	4.6	5.4	6.2	7.0	7.0	7.0	7.0	7.0	7.0	7.0	4.5	1.8	2.0	7.0
Ireland	1.0	1.0	1.5	2.0	2.0	2.0	2.0	2.0	2.0	2.3	2.7	3.0	3.3	3.7	4.0	4.0	3.3	2.7	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.3	0.8	1.0	4.0
Italy	5.0	5.0	5.2	5.4	5.6	5.8	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.3	6.7	7.0	11.4	11.7	12.1	12.4	12.7	12.7	12.7	7.6	2.9	5.0	12.7
Luxembourg	1.0	1.3	1.5	1.8	2.0	2.2	2.3	2.5	2.7	2.8	3.0	3.8	4.6	5.4	9.5	11.1	13.2	14.7	14.7	16.3	16.7	17.6	18.4	19.0	19.2	18.2	8.7	7.0	1.0	19.2
Netherlands	2.0	2.0	2.0	2.0	2.0	3.5	5.0	6.5	8.0	7.6	7.2	6.8	6.4	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	5.3	1.8	2.0	8.0
New Zealand	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0
Norway	12.0	11.8	11.6	11.4	11.2	11.0	12.8	14.5	16.3	18.0	22.0	23.0	28.0	27.0	25.0	25.3	26.0	27.3	30.0	32.7	36.7	42.0	47.3	51.3	52.7	54.0	26.2	13.8	11.0	54.0
Portugal	4.0	4.0	5.0	6.0	7.2	8.4	9.6	10.8	12.0	12.0	12.0	12.0	12.0	12.0	12.0	13.4	14.8	16.2	17.6	19.0	19.0	19.0	19.0	19.0	19.0	19.0	12.8	5.1	4.0	19.0
Spain	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.0	7.9	10.8	13.7	16.6	16.6	16.6	16.6	16.6	16.6	16.6	7.5	6.3	2.0	16.6
Sweden	32.0	31.4	30.8	30.2	29.6	29.0	29.8	30.5	31.3	32.0	37.0	40.0	41.0	42.0	40.0	40.0	40.7	43.3	43.3	44.0	44.7	45.7	46.7	46.7	46.7	46.7	38.3	6.6	29.0	46.7
United Kingdom	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.0	1.3	1.5	1.8	2.0	1.8	1.6	1.4	1.7	2.2	2.2	3.9	1.9	0.5	1.0	3.9
United States	1.0	1.3	1.7	2.0	2.3	2.7	3.0	3.3	3.7	4.0	4.3	4.7	5.0	5.3	5.7	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	4.5	1.7	1.0	6.0
Average	9.9	10.1	10.2	10.4	10.7	10.9	11.1	11.3	11.5	11.4	11.8	12.3	13.2	13.3	13.4	13.6	14.3	14.9	15.4	16.5	17.1	17.7	18.4	18.9	19.0	19.3				
Std. Dev.	12.9	12.9	13.0	13.1	13.3	13.1	12.7	12.8	13.0	13.1	13.0	13.7	15.0	14.9	14.6	14.5	14.6	14.6	14.6	15.3	16.0	16.7	17.4	17.8	17.7	17.9				
Min	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0				
Max	42.0	43.5	45.0	46.5	48.0	47.0	47.8	48.5	49.3	50.0	46.0	48.0	55.0	55.0	56.0	56.3	57.0	55.0	55.0	59.3	61.7	63.7	65.7	65.7	65.0	65.7				

Source(s): see 'Data Sources'

Table C.5. **Proportion of children between three and six years of age in publicly run pre-primary education or in primary school, by country**

	Proportion of children between three and six years of age in publicly run pre-primary education or in primary school (%) (with imputed data)																													
	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Ave.	Std. Dev.	Min	Max
Australia	54.1	54.2	54.3	54.6	54.8	54.0	53.5	53.0	52.6	52.8	53.1	53.8	53.3	53.1	53.0	53.0	52.5	52.4	52.4	52.5	52.9	53.2	50.9	50.6	50.2	49.9	52.9	1.3	49.9	54.8
Austria	51.7	52.7	54.3	54.9	55.5	55.9	55.9	55.3	57.3	56.7	57.4	58.3	58.7	60.1	61.2	61.5	62.7	63.1	63.9	64.2	63.5	63.5	64.8	65.3	66.9	68.4	59.8	4.6	51.7	68.4
Belgium	59.0	59.4	58.8	58.3	58.7	59.1	58.9	60.0	60.3	60.6	61.0	60.6	60.3	61.0	62.0	63.3	63.6	63.9	63.9	64.0	65.8	65.8	66.1	65.9	65.6	65.1	62.0	2.7	58.3	66.1
Canada	54.6	55.6	55.9	56.3	56.9	57.3	57.2	56.8	56.1	55.8	58.2	59.1	58.0	56.9	57.2	57.0	56.6	57.2	57.8	57.9	58.0	57.8	58.6	58.4	58.3	58.7	57.2	1.1	54.6	59.1
Denmark	59.0	59.0	59.0	59.0	59.0	58.8	58.8	58.7	76.6	79.2	78.9	57.5	59.6	64.5	66.1	89.8	90.1	91.5	90.0	87.7	85.9	84.1	82.1	79.8	76.9	78.7	72.7	12.8	57.5	91.5
Finland	32.6	32.6	32.6	32.6	32.6	32.6	32.6	32.6	33.9	34.2	35.0	37.4	41.1	41.9	43.4	45.2	51.7	54.1	54.3	55.3	55.2	56.3	57.8	58.9	60.3	61.0	43.8	11.0	32.6	61.0
France	94.5	95.9	96.2	95.4	94.4	94.1	95.4	95.4	95.5	96.0	95.9	95.8	95.9	95.7	95.8	95.3	95.4	95.1	94.7	92.8	95.9	97.1	96.6	96.0	95.1	94.4	95.4	0.9	92.8	97.1
Germany	-	-	-	-	-	-	44.6	44.5	44.7	45.3	34.7	36.6	43.5	44.4	46.1	42.4	43.4	42.4	42.2	42.8	43.7	45.2	45.6	45.6	45.8	46.2	43.5	3.0	34.7	46.2
Greece	58.2	58.2	58.4	58.5	58.5	58.5	58.7	58.6	56.4	54.9	56.0	54.5	54.3	54.6	56.5	57.2	58.0	58.7	59.3	59.2	59.5	58.5	58.2	58.3	59.0	58.0	57.7	1.6	54.3	59.5
Ireland	12.1	12.6	12.5	12.2	12.3	12.1	11.8	11.8	12.2	12.4	12.1	11.8	12.1	64.5	63.4	62.5	61.4	61.5	61.8	62.0	61.8	61.0	61.3	67.8	62.7	61.2	37.3	25.7	11.8	67.8
Italy	69.2	71.0	71.8	72.2	73.1	74.8	75.3	78.8	79.3	79.4	78.8	80.1	78.0	77.1	77.9	78.5	80.8	81.1	79.2	82.1	80.5	80.3	78.3	77.2	77.5	77.1	77.3	3.4	69.2	82.1
Luxembourg	63.1	63.3	64.7	65.4	64.5	66.3	67.5	67.5	66.6	66.6	66.7	67.3	66.8	67.8	72.6	77.5	80.4	83.3	77.4	74.9	84.2	83.9	84.6	84.1	84.4	85.4	73.0	8.3	63.1	85.4
Netherlands	35.7	41.0	41.5	40.9	40.3	39.5	39.8	39.7	39.9	39.9	39.8	40.2	40.9	41.0	40.7	40.9	40.4	39.9	37.5	37.4	44.7	52.6	60.6	69.1	75.5	75.4	45.2	11.5	35.7	75.5
New Zealand	52.1	51.6	51.3	50.5	50.7	50.7	49.2	49.0	50.1	51.2	52.3	52.8	52.9	51.8	50.7	50.7	50.8	50.7	51.1	50.8	51.7	52.1	50.6	50.3	50.2	49.3	51.0	1.0	49.0	52.9
Norway	27.5	28.8	31.1	33.7	36.0	38.3	40.1	37.8	40.5	42.9	45.1	47.2	49.5	57.7	59.1	59.4	60.1	61.5	62.2	62.8	62.9	63.6	64.2	64.3	64.6	64.7	50.2	13.1	27.5	64.7
Portugal	34.6	35.1	35.2	34.6	36.2	38.4	43.1	43.4	42.7	43.3	43.2	42.5	46.4	50.9	52.1	55.2	55.3	55.8	55.4	57.0	56.9	56.7	56.7	57.1	57.3	57.6	47.8	8.7	34.6	57.6
Spain	58.5	59.8	61.1	60.9	61.0	61.3	62.4	65.0	68.0	70.6	72.0	72.9	74.5	75.9	77.6	77.5	77.9	79.0	79.6	80.3	80.1	80.6	81.0	81.5	84.3	85.7	72.7	8.7	58.5	85.7
Sweden	63.2	63.2	63.2	63.1	63.1	63.1	63.1	63.4	61.2	59.3	53.0	63.6	65.0	67.0	72.6	71.2	72.8	72.7	75.3	77.7	78.3	78.6	80.6	79.4	79.3	79.1	68.9	7.8	53.0	80.6
United Kingdom	78.9	80.3	80.3	80.2	79.1	80.4	80.6	82.9	84.0	85.2	86.1	86.4	87.5	89.4	87.8	88.9	89.3	89.0	86.8	86.1	91.1	85.2	82.1	85.4	84.7	88.6	84.8	3.7	78.9	91.1
United States	49.3	51.5	51.6	51.4	51.4	50.2	50.2	50.2	51.2	51.9	56.2	58.1	57.1	50.1	52.3	53.0	60.6	48.8	51.2	50.2	50.1	50.6	52.1	51.3	49.6	50.5	51.9	2.9	48.8	60.6
Average	53.0	54.0	54.4	54.5	54.6	55.0	54.9	55.2	56.5	56.9	56.8	56.8	57.8	61.3	62.4	64.0	65.2	65.1	64.8	64.9	66.1	66.3	66.6	67.3	67.4	67.7				
Std. Dev.	18.8	18.8	18.8	18.6	18.2	18.3	18.0	18.6	19.0	19.2	19.6	18.9	18.2	14.6	14.6	16.0	15.8	16.4	15.9	15.6	15.8	14.7	14.1	13.9	14.1	14.5				
Min	12.1	12.6	12.5	12.2	12.3	12.1	11.8	11.8	12.2	12.4	12.1	11.8	12.1	41.0	40.7	40.9	40.4	39.9	37.5	37.4	43.7	45.2	45.6	45.6	45.8	46.2				
Max	94.5	95.9	96.2	95.4	94.4	94.1	95.4	95.4	95.5	96.0	95.9	95.8	95.9	95.7	95.8	95.3	95.4	95.1	94.7	92.8	95.9	97.1	96.6	96.0	95.1	94.4				

Source(s): see 'Data Sources'

Table C.6. **Public expenditure on childcare services per child aged under six (US$ 1000s, 2005 prices 2005 PPPs), by country (with imputed data)**

	Public expenditure on childcare services per child aged under six (US$ 1000s, 2005 prices 2005 PPPs) (with imputed data)																													
	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Ave.	Std. Dev.	Min	Max
Australia	0.1	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.4	0.5	0.6	0.6	0.6	1.3	1.5	1.5	1.7	1.8	1.8	1.8	1.8	1.6	2.0	2.3	2.7	2.8	1.1	0.9	0.1	2.8
Austria	1.0	1.0	1.0	1.1	1.1	1.1	1.2	1.3	1.4	1.5	1.5	1.6	1.7	1.5	1.6	1.9	2.0	2.1	2.2	2.3	2.4	2.4	2.6	2.8	3.3	3.3	1.8	0.7	1.0	3.3
Belgium	0.3	0.3	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.3	0.3	2.4	2.6	2.7	3.2	3.5	3.7	3.8	3.8	3.9	4.0	4.1	4.0	3.9	1.9	1.7	0.2	4.1
Canada	0.9	0.9	0.9	0.9	0.9	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.7	0.9	0.9	0.9	0.9	0.9	0.1	0.7	0.9
Denmark	5.5	5.8	6.1	6.3	6.2	6.8	6.8	6.9	7.1	7.3	6.9	7.2	7.6	7.1	7.5	7.6	7.9	8.2	8.3	8.3	8.5	8.9	8.7	9.0	9.1	9.1	7.5	1.1	5.5	9.1
Finland	2.3	2.5	2.7	2.8	3.2	3.5	3.7	3.4	3.1	3.0	3.1	3.4	3.6	3.7	3.9	3.9	3.9	4.0	4.1	4.3	4.5	4.6	4.7	4.9	5.0	5.0	3.7	0.8	2.3	5.0
France	0.6	0.6	0.6	0.7	0.7	2.1	2.1	2.1	2.5	2.5	2.6	2.5	2.6	5.0	5.1	4.8	4.8	4.7	4.8	5.1	5.1	5.2	5.3	5.2	5.3	5.3	3.4	1.8	0.6	5.3
Germany	-	-	-	-	-	-	1.4	1.5	1.7	1.7	1.8	1.9	2.0	2.0	2.0	1.8	1.9	2.1	2.1	2.1	2.2	2.4	2.5	2.7	3.1	3.4	2.1	0.5	1.4	3.4
Greece	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.4	0.1	0.3	0.6
Ireland	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.4	0.5	1.3	1.4	1.6	1.8	2.0	2.2	2.4	2.5	2.6	2.7	3.0	3.2	3.4	1.2	1.2	0.1	3.4
Italy	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.4	0.5	0.4	2.3	2.5	2.7	3.0	2.7	3.0	3.0	3.1	3.4	3.2	3.3	3.1	3.1	1.7	1.3	0.3	3.4
Luxembourg	0.9	1.0	1.1	1.4	1.4	1.7	2.0	2.0	2.1	2.4	2.6	2.8	2.9	3.3	3.8	3.6	3.1	3.5	3.4	3.6	3.8	4.0	3.9	5.8	4.2	4.1	2.9	1.2	0.9	5.8
Netherlands	1.3	1.3	1.4	1.3	1.7	1.8	1.6	1.2	1.2	1.2	1.3	1.3	1.7	3.0	3.1	3.4	3.5	3.9	4.3	4.4	5.0	6.3	7.1	4.6	5.0	5.0	3.0	1.8	1.2	7.1
New Zealand	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.5	0.5	0.6	0.6	1.4	1.5	1.5	1.5	1.6	1.7	1.8	2.0	2.1	2.4	2.7	3.1	3.4	1.1	1.1	0.0	3.4
Norway	1.6	2.0	2.3	2.5	2.7	2.7	3.0	3.4	3.6	3.8	3.9	4.1	4.1	4.2	4.2	3.8	4.1	3.6	4.1	4.7	4.8	5.5	6.3	6.5	7.8	7.7	4.1	1.6	1.6	7.8
Portugal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.7	0.9	1.0	1.1	1.1	1.3	1.3	1.3	1.3	1.3	1.3	1.4	1.4	0.6	0.6	0.0	1.4
Spain	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	1.7	1.8	2.2	2.1	2.1	2.3	2.3	2.4	2.5	2.6	2.6	2.7	2.7	1.2	1.2	0.0	2.7
Sweden	5.7	6.1	6.0	6.0	6.2	6.5	6.1	5.6	5.5	5.5	5.1	5.7	5.8	6.1	6.6	6.0	6.4	7.1	7.7	7.9	8.3	9.0	9.1	9.4	9.4	9.2	6.9	1.4	5.1	9.4
United Kingdom	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	2.6	2.9	3.3	3.5	3.5	4.0	3.9	4.3	5.0	4.8	5.0	4.9	1.9	2.1	0.0	5.0
United States	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	1.4	1.5	1.5	1.6	1.7	1.5	1.4	1.4	1.6	1.7	1.6	1.7	1.7	0.8	0.8	0.0	1.7
Average	1.1	1.2	1.2	1.3	1.3	1.5	1.5	1.5	1.5	1.6	1.6	1.7	1.8	2.6	2.8	2.8	2.9	3.0	3.2	3.3	3.4	3.6	3.8	3.9	4.0	4.0				
Std. Dev.	1.7	1.8	1.9	1.9	1.9	2.1	2.0	2.0	2.0	2.0	1.9	2.0	2.1	1.8	1.9	1.8	1.9	1.9	2.0	2.1	2.2	2.4	2.5	2.4	2.5	2.4				
Min	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.5	0.5	0.5				
Max	5.7	6.1	6.1	6.3	6.2	6.8	6.8	6.9	7.1	7.3	6.9	7.2	7.6	7.1	7.5	7.6	7.9	8.2	8.3	8.3	8.5	9.0	9.1	9.4	9.4	9.2				

Source(s): see 'Data Sources'

Table C.7. **Child benefit per month for two children, as a proportion of an average production worker's gross monthly earnings, by country**

	Child benefit per month for two children, as a proportion of an average production worker's gross monthly earnings (%)																													
	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Ave.	Std. Dev.	Min	Max
Australia	3.3	3.1	2.9	2.7	3.2	3.4	3.3	3.3	3.2	3.1	3.1	3.1	3.0	2.8	2.9	13.8	13.5	13.3	12.3	12.0	12.5	12.7	11.8	12.0	11.8	11.9	7.1	4.8	2.7	13.8
Austria	13.8	13.2	14.0	13.5	12.9	13.0	14.1	13.8	13.6	13.1	13.0	12.0	11.4	11.2	11.0	13.4	13.3	14.9	15.4	15.0	11.2	10.4	10.0	11.1	11.0	10.8	12.7	1.5	10.0	15.4
Belgium	10.3	10.6	11.0	10.9	10.6	10.6	11.5	11.5	11.4	11.6	9.7	9.2	8.8	8.3	8.6	9.1	8.9	9.2	9.4	9.3	8.4	8.4	8.2	8.0	10.8	10.6	9.8	1.2	8.0	11.6
Canada	3.2	3.1	3.1	3.0	2.9	2.8	2.8	2.6	6.3	6.2	6.4	6.0	5.8	5.7	5.7	6.1	6.0	5.8	5.8	5.9	6.1	6.0	6.0	5.8	5.8	6.1	5.0	1.4	2.6	6.4
Denmark	2.9	2.9	5.5	5.5	5.7	5.6	5.6	5.5	5.4	5.9	5.6	5.6	5.8	5.8	5.9	5.9	5.9	5.8	5.8	5.7	5.8	5.9	5.7	5.5	5.6	5.7	5.5	0.8	2.9	5.9
Finland	6.1	6.1	5.9	5.5	5.9	6.3	7.0	7.4	8.0	12.7	12.0	10.9	10.2	10.2	9.8	9.3	8.9	8.6	8.3	8.6	7.7	7.5	7.3	6.9	6.9	6.8	8.1	1.9	5.5	12.7
France	11.5	11.3	11.2	11.2	11.3	11.1	10.8	10.7	10.7	14.0	17.7	17.0	15.7	15.8	15.4	7.8	7.7	7.7	7.6	7.5	5.9	5.7	5.7	5.7	5.8	5.7	10.3	3.8	5.7	17.7
Germany	-	-	-	-	-	-	4.5	4.8	4.7	4.5	4.4	6.7	9.1	8.9	9.9	10.4	10.2	11.1	10.9	10.8	9.0	8.8	8.6	8.4	8.9	9.9	8.2	2.4	4.4	11.1
Greece	4.5	4.7	3.6	2.9	2.4	2.3	2.0	1.7	1.6	2.0	1.9	1.9	1.7	2.1	2.1	2.0	1.9	1.9	1.8	1.7	1.6	1.4	1.2	1.1	1.5	1.4	2.1	0.9	1.1	4.7
Ireland	3.2	3.7	3.5	3.4	3.3	3.3	3.2	3.0	2.9	3.2	3.6	4.2	4.8	4.7	4.7	4.8	5.5	11.1	10.5	10.3	8.9	11.9	12.3	11.5	12.1	11.0	6.3	3.6	2.9	12.3
Italy	2.8	2.7	2.5	2.3	10.8	10.1	8.8	9.3	9.8	6.6	6.1	8.7	11.0	10.8	10.8	10.5	10.3	15.4	15.0	14.6	14.5	14.2	13.8	14.8	14.7	14.5	10.2	4.2	2.3	15.4
Luxembourg	7.6	8.9	9.1	8.6	8.4	8.3	8.6	10.7	13.2	13.3	12.8	12.7	12.6	14.4	16.2	15.9	15.8	17.5	17.5	17.8	14.6	13.9	13.4	13.0	11.3	11.1	12.6	3.1	7.6	17.8
Netherlands	7.0	6.8	6.6	6.9	6.7	6.3	8.2	8.0	8.0	6.3	6.8	6.8	6.5	6.7	6.5	5.9	5.8	5.8	5.8	5.8	4.9	4.9	5.0	4.8	4.8	4.7	6.2	1.0	4.7	8.2
New Zealand	3.5	3.3	2.8	2.5	2.3	2.3	10.4	10.1	10.0	9.8	10.0	10.0	10.3	10.7	10.7	10.3	10.0	9.6	9.1	9.1	18.8	18.0	19.3	18.4	18.5	18.5	10.3	5.5	2.3	19.3
Norway	7.9	8.3	8.6	9.4	9.7	10.2	10.4	10.5	10.6	10.5	10.1	9.3	9.5	9.0	8.6	7.3	8.3	8.0	7.6	7.3	6.1	5.9	5.5	5.2	5.1	5.0	8.2	1.8	5.0	10.6
Portugal	4.1	5.4	5.2	4.8	4.6	4.5	3.9	4.0	4.1	5.2	5.2	4.9	4.8	6.1	7.3	7.3	7.9	7.6	7.8	8.1	5.5	5.4	5.0	4.9	5.2	5.2	5.5	1.3	3.9	8.1
Spain	0.5	0.5	0.5	0.5	0.4	0.4	4.4	4.1	3.9	3.7	3.6	3.3	3.2	3.1	3.0	3.9	3.7	3.6	3.4	3.2	2.8	2.8	2.7	2.6	2.6	2.5	2.6	1.3	0.4	4.4
Sweden	9.2	8.7	9.9	9.2	8.3	8.7	11.1	10.5	10.4	9.8	9.7	8.1	7.3	8.4	8.2	8.9	9.7	9.4	9.2	9.1	7.4	7.7	7.5	7.2	7.6	7.7	8.8	1.1	7.2	11.1
United Kingdom	8.5	8.1	7.7	7.1	6.5	5.9	5.7	6.6	5.9	6.7	6.0	5.8	5.7	6.0	6.5	6.8	6.8	6.8	6.7	6.8	5.0	4.9	4.7	4.9	5.1	5.0	6.2	1.0	4.7	8.5
United States	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Average	5.8	5.9	6.0	5.8	6.1	6.1	6.8	6.9	7.2	7.4	7.4	7.3	7.4	7.5	7.7	8.0	8.0	8.7	8.5	8.4	7.8	7.8	7.7	7.6	7.8	7.7				
Std. Dev.	3.8	3.7	3.9	3.9	3.8	3.8	3.8	3.9	3.9	4.2	4.4	4.1	3.9	4.0	4.2	3.9	3.8	4.4	4.4	4.4	4.6	4.6	4.7	4.7	4.6	4.5				
Min	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Max	13.8	13.2	14.0	13.5	12.9	13.0	14.1	13.8	13.6	14.0	17.7	17.0	15.7	15.8	16.2	15.9	15.8	17.5	17.5	17.8	18.8	18.0	19.3	18.4	18.5	18.5				

Source(s): see 'Data Sources'

Table C.8. **Tax subsidies for the family, by country**

Difference between the post-tax (income tax and social security contributions) earnings of a single earner couple with two children on 100% of the average wage and the post-tax earnings for single individual with no children, also on 100% of average earnings, as a proportion of the average wage (%) (with imputed data)

	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Ave.	Std. Dev.	Min	Max
Australia	4.6	4.6	4.6	4.6	4.6	4.6	4.7	4.8	4.7	3.3	1.9	0.5	1.1	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.2	2.1	2.0	0.0	4.8
Austria	2.6	2.9	3.1	3.5	3.9	3.7	3.5	3.4	5.6	5.6	5.4	5.2	5.2	5.1	1.6	1.2	1.2	1.2	1.1	2.0	2.0	1.9	1.8	1.8	2.3	2.2	3.0	1.5	1.1	5.6
Belgium	7.1	6.9	6.8	8.9	11.1	11.7	11.7	12.0	11.9	10.8	11.1	11.1	11.0	11.0	11.0	10.2	9.9	9.7	10.1	11.5	11.5	11.5	11.4	11.2	11.3	11.0	10.5	1.5	6.8	12.0
Canada	9.1	9.1	9.1	9.1	9.1	8.5	8.3	8.0	9.8	10.7	10.5	10.1	9.5	9.4	10.6	3.9	4.0	4.3	4.4	4.5	4.5	4.5	6.6	6.2	6.8	6.5	7.6	2.4	3.9	10.7
Denmark	5.6	7.0	8.4	8.4	8.5	8.4	8.2	8.1	8.1	8.4	8.0	7.2	7.3	7.1	6.9	6.7	6.4	6.1	6.1	5.2	5.2	5.2	5.2	5.3	4.5	4.3	6.8	1.4	4.3	8.5
Finland	5.9	6.1	6.2	7.0	7.8	7.4	7.3	7.6	6.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	3.3	0.0	7.8
France	7.6	7.3	7.0	7.0	7.0	7.1	7.1	7.0	6.9	6.9	6.9	6.2	6.8	6.5	6.7	8.4	8.2	7.7	7.5	7.7	7.4	6.2	6.0	6.2	5.9	5.8	7.0	0.7	5.8	8.4
Germany	-	-	-	-	-	-	9.7	10.6	10.5	10.5	11.2	19.4	20.2	19.7	21.2	21.2	20.6	21.3	21.0	20.8	20.2	19.9	19.6	19.3	20.5	19.4	17.8	4.4	9.7	21.3
Greece	3.2	2.4	1.7	1.9	2.1	-0.8	3.1	-0.9	1.2	1.0	0.9	0.8	-0.5	-0.4	-0.1	-2.1	-2.1	-2.1	-1.7	-1.5	-1.6	-1.8	-0.4	-0.4	-0.4	-0.3	0.0	1.6	-2.1	3.2
Ireland	10.7	10.4	10.1	9.3	8.6	8.3	8.4	7.7	7.9	7.7	7.0	6.9	6.5	6.9	9.2	10.2	9.0	9.1	8.6	8.2	4.9	8.0	8.1	8.4	8.5	8.4	8.3	1.3	4.9	10.7
Italy	2.2	2.7	3.2	3.3	3.3	3.2	3.5	3.5	3.6	3.7	3.5	3.7	3.5	4.2	4.2	4.3	5.0	6.8	6.6	6.4	7.4	7.2	7.6	7.2	7.0	6.8	4.8	1.8	2.2	7.6
Luxembourg	14.6	13.8	13.0	13.3	13.5	13.9	11.8	12.0	12.7	12.9	13.1	13.4	13.8	11.6	12.1	14.7	14.8	12.4	13.0	13.5	13.9	14.1	14.3	10.1	9.8	10.1	12.9	1.4	9.8	14.8
Netherlands	2.9	2.9	3.0	2.9	2.8	2.6	-0.2	3.1	3.4	4.2	4.5	4.2	4.7	4.8	4.7	5.7	5.2	5.3	5.5	5.7	5.8	5.9	5.7	5.1	4.2	3.8	4.2	1.4	-0.2	5.9
New Zealand	3.0	2.4	1.8	2.5	3.1	1.8	3.0	2.0	1.7	0.0	2.1	3.5	5.4	5.2	5.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.4	0.0	1.6	1.8	-0.4	5.4
Norway	7.6	7.5	7.4	7.4	7.4	7.1	6.6	5.1	5.0	4.9	4.8	4.8	4.6	4.4	4.1	4.8	4.0	3.3	3.0	3.0	2.5	2.5	2.5	2.5	2.5	2.5	4.7	1.9	2.5	7.6
Portugal	0.9	1.2	1.5	3.0	4.4	4.6	4.8	4.6	4.5	3.7	3.7	3.6	4.1	4.1	4.2	5.3	6.4	6.8	6.8	6.8	7.1	7.4	7.7	7.7	7.7	7.9	5.0	2.1	0.9	7.9
Spain	4.7	4.6	4.4	4.8	5.2	5.0	4.9	6.6	6.7	6.8	6.8	6.9	7.0	7.4	9.3	8.3	8.1	7.8	7.8	7.5	7.3	7.1	8.0	7.8	7.6	7.5	6.8	1.3	4.4	9.3
Sweden	1.7	1.6	1.5	1.4	1.3	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.6	0.0	1.7
United Kingdom	4.4	4.1	3.8	3.6	3.5	3.5	3.3	3.1	3.0	2.4	1.6	1.7	1.6	1.6	1.1	0.0	2.0	2.0	1.9	1.9	1.8	1.7	1.6	1.6	1.6	1.6	2.3	1.1	0.0	4.4
United States	7.3	6.4	5.4	6.2	6.9	7.0	7.0	7.1	7.0	6.9	7.1	7.8	7.5	7.9	10.8	10.5	11.0	10.8	13.6	13.5	13.3	13.0	12.7	12.7	14.0	13.4	9.5	3.0	5.4	14.0
Average	5.6	5.5	5.4	5.7	6.0	5.7	5.8	5.8	6.0	5.5	5.5	5.9	6.0	5.9	6.2	5.7	5.7	5.6	5.8	5.8	5.7	5.7	5.9	5.6	5.7	5.6				
Std. Dev.	3.4	3.3	3.2	3.2	3.3	3.6	3.4	3.6	3.5	3.9	3.9	4.9	5.0	4.8	5.4	5.8	5.6	5.6	5.7	5.7	5.6	5.6	5.5	5.2	5.4	5.2				
Min	0.9	1.2	1.5	1.4	1.3	-0.8	-0.2	-0.9	0.0	0.0	0.0	0.0	-0.5	-0.4	-0.1	-2.1	-2.1	-2.1	-1.7	-1.5	-1.6	-1.8	-0.4	-0.4	-0.4	-0.3				
Max	14.6	13.8	13.0	13.3	13.5	13.9	11.8	12.0	12.7	12.9	13.1	19.4	20.2	19.7	21.2	21.2	20.6	21.3	21.0	20.8	20.2	19.9	19.6	19.3	20.5	19.4				

Source(s): see 'Data Sources'

Table C.9. **Flat-rate job protected parental leave and childcare leave available to mothers, in effective weeks, by country**

	Flat-rate job protected parental leave and childcare leave available to mothers, in effective weeks																										Std.		
	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Ave.	Dev.	Min	Max
Australia	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Austria	12.4	12.1	11.8	11.6	11.4	20.5	20.0	19.7	19.6	19.4	13.4	16.7	16.4	15.1	12.6	12.4	12.1	23.0	22.5	22.1	21.7	21.3	20.9	20.5	20.3	19.9	17.3	4.2	11.4	23.0
Belgium	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.5	3.6	3.5	3.3	3.4	3.3	3.2	3.2	3.7	3.7	3.7	3.8	3.8	1.8	1.8	0.0	4.5
Canada	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denmark	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.0	12.6	11.1	9.8	8.3	6.9	6.8	6.7	6.7	6.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.4	4.7	0.0	14.0
Finland	22.8	27.0	25.9	24.1	22.4	22.1	27.6	30.2	30.1	28.7	25.9	20.1	19.9	19.8	19.7	19.1	17.8	16.4	15.7	15.3	16.5	16.0	15.3	14.7	15.5	15.4	20.9	5.1	14.7	30.2
France	21.1	20.8	20.7	20.7	20.8	20.4	20.3	20.0	19.8	39.4	39.2	38.2	37.9	33.2	32.9	31.6	30.7	28.5	28.2	29.9	29.8	29.5	28.9	28.3	29.0	28.7	28.0	6.5	19.8	39.4
Germany	-	-	-	-	-	-	15.5	14.6	18.8	18.3	17.6	17.4	17.1	16.7	16.2	16.2	16.0	15.6	15.3	14.6	14.5	14.4	0.0	0.0	0.0	0.0	12.9	6.8	0.0	18.8
Greece	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ireland	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Italy	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Luxembourg	0.0	0.0	0.0	37.8	36.4	35.5	34.2	33.6	32.3	31.6	32.2	31.9	30.8	31.0	57.5	55.8	53.7	54.5	53.6	53.0	53.3	53.8	53.0	51.9	51.9	49.5	38.8	17.3	0.0	57.5
Netherlands	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.2	3.2	3.2	6.7	6.8	0.9	2.0	0.0	6.8
New Zealand	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Norway	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.5	11.8	14.5	13.5	12.7	14.6	14.0	12.5	11.5	9.8	9.2	9.8	9.3	5.8	6.1	0.0	14.6
Portugal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Spain	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sweden	2.5	2.3	2.2	2.0	1.9	1.7	1.6	1.5	1.5	13.5	1.4	1.3	1.4	1.4	1.4	1.3	1.3	2.5	2.4	1.2	1.1	1.1	1.0	17.3	17.0	16.8	3.9	5.4	1.0	17.3
United Kingdom	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
United States	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Average	3.1	3.3	3.2	5.1	4.9	5.3	6.0	6.7	6.7	8.1	7.0	6.7	6.5	6.8	8.1	8.1	7.7	7.8	7.8	7.7	7.6	7.7	6.8	7.4	7.7	7.5				
Std. Dev.	7.2	7.9	7.6	10.8	10.4	10.7	10.9	11.1	11.1	12.7	12.3	11.8	11.6	10.7	14.7	14.3	13.7	14.1	13.9	13.9	13.9	13.8	13.6	13.4	13.5	13.0				
Min	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Max	22.8	27.0	25.9	37.8	36.4	35.5	34.2	33.6	32.3	39.4	39.2	38.2	37.9	33.2	57.5	55.8	53.7	54.5	53.6	53.0	53.3	53.8	53.0	51.9	51.9	49.5				

Source(s): see 'Data Sources'

Table C.10. **Total effective maternity and parental leave available to mothers, in weeks, by country**

	Total effective maternity and parental leave available to mothers, in weeks																											Std.		
	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Ave.	Dev.	Min	Max
Australia	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Austria	28.4	28.1	27.8	27.6	27.4	36.5	36.0	35.7	35.6	35.4	29.4	32.7	32.4	31.1	28.6	28.4	28.1	33.7	33.4	33.0	32.7	32.4	32.1	31.8	31.7	31.4	31.6	2.9	27.4	36.5
Belgium	11.1	11.1	10.7	10.7	10.7	11.5	11.5	11.5	11.6	11.6	11.6	11.6	11.6	16.0	15.1	15.0	14.9	14.9	14.9	14.7	14.7	15.2	15.2	15.3	15.4	15.3	13.2	2.0	10.7	16.0
Canada	7.8	7.8	7.8	7.8	7.8	13.8	13.8	13.8	13.1	12.6	12.6	12.6	12.6	12.6	12.6	12.6	26.4	26.4	26.4	26.4	26.4	26.4	26.4	26.4	26.4	26.4	17.2	7.7	7.8	26.4
Denmark	21.0	21.3	20.3	19.9	19.9	19.6	19.1	18.9	17.0	14.6	13.2	12.8	12.5	12.2	12.0	11.9	11.5	20.2	20.1	20.3	19.9	18.8	19.1	18.8	19.2	19.1	17.4	3.4	11.5	21.3
Finland	34.4	34.4	35.0	35.0	35.0	35.0	36.6	32.1	28.9	28.9	28.9	30.7	30.7	30.7	30.7	30.7	30.7	30.7	30.7	30.7	30.7	30.7	32.8	32.8	32.8	32.8	32.0	2.2	28.9	36.6
France	30.3	30.1	37.5	37.5	36.5	36.1	35.9	35.6	35.5	55.1	54.8	56.6	56.1	49.4	49.5	47.7	46.3	43.2	42.9	43.5	44.1	43.8	43.2	42.6	43.6	43.3	43.1	7.5	30.1	56.6
Germany	-	-	-	-	-	-	29.5	28.6	32.8	32.3	31.6	31.4	31.1	30.7	30.2	30.2	30.0	29.6	29.3	28.6	28.5	28.4	43.1	43.1	43.1	43.1	32.8	5.4	28.4	43.1
Greece	12.0	12.0	12.0	12.0	12.0	12.0	15.0	15.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	15.3	2.0	12.0	17.0
Ireland	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.7	9.1	8.5	8.1	10.4	9.7	9.4	9.0	10.4	11.7	11.1	11.6	11.9	9.9	0.9	8.1	11.9
Italy	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.9	23.9	23.9	23.9	23.9	23.9	23.9	23.9	23.9	23.9	23.9	23.9	0.1	23.8	23.9
Luxembourg	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	43.8	42.7	41.7	42.1	41.6	41.4	41.5	41.7	41.4	40.8	40.8	39.7	27.8	13.0	16.0	43.8
Netherlands	12.0	12.0	12.0	12.0	12.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	19.2	19.2	19.2	22.7	22.8	16.1	2.8	12.0	22.8
New Zealand	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.6	6.6	6.8	7.4	7.3	7.2	7.1	7.4	7.6	2.5	3.5	0.0	7.6
Norway	18.0	18.0	20.0	22.0	24.0	28.0	30.0	28.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	35.8	32.1	34.1	38.0	34.0	34.7	32.8	7.0	18.0	38.0
Portugal	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	14.0	14.0	14.0	14.0	15.7	15.7	17.1	17.1	17.1	17.1	17.1	17.1	17.1	17.1	20.4	20.4	15.2	2.4	12.9	20.4
Spain	10.5	10.5	10.5	10.5	10.5	12.0	12.0	12.0	12.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	14.3	2.4	10.5	16.0
Sweden	37.2	37.1	36.9	36.7	48.1	48.0	47.9	47.8	47.8	46.3	40.1	37.6	37.0	39.3	39.3	39.2	39.2	40.6	40.6	39.3	39.3	39.3	39.2	40.1	40.0	40.0	40.9	3.9	36.7	48.1
United Kingdom	8.0	8.0	8.0	8.0	8.1	8.1	8.1	8.0	8.0	8.0	8.0	8.0	7.8	7.7	7.7	7.6	7.5	7.5	9.3	10.4	10.2	10.4	12.3	12.5	12.3	12.8	8.9	1.7	7.5	12.8
United States	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Average	15.4	15.4	15.8	15.9	16.6	17.8	18.7	18.3	18.7	19.7	19.0	19.2	19.1	19.0	20.2	20.0	20.6	21.7	21.7	21.6	21.5	21.5	22.6	22.7	22.9	22.9				
Std. Dev.	11.2	11.2	11.9	11.9	13.2	13.5	13.5	13.0	13.7	15.3	14.4	14.7	14.6	13.8	14.7	14.5	14.2	13.5	13.4	13.2	13.1	12.8	13.5	13.7	13.5	13.3				
Min	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Max	37.2	37.1	37.5	37.5	48.1	48.0	47.9	47.8	47.8	55.1	54.8	56.6	56.1	49.4	49.5	47.7	46.3	43.2	42.9	43.5	44.1	43.8	43.2	43.1	43.6	43.3				

Source(s): see 'Data Sources'

Table C.11. **Effective childcare leave, in weeks, by country**

	Effective childcare leave, in weeks																											Std.		
	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Ave.	Dev.	Min	Max
Australia	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Austria	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.2	7.1	6.9	6.8	6.7	6.6	6.4	6.4	6.3	2.3	3.3	0.0	7.2
Belgium	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Canada	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denmark	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.0	18.0	15.7	14.0	11.8	9.8	9.6	9.5	9.5	9.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.9	6.7	0.0	20.0
Finland	31.5	37.5	35.9	33.4	31.0	30.7	38.3	42.1	41.9	40.0	36.2	27.9	27.8	27.4	27.3	26.7	24.8	23.3	22.4	21.6	23.5	22.6	21.7	20.9	22.0	21.9	29.2	6.9	20.9	42.1
France	10.6	10.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	2.9	0.0	10.6
Germany	-	-	-	-	-	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Greece	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ireland	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Italy	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Luxembourg	0.0	0.0	0.0	48.8	47.2	46.5	45.0	44.1	42.7	41.9	42.5	42.6	41.4	41.6	39.9	39.5	38.1	38.7	38.1	37.6	37.9	38.2	37.7	37.0	36.9	35.2	36.1	13.7	0.0	48.8
Netherlands	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
New Zealand	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Norway	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.2	16.9	20.9	19.5	18.2	20.9	20.1	18.1	16.9	14.4	13.5	14.4	13.6	8.4	8.9	0.0	20.9
Portugal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Spain	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sweden	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.7	20.3	20.1	3.1	7.4	0.0	20.7
United Kingdom	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
United States	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Average	2.2	2.5	1.9	4.3	4.1	4.1	4.2	5.3	5.1	5.9	4.6	4.1	4.0	4.5	4.7	4.8	4.6	4.4	4.4	4.3	4.3	4.2	4.0	4.9	5.0	4.9				
Std. Dev.	7.5	8.8	8.2	13.2	12.6	12.4	12.9	13.7	13.3	13.2	12.3	11.2	10.9	11.0	10.9	11.1	10.5	10.4	10.4	10.2	10.2	10.1	9.8	10.2	10.3	9.9				
Min	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Max	31.5	37.5	35.9	48.8	47.2	46.5	45.0	44.1	42.7	41.9	42.5	42.6	41.4	41.6	39.9	39.5	38.1	38.7	38.1	37.6	37.9	38.2	37.7	37.0	36.9	35.2				

Source(s): see 'Data Sources'

Table C.12. **Scores on the dual earner-carer leave policy index, by country**

	Score on the dual earner-carer leave policy index																													
	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Ave.	Std. Dev.	Min	Max
Australia	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	0.0	-0.9	-0.9
Austria	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.5	0.5	0.5	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.0	0.5
Belgium	-0.2	-0.2	-0.3	-0.3	-0.3	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.0	0.2	-0.3	0.2
Canada	-0.5	-0.5	-0.5	-0.5	-0.5	-0.3	-0.3	-0.3	-0.3	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	-0.2	0.2	-0.5	0.1
Denmark	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.0	-0.1	-0.2	-0.2	-0.3	-0.3	-0.2	-0.2	-0.2	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	0.0	0.2	-0.3	0.2
Finland	0.5	0.5	0.5	0.5	0.5	0.5	0.7	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.9	0.6	0.1	0.5	0.9
France	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
Germany	-	-	-	-	-	-	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	1.3	1.3	1.2	1.2	0.1	0.6	-0.1	1.3
Greece	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.1	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	-0.3	0.1
Ireland	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.5	-0.5	-0.3	-0.4	-0.4	-0.4	-0.3	-0.3	-0.3	-0.3	-0.3	-0.4	0.0	-0.5	-0.3
Italy	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.5	0.3	0.2	0.9
Luxembourg	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9	1.9	1.9	1.9	1.9	1.8	1.9	1.9	1.9	1.8	1.8	1.7	0.9	0.9	0.0	1.9
Netherlands	-0.3	-0.3	-0.3	-0.3	-0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.3	0.6	0.6	0.0	0.2	-0.3	0.6
New Zealand	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.9	0.1	-0.9	-0.7
Norway	-0.2	-0.2	-0.1	-0.1	0.0	0.1	0.2	0.2	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.8	0.8	0.9	1.1	1.3	1.3	0.6	0.5	-0.2	1.3
Portugal	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	1.1	1.1	0.1	0.4	-0.2	1.1
Spain	-0.3	-0.3	-0.3	-0.3	-0.3	-0.2	-0.2	-0.2	-0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.3	0.3	0.0	0.2	-0.3	0.3
Sweden	0.4	0.4	0.4	0.4	0.7	0.7	0.7	0.7	0.7	0.7	0.9	0.8	0.7	0.8	0.8	0.8	0.8	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	0.9	0.3	0.4	1.2
United Kingdom	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.4	-0.3	-0.3	-0.3	-0.2	-0.2	-0.2	-0.2	-0.4	0.1	-0.5	-0.2
United States	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	0.0	-0.9	-0.9
Average	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.3	0.3	0.3				
Std. Dev.	0.4	0.4	0.4	0.4	0.5	0.4	0.5	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.8				
Min	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9				
Max	0.5	0.5	0.5	0.5	0.7	0.7	0.7	0.7	0.9	0.9	0.9	0.9	0.9	0.9	1.9	1.9	1.9	1.9	1.9	1.8	1.9	1.9	1.9	1.8	1.8	1.7				

Source(s): see 'Data Sources'

Table C.13. **Scores on the dual earner childcare policy index, by country**

	Score on the dual earner childcare policy index																													
	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Ave.	Std. Dev.	Min	Max
Australia	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.6	-0.6	-0.6	-0.5	-0.5	-0.5	-0.5	-0.5	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.3	-0.3	-0.6	0.1	-0.7	-0.3
Austria	-0.6	-0.6	-0.6	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.4	-0.4	-0.3	-0.3	-0.2	-0.2	-0.1	-0.1	-0.1	0.0	0.0	0.0	0.1	0.2	0.3	0.4	-0.2	0.3	-0.6	0.4
Belgium	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.3	0.4	0.4	0.5	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.3	0.4	-0.2	0.7
Canada	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	0.0	-0.5	-0.5
Denmark	1.1	1.1	1.2	1.3	1.3	1.4	1.4	1.4	1.8	1.9	1.8	1.4	1.7	1.7	1.8	2.3	2.4	2.4	2.4	2.4	2.5	2.5	2.5	2.5	2.5	2.5	1.9	0.5	1.1	2.5
Finland	-0.1	-0.1	-0.1	-0.1	0.0	0.0	0.0	-0.2	-0.3	-0.4	-0.3	-0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.4	0.4	0.5	0.5	0.6	0.7	0.7	0.7	0.2	0.3	-0.4	0.7
France	0.5	0.6	0.6	0.6	0.6	0.8	0.8	0.8	0.9	0.9	0.9	0.9	0.9	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.3	1.3	1.3	1.3	1.3	1.3	1.0	0.3	0.5	1.3
Germany	-	-	-	-	-	-	-0.5	-0.6	-0.6	-0.6	-0.8	-0.8	-0.6	-0.6	-0.6	-0.6	-0.6	-0.5	-0.5	-0.5	-0.4	-0.3	-0.3	-0.2	-0.1	-0.1	-0.5	0.2	-0.8	-0.1
Greece	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.7	-0.6	-0.7	-0.7	-0.6	-0.6	-0.6	-0.5	-0.5	-0.5	-0.4	-0.4	-0.5	-0.5	-0.5	-0.5	-0.5	-0.6	0.1	-0.7	-0.4
Ireland	-1.6	-1.6	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.2	-0.2	-0.2	-0.2	0.0	-0.1	-0.1	-0.9	0.7	-1.6	0.0
Italy	-0.3	-0.3	-0.3	-0.3	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.5	0.4	0.5	0.4	0.4	0.4	0.4	0.1	0.3	-0.3	0.5
Luxembourg	-0.5	-0.4	-0.4	-0.3	-0.3	-0.3	-0.2	-0.2	-0.2	-0.1	-0.1	0.0	0.0	0.1	0.3	0.4	0.5	0.6	0.5	0.5	0.7	0.8	0.8	1.1	0.9	0.8	0.2	0.5	-0.5	1.1
Netherlands	-0.9	-0.8	-0.8	-0.8	-0.8	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.5	-0.5	-0.4	-0.4	-0.4	-0.3	-0.3	-0.1	0.2	0.5	0.3	0.5	0.5	-0.4	0.5	-0.9	0.5
New Zealand	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8	-0.9	-0.9	-0.8	-0.8	-0.7	-0.7	-0.7	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.5	-0.5	-0.5	-0.4	-0.4	-0.4	-0.7	0.2	-0.9	-0.4
Norway	-0.8	-0.7	-0.6	-0.6	-0.5	-0.4	-0.3	-0.3	-0.2	0.0	0.1	0.2	0.4	0.5	0.5	0.5	0.5	0.5	0.7	0.8	0.9	1.2	1.4	1.5	1.8	1.8	0.3	0.8	-0.8	1.8
Portugal	-1.1	-1.1	-1.0	-1.0	-1.0	-0.9	-0.8	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.5	-0.4	-0.3	-0.3	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.5	0.4	-1.1	-0.1
Spain	-0.7	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.5	-0.5	-0.4	-0.4	-0.3	-0.3	0.0	0.0	0.1	0.2	0.2	0.3	0.4	0.4	0.5	0.5	0.5	0.6	0.6	-0.1	0.5	-0.7	0.6
Sweden	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.9	0.9	0.9	0.8	1.1	1.2	1.3	1.5	1.3	1.4	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.1	2.1	1.4	0.5	0.8	2.2
United Kingdom	-0.3	-0.2	-0.2	-0.2	-0.3	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	0.2	0.3	0.3	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.6	0.6	0.7	0.1	0.4	-0.3	0.7
United States	-0.9	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8	-0.7	-0.7	-0.6	-0.5	-0.5	-0.5	-0.4	-0.3	-0.5	-0.5	-0.5	-0.5	-0.5	-0.4	-0.5	-0.5	-0.5	-0.6	0.2	-0.9	-0.3
Average	-0.4	-0.4	-0.4	-0.4	-0.3	-0.3	-0.3	-0.3	-0.3	-0.2	-0.2	-0.2	-0.1	0.0	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.4	0.4	0.5	0.5	0.5				
Std. Dev.	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.9	0.9	0.9	0.9	0.9				
Min	-1.6	-1.6	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5				
Max	1.1	1.1	1.2	1.3	1.3	1.4	1.4	1.4	1.8	1.9	1.8	1.4	1.7	1.7	1.8	2.3	2.4	2.4	2.4	2.4	2.5	2.5	2.5	2.5	2.5	2.5				

Source(s): see 'Data Sources'

Table C.14. **Scores on the general family support policy index, by country**

	Score on the general family support policy index																											Std.		
	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Ave.	Dev.	Min	Max
Australia	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.7	-0.8	-0.9	-0.9	-0.9	-0.9	0.0	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.5	0.3	-0.9	0.0
Austria	0.5	0.4	0.5	0.5	0.4	0.7	0.8	0.7	0.9	0.8	0.6	0.6	0.6	0.5	0.2	0.3	0.3	0.7	0.8	0.8	0.5	0.4	0.3	0.4	0.4	0.4	0.5	0.2	0.2	0.9
Belgium	0.2	0.2	0.2	0.3	0.5	0.5	0.6	0.6	0.6	0.5	0.4	0.4	0.3	0.4	0.4	0.4	0.3	0.4	0.4	0.5	0.4	0.4	0.4	0.4	0.6	0.6	0.4	0.1	0.2	0.6
Canada	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.4	-0.4	0.0	0.1	0.1	0.0	0.0	0.0	0.0	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.2	-0.3	-0.2	-0.2	-0.2	0.2	-0.4	0.1
Denmark	-0.5	-0.4	-0.1	-0.1	-0.1	-0.1	-0.1	0.2	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.0	-0.1	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.4	-0.4	-0.4	-0.2	0.2	-0.5	0.2
Finland	0.4	0.5	0.5	0.4	0.5	0.5	0.7	0.8	0.7	0.6	0.5	0.2	0.2	0.2	0.1	0.1	0.0	0.0	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	0.2	0.3	-0.2	0.8
France	0.9	0.8	0.8	0.8	0.8	0.8	0.8	0.7	0.7	1.5	1.8	1.7	1.6	1.5	1.5	0.9	0.9	0.8	0.7	0.8	0.7	0.5	0.5	0.5	0.5	0.5	0.9	0.4	0.5	1.8
Germany	-	-	-	-	-	-	0.3	0.4	0.5	0.4	0.5	1.2	1.5	1.4	1.6	1.6	1.6	1.7	1.6	1.6	1.4	1.4	0.9	0.9	1.0	1.0	1.1	0.5	0.3	1.7
Greece	-0.6	-0.6	-0.8	-0.8	-0.8	-1.1	-0.8	-1.1	-1.0	-1.0	-1.0	-1.0	-1.1	-1.1	-1.0	-1.2	-1.2	-1.2	-1.2	-1.2	-1.2	-1.2	-1.1	-1.1	-1.1	-1.1	-1.0	0.2	-1.2	-0.6
Ireland	-0.2	-0.1	-0.2	-0.2	-0.3	-0.3	-0.3	-0.4	-0.4	-0.4	-0.4	-0.3	-0.3	-0.3	-0.1	-0.1	-0.1	0.4	0.3	0.2	-0.1	0.3	0.4	0.3	0.4	0.3	-0.1	0.3	-0.4	0.4
Italy	-0.8	-0.8	-0.8	-0.8	-0.1	-0.1	-0.2	-0.2	-0.1	-0.4	-0.4	-0.2	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.0	0.5	-0.8	0.5
Luxembourg	0.5	0.5	0.5	1.5	1.5	1.5	1.3	1.5	1.7	1.7	1.7	1.7	1.7	1.7	2.6	2.7	2.6	2.6	2.6	2.7	2.5	2.5	2.4	2.0	1.9	1.8	1.8	0.7	0.5	2.7
Netherlands	-0.4	-0.4	-0.4	-0.4	-0.4	-0.5	-0.5	-0.3	-0.3	-0.4	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.4	-0.3	-0.3	-0.3	-0.3	-0.3	-0.4	0.1	-0.5	-0.3
New Zealand	-0.7	-0.7	-0.8	-0.8	-0.8	-0.9	-0.1	-0.2	-0.3	-0.4	-0.2	-0.1	0.0	0.0	0.1	-0.4	-0.4	-0.4	-0.5	-0.5	0.3	0.3	0.4	0.3	0.3	0.3	-0.2	0.4	-0.9	0.4
Norway	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	-0.1	-0.1	0.1	0.1	0.2	0.1	0.0	0.0	0.0	-0.2	-0.2	-0.3	-0.3	-0.3	-0.3	0.0	0.2	-0.3	0.2
Portugal	-0.8	-0.7	-0.7	-0.6	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.4	-0.3	-0.2	-0.1	-0.1	-0.1	0.0	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.4	0.2	-0.8	0.0
Spain	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8	-0.5	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.3	-0.3	-0.3	-0.3	-0.3	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.5	0.2	-0.8	-0.3
Sweden	-0.2	-0.3	-0.2	-0.3	-0.4	-0.4	-0.3	-0.3	-0.3	0.0	-0.4	-0.5	-0.6	-0.5	-0.5	-0.4	-0.4	-0.4	-0.4	-0.4	-0.6	-0.5	-0.6	-0.1	-0.1	-0.1	-0.3	0.2	-0.6	0.0
United Kingdom	-0.2	-0.2	-0.3	-0.4	-0.4	-0.5	-0.5	-0.4	-0.5	-0.5	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.5	-0.5	-0.5	-0.5	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.5	0.1	-0.7	-0.2
United States	-0.7	-0.7	-0.8	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.6	-0.6	-0.6	-0.4	-0.4	-0.4	-0.4	-0.2	-0.2	-0.2	-0.2	-0.3	-0.3	-0.2	-0.2	-0.5	0.2	-0.8	-0.2
Average	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.0				
Std. Dev.	0.5	0.5	0.5	0.6	0.6	0.7	0.6	0.6	0.7	0.7	0.7	0.8	0.8	0.8	0.9	0.8	0.8	0.9	0.8	0.9	0.8	0.8	0.7	0.7	0.7	0.6				
Min	-0.8	-0.8	-0.8	-0.8	-0.8	-1.1	-0.8	-1.1	-1.0	-1.0	-1.0	-1.0	-1.1	-1.1	-1.0	-1.2	-1.2	-1.2	-1.2	-1.2	-1.2	-1.2	-1.1	-1.1	-1.1	-1.1				
Max	0.9	0.8	0.8	1.5	1.5	1.5	1.3	1.5	1.7	1.7	1.8	1.7	1.7	1.7	2.6	2.7	2.6	2.6	2.6	2.7	2.5	2.5	2.4	2.0	1.9	1.8				

Source(s): see 'Data Sources'

Table C.15. **Gender gap in the labour force participation rate (25-54 year olds), by country**

	Gender gap in the labour force participation rate (25-54 year olds)																													
	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Ave.	Std. Dev.	Min	Max
Australia	36.2	33.2	31.7	29.7	27.7	26.5	26.0	25.2	25.1	23.8	22.7	22.6	21.6	21.4	20.9	19.9	19.0	18.6	17.4	18.0	16.6	16.1	16.0	15.5	14.8	15.4	22.4	5.9	14.8	36.2
Austria	-	-	-	-	-	-	-	-	-	21.5	20.7	20.3	19.8	19.6	18.2	17.7	16.7	15.4	14.7	13.3	12.9	12.3	12.6	11.5	9.8	9.8	15.7	3.9	9.8	21.5
Belgium	36.9	35.5	34.3	33.6	32.1	31.4	29.5	27.7	25.2	24.9	24.1	23.4	22.3	21.3	18.9	19.0	20.2	18.9	17.3	17.0	15.4	14.9	14.4	13.3	12.6	11.8	22.9	7.7	11.8	36.9
Canada	24.8	23.4	22.3	20.3	19.1	17.6	16.6	16.2	15.7	15.8	15.2	14.8	14.1	13.6	12.9	12.6	12.0	11.1	10.5	10.1	10.5	9.9	9.1	9.5	8.6	8.2	14.4	4.7	8.2	24.8
Denmark	9.0	7.6	7.7	8.5	7.9	6.8	6.7	6.6	6.6	9.2	9.7	10.7	10.8	9.1	9.2	7.2	7.9	8.2	8.0	6.8	7.2	6.9	7.0	6.9	5.7	6.7	7.9	1.3	5.7	10.8
Finland	6.7	6.0	5.9	5.8	6.4	6.6	6.5	6.6	6.4	6.2	6.2	5.6	5.6	6.0	5.9	5.6	6.0	5.3	5.3	5.4	5.0	5.0	4.6	5.3	5.3	6.3	5.8	0.6	4.6	6.7
France	27.6	26.0	25.7	24.9	24.1	23.4	21.9	20.5	19.3	18.6	17.9	17.3	17.5	16.6	15.8	15.8	15.6	15.3	13.6	13.1	12.7	12.4	11.8	11.4	10.9	10.5	17.7	5.2	10.5	27.6
Germany	-	-	-	-	-	-	22.1	21.5	20.8	20.3	19.7	19.1	18.5	18.1	17.0	16.5	16.0	15.1	14.1	13.3	14.5	13.5	13.2	13.0	12.2	11.8	16.5	3.3	11.8	22.1
Greece	47.1	46.7	45.6	44.2	42.9	42.8	44.7	42.0	41.5	40.6	39.5	38.0	37.1	34.5	33.1	32.6	32.7	30.7	29.1	27.1	26.4	25.6	25.5	25.0	23.4	22.0	35.4	8.1	22.0	47.1
Ireland	55.4	53.5	50.4	50.3	48.8	46.4	44.9	41.8	39.2	37.7	36.1	33.8	32.2	31.4	29.6	27.2	25.9	23.9	24.1	23.8	22.7	21.7	19.5	19.9	18.9	18.0	33.7	12.0	18.0	55.4
Italy	47.1	45.3	43.5	42.7	41.3	40.2	39.5	38.1	39.4	38.2	36.9	36.1	35.4	34.3	33.4	32.7	31.4	30.7	30.5	27.6	27.6	27.0	26.9	25.7	25.5	25.0	34.7	6.6	25.0	47.1
Luxembourg	51.7	50.7	48.5	49.5	46.9	45.3	43.9	40.0	40.7	39.2	41.2	37.8	35.4	36.0	32.2	29.3	29.2	28.3	27.6	24.9	23.3	21.5	20.2	20.8	18.8	18.4	34.7	10.8	18.4	51.7
Netherlands	47.3	46.2	39.7	37.5	37.1	34.9	32.8	31.1	28.9	27.8	26.3	25.7	23.8	23.3	21.9	20.5	20.8	18.8	17.7	16.9	15.8	15.1	13.6	12.8	12.2	11.1	25.4	10.4	11.1	47.3
New Zealand	-	28.1	26.5	25.7	25.4	24.3	23.3	22.8	22.7	21.2	20.2	18.7	19.5	18.9	17.5	17.6	16.7	16.5	16.1	16.4	16.1	15.9	15.6	14.4	14.0	14.9	19.6	4.2	14.0	28.1
Norway	20.0	14.6	14.4	14.1	14.4	13.1	12.4	12.1	10.9	11.1	10.8	10.4	9.3	9.2	8.7	7.9	8.1	8.1	7.6	7.3	7.0	7.2	6.9	5.8	5.7	5.8	10.1	3.5	5.7	20.0
Portugal	32.2	31.5	29.9	28.5	27.8	25.9	23.0	23.2	21.4	19.9	19.1	18.3	17.3	18.0	17.2	15.1	14.4	14.1	12.6	11.6	10.7	10.2	10.0	10.2	9.0	7.6	18.4	7.5	7.6	32.2
Spain	59.4	58.0	53.4	51.0	49.2	47.5	45.5	42.6	40.8	38.5	36.9	35.4	33.9	33.3	32.2	30.2	30.4	28.2	26.1	24.2	23.4	21.4	20.0	17.9	15.6	14.2	35.0	13.0	14.2	59.4
Sweden	6.4	5.4	4.4	3.9	4.0	4.0	3.9	4.2	4.1	4.4	4.8	4.4	4.7	5.2	4.8	5.1	4.9	4.5	4.7	4.8	5.8	6.3	5.8	5.5	5.7	6.3	4.9	0.8	3.9	6.4
United Kingdom	27.6	26.1	25.0	23.8	22.9	21.9	21.6	20.5	19.5	18.9	18.7	17.4	16.6	16.2	15.7	15.7	15.0	14.5	14.8	14.1	13.8	13.8	14.1	13.5	13.0	12.7	18.0	4.4	12.7	27.6
United States	24.3	23.0	21.8	20.9	20.0	19.4	19.0	18.4	18.0	16.5	16.0	15.6	15.2	15.3	15.0	14.9	14.9	15.2	14.9	15.2	15.2	15.1	15.5	14.7	14.1	14.0	17.0	2.9	14.0	24.3
Average	32.9	31.2	29.5	28.6	27.7	26.6	25.5	24.3	23.5	22.7	22.1	21.3	20.5	20.1	19.0	18.2	17.9	17.1	16.3	15.5	15.1	14.6	14.1	13.6	12.8	12.5				
Std. Dev.	16.8	16.4	15.3	15.1	14.5	14.1	13.5	12.4	12.2	11.2	11.0	10.4	9.9	9.6	9.0	8.6	8.4	7.9	7.7	7.1	6.7	6.3	6.1	5.9	5.7	5.3				
Min	6.4	5.4	4.4	3.9	4.0	4.0	3.9	4.2	4.1	4.4	4.8	4.4	4.7	5.2	4.8	5.1	4.9	4.5	4.7	4.8	5.0	5.0	4.6	5.3	5.3	5.8				
Max	59.4	58.0	53.4	51.0	49.2	47.5	45.5	42.6	41.5	40.6	41.2	38.0	37.1	36.0	33.4	32.7	32.7	30.7	30.5	27.6	27.6	27.0	26.9	25.7	25.5	25.0				

Source(s): see 'Data Sources'

Table C.16. **Gender gap in the labour force participation rate (25-34 year olds), by country**

	Gender gap in the labour force participation rate (25-34 year olds)																													
	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Ave.	Std. Dev.	Min	Max
Australia	37.1	34.4	32.9	31.6	29.9	28.7	28.6	28.0	28.0	26.3	25.2	25.5	24.5	23.8	23.5	22.4	20.5	20.9	20.2	20.7	18.7	18.8	19.3	18.3	17.9	18.4	24.8	5.5	17.9	37.1
Austria	-	-	-	-	-	-	-	-	-	16.0	15.1	14.7	15.2	15.6	14.0	14.4	13.0	13.3	12.6	12.0	13.0	13.9	15.3	12.9	10.8	9.9	13.6	1.7	9.9	16.0
Belgium	21.9	21.4	20.6	20.7	18.9	21.0	18.3	16.4	14.8	14.5	14.5	13.0	12.8	13.2	11.4	11.9	12.5	12.0	11.4	11.7	10.5	9.1	10.3	9.1	8.8	8.8	14.2	4.3	8.8	21.9
Canada	22.1	20.3	19.7	19.0	17.8	16.4	15.3	15.3	15.8	15.5	14.8	14.2	13.5	13.4	12.4	12.1	12.0	11.6	11.1	10.2	10.6	10.3	10.0	10.4	8.9	9.0	13.9	3.7	8.9	22.1
Denmark	5.7	5.1	5.3	7.1	4.9	5.5	6.3	6.0	7.0	10.2	13.7	12.7	11.7	9.3	11.6	10.0	9.1	10.4	11.1	8.0	8.9	8.7	9.2	8.1	5.6	7.2	8.4	2.5	4.9	13.7
Finland	10.4	8.4	8.5	8.8	9.9	11.3	12.1	12.5	12.1	12.9	15.0	13.6	12.6	13.3	13.1	13.4	13.6	11.5	12.6	13.0	11.3	11.6	11.5	12.2	11.1	13.4	11.9	1.7	8.4	15.0
France	24.4	22.8	23.1	22.1	22.1	20.6	19.5	18.5	18.0	17.4	16.6	16.1	17.0	16.0	15.2	15.4	15.6	15.7	14.1	14.4	13.9	14.3	13.4	12.9	12.9	12.4	17.1	3.5	12.4	24.4
Germany	-	-	-	-	-	-	18.5	18.0	17.5	17.1	17.0	16.9	17.1	16.8	16.3	16.4	16.1	15.2	14.1	12.7	16.6	14.6	14.2	14.4	12.9	12.8	15.8	1.8	12.7	18.5
Greece	44.5	43.0	41.7	39.4	37.1	36.0	37.3	34.7	34.4	34.1	32.2	31.0	29.5	26.7	25.2	23.6	23.4	23.3	21.5	20.2	19.0	18.0	19.2	18.9	17.1	16.5	28.8	8.8	16.5	44.5
Ireland	48.2	44.8	39.7	38.6	37.1	34.0	32.5	28.6	27.2	24.8	24.2	22.2	20.8	20.8	19.3	17.8	17.5	15.8	17.4	16.9	16.1	14.9	13.6	14.8	13.8	13.2	24.4	10.4	13.2	48.2
Italy	37.0	35.0	33.4	31.5	30.1	29.2	28.8	28.0	30.9	29.9	29.0	28.0	27.5	26.1	25.3	24.6	23.2	22.7	23.0	20.9	20.5	20.7	20.9	19.9	19.2	19.8	26.3	5.1	19.2	37.0
Luxembourg	40.5	39.7	36.1	38.2	35.9	33.2	34.0	32.5	32.0	30.3	32.2	29.7	27.5	27.1	23.4	18.1	19.6	17.8	19.4	16.9	15.0	12.5	9.3	12.5	9.2	12.3	25.2	10.1	9.2	40.5
Netherlands	-	-	35.2	32.3	31.9	29.5	27.5	25.6	22.4	21.5	19.3	18.7	16.9	16.5	16.4	15.0	15.1	14.1	13.1	12.5	11.2	10.9	10.4	9.6	8.4	7.7	18.4	8.1	7.7	35.2
New Zealand	-	33.9	32.9	31.8	32.3	32.1	30.0	28.5	28.2	26.4	25.9	23.6	24.4	24.3	22.0	23.4	23.3	23.0	21.3	22.1	19.8	19.3	19.1	18.4	18.5	21.4	25.0	4.9	18.4	33.9
Norway	21.2	14.8	14.7	16.3	16.4	14.6	13.3	12.5	11.8	11.1	11.3	11.6	10.6	10.0	10.2	9.3	10.0	9.9	8.8	8.1	8.1	8.1	7.3	4.6	6.1	6.5	11.0	3.7	4.6	21.2
Portugal	24.6	23.6	22.0	20.7	19.3	18.0	15.9	14.8	15.1	13.8	12.9	10.6	10.3	12.0	12.2	10.1	9.1	8.3	6.3	6.2	5.9	6.1	5.4	6.1	5.1	3.8	12.2	6.2	3.8	24.6
Spain	49.4	46.4	40.6	38.6	36.3	34.9	33.0	30.7	28.3	26.9	25.2	23.5	22.4	21.8	20.8	19.2	20.2	18.2	16.1	15.1	15.0	13.5	12.9	11.1	9.5	8.3	24.5	11.3	8.3	49.4
Sweden	6.0	4.9	4.5	3.8	4.3	5.1	5.2	5.6	6.2	6.7	7.4	7.0	7.4	8.2	7.1	6.8	7.5	6.9	6.6	7.1	7.6	7.5	7.3	7.2	8.0	7.8	6.5	1.2	3.8	8.2
United Kingdom	33.4	31.3	30.3	28.0	26.3	25.9	25.9	24.9	23.4	23.3	22.5	21.1	20.1	19.9	18.2	18.5	18.3	17.7	17.9	16.9	16.5	16.5	17.6	16.7	16.3	16.0	21.7	5.2	16.0	33.4
United States	23.8	22.9	22.2	21.6	21.0	20.7	20.5	19.9	20.0	18.6	18.0	18.0	16.9	16.9	16.9	17.3	17.2	17.3	17.8	18.4	17.8	17.3	17.7	16.3	15.3	15.0	18.7	2.3	15.0	23.8
Average	28.1	26.6	25.7	25.0	24.0	23.1	22.2	21.1	20.7	19.9	19.6	18.6	17.9	17.6	16.7	16.0	15.8	15.3	14.8	14.2	13.8	13.3	13.2	12.7	11.8	12.0				
Std. Dev.	14.0	13.4	12.0	11.2	10.7	9.9	9.5	8.7	8.5	7.6	7.0	6.7	6.4	6.0	5.3	5.1	5.0	4.9	4.9	4.9	4.4	4.3	4.6	4.5	4.5	4.8				
Min	5.7	4.9	4.5	3.8	4.3	5.1	5.2	5.6	6.2	6.7	7.4	7.0	7.4	8.2	7.1	6.8	7.5	6.9	6.3	6.2	5.9	6.1	5.4	4.6	5.1	3.8				
Max	49.4	46.4	41.7	39.4	37.1	36.0	37.3	34.7	34.4	34.1	32.2	31.0	29.5	27.1	25.3	24.6	23.4	23.3	23.0	22.1	20.5	20.7	20.9	19.9	19.2	21.4				

Source(s): see 'Data Sources'

Table C.17. **Gender gap in usual weekly working hours (25-54 year olds), by country**

	Gender gap in usual weekly working hours (25-54 year olds)																													
	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Ave.	Std. Dev.	Min	Max
Australia	12.7	13.0	13.2	13.3	13.4	13.1	12.6	12.8	12.7	13.0	12.8	12.3	12.4	12.4	12.5	12.1	11.8	11.6	11.6	11.3	11.2	11.0	10.8	10.8	10.5	10.4	12.1	0.9	10.4	13.4
Austria	-	-	-	-	-	-	-	-	-	-	5.6	5.8	5.8	6.2	6.7	7.1	6.8	7.5	7.6	10.5	10.6	10.7	10.6	10.2	10.4	10.2	8.3	2.1	5.6	10.7
Belgium	6.5	6.4	6.9	6.4	6.9	6.8	7.1	7.3	7.3	7.4	7.3	7.4	7.4	7.7	8.2	8.0	8.1	8.1	8.2	8.4	8.3	8.2	8.0	7.9	7.5	7.7	7.5	0.6	6.4	8.4
Canada	8.9	8.7	8.4	8.6	8.2	8.1	8.0	8.2	8.1	8.2	8.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8.3	0.3	8.0	8.9
Denmark	9.9	8.8	8.0	7.9	7.3	6.8	6.4	7.1	6.6	6.5	6.6	6.0	5.7	5.6	5.4	6.4	6.0	5.5	5.8	5.9	5.8	5.8	4.5	4.0	4.1	4.3	6.3	1.4	4.0	9.9
Finland	-	-	-	-	-	-	-	-	-	-	3.9	4.0	4.4	4.4	4.4	4.2	4.3	4.1	4.2	4.1	4.1	4.0	4.0	3.8	3.7	3.9	4.1	0.2	3.7	4.4
France	5.8	5.8	6.2	6.3	6.1	6.1	6.2	6.3	6.5	6.5	6.5	6.6	6.7	6.6	6.6	6.2	5.9	5.6	6.9	7.0	7.0	6.8	6.8	6.5	6.6	6.4	6.4	0.4	5.6	7.0
Germany	-	-	-	-	-	-	7.6	7.8	7.9	8.0	8.3	8.7	9.0	9.4	9.7	9.9	10.1	10.0	10.0	10.2	10.8	10.7	10.7	10.5	10.5	10.4	9.5	1.1	7.6	10.8
Greece	3.6	3.7	4.0	4.3	4.2	4.0	4.1	4.4	4.4	4.6	5.1	5.0	5.2	5.2	5.0	4.6	4.5	4.8	4.8	4.9	5.1	5.5	5.4	5.2	5.4	5.1	4.7	0.5	3.6	5.5
Ireland	10.5	11.0	10.8	11.6	11.5	11.5	11.0	11.4	11.4	11.1	11.7	11.2	11.0	11.0	10.5	10.1	10.3	10.0	9.8	9.9	9.8	9.2	9.3	9.2	8.7	8.4	10.5	1.0	8.4	11.7
Italy	4.6	4.7	4.8	4.9	5.3	5.1	5.3	5.4	5.6	5.6	5.7	5.8	6.0	6.1	6.3	6.3	6.4	6.2	6.4	8.0	7.9	7.8	8.0	8.0	7.8	7.8	6.2	1.1	4.6	8.0
Luxembourg	5.8	5.7	5.8	5.6	5.9	5.8	6.8	6.1	6.7	7.2	7.7	6.9	6.8	7.8	7.5	7.6	8.4	7.6	7.9	7.5	7.8	6.8	6.5	7.0	8.2	8.1	7.0	0.9	5.6	8.4
Netherlands	15.9	-	14.4	14.4	14.4	14.2	13.8	14.1	14.4	14.8	14.5	14.3	14.0	13.7	13.6	13.7	13.7	13.6	13.5	13.5	13.4	13.2	13.0	12.8	12.6	12.6	13.8	0.7	12.6	15.9
New Zealand	-	13.9	13.8	13.6	13.5	13.7	13.1	13.1	12.9	13.7	13.2	13.8	13.0	13.1	12.7	12.3	12.1	11.8	11.8	11.5	11.3	10.8	10.9	10.7	10.3	9.9	12.4	1.2	9.9	13.9
Norway	-	-	-	-	-	-	-	-	-	-	8.7	8.2	8.1	7.7	7.6	7.0	6.6	6.6	6.4	6.3	6.2	6.4	5.9	5.5	5.3	5.2	6.7	1.1	5.2	8.7
Portugal	-	3.2	2.8	3.5	4.2	4.0	4.4	5.2	5.2	5.8	5.9	5.4	5.4	4.9	4.4	4.2	3.9	3.8	3.9	3.9	3.8	3.4	3.4	3.5	3.5	3.1	4.2	0.9	2.8	5.9
Spain	-	-	3.9	4.2	4.0	4.4	4.0	4.5	4.6	4.7	5.0	5.2	5.5	5.4	5.5	5.4	5.6	5.1	5.2	5.4	6.6	6.6	6.5	6.4	6.2	6.1	5.3	0.9	3.9	6.6
Sweden	-	-	-	-	-	-	-	-	-	-	6.7	6.3	6.1	5.5	5.8	5.5	5.2	4.8	4.5	4.5	4.7	4.7	4.6	4.4	4.3	4.1	5.1	0.8	4.1	6.7
United Kingdom	16.9	17.1	17.5	17.3	16.9	16.5	16.1	15.6	15.4	15.2	15.2	14.9	14.4	14.3	13.7	13.5	13.2	12.6	12.4	12.2	11.6	11.3	11.2	10.8	10.5	10.5	14.1	2.3	10.5	17.5
United States	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Average	9.2	8.5	8.6	8.7	8.7	8.6	8.4	8.6	8.6	8.8	8.3	8.2	8.2	8.2	8.1	8.0	7.9	7.7	7.8	8.0	8.1	7.9	7.8	7.6	7.6	7.5				
Std. Dev.	4.5	4.4	4.6	4.5	4.4	4.3	3.9	3.8	3.7	3.7	3.4	3.5	3.3	3.3	3.2	3.2	3.2	3.1	3.0	3.0	2.9	2.8	2.9	2.9	2.8	2.8				
Min	3.6	3.2	2.8	3.5	4.0	4.0	4.0	4.4	4.4	4.6	3.9	4.0	4.4	4.4	4.4	4.2	3.9	3.8	3.9	3.9	3.8	3.4	3.4	3.5	3.5	3.1				
Max	16.9	17.1	17.5	17.3	16.9	16.5	16.1	15.6	15.4	15.2	15.2	14.9	14.4	14.3	13.7	13.7	13.7	13.6	13.5	13.5	13.4	13.2	13.0	12.8	12.6	12.6				

Source(s): see 'Data Sources'

Table C.18. **Gender gap in the proportion of employees in 'female-type' occupations (all ages), by country**

	Gender gap in the proportion of employees in 'female-type' occupations (all ages)																											Std.		
	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Ave.	Dev.	Min	Max
Australia	-	-	-	-	-	-	-	-	-	-	-	-	13.7	13.8	14.1	13.7	18.5	18.0	17.6	16.6	15.7	15.2	14.8	14.9	-	-	15.5	1.7	13.7	18.5
Austria	-	-	-	-	-	-	-	-	-	-	24.3	26.7	26.4	26.1	26.5	26.3	25.6	27.5	27.8	25.5	26.1	25.7	26.6	28.6	28.3	28.0	26.6	1.2	24.3	28.6
Belgium	-	-	-	-	-	-	-	-	10.1	10.2	10.4	10.6	10.5	11.0	12.1	10.1	11.7	9.9	12.2	10.7	9.8	10.0	10.0	11.2	10.9	10.4	10.6	0.7	9.8	12.2
Canada	-	-	-	-	-	21.9	21.7	20.9	20.5	19.7	19.1	18.3	18.7	17.7	18.0	17.9	18.3	17.0	17.1	17.3	17.0	16.3	16.0	15.5	-	-	18.4	1.9	15.5	21.9
Denmark	-	-	-	-	-	-	-	33.1	32.1	33.0	34.8	32.7	30.2	31.3	32.3	30.8	31.2	30.6	28.6	29.4	27.4	27.2	27.7	27.2	25.5	26.2	30.1	2.7	25.5	34.8
Finland	-	-	-	-	-	-	-	-	-	-	-	-	26.6	26.8	24.8	26.0	25.1	30.2	29.5	28.6	28.4	28.6	28.7	28.6	27.9	27.3	27.7	1.6	24.8	30.2
France	-	-	-	-	-	-	-	32.5	32.9	33.2	32.5	33.2	33.0	32.6	32.5	32.4	31.9	31.6	28.9	28.8	27.8	27.6	27.7	26.9	26.0	25.5	30.4	2.8	25.5	33.2
Germany	-	-	-	-	-	-	-	28.6	28.4	28.7	28.4	28.5	28.3	28.0	28.0	27.2	27.1	27.1	26.3	25.9	25.7	25.7	25.7	25.4	25.0	24.7	27.0	1.4	24.7	28.7
Greece	-	-	-	-	-	-	-	7.5	8.2	8.0	8.4	7.9	8.6	7.9	9.2	9.6	10.4	9.5	9.0	10.1	9.5	10.2	10.2	10.0	9.0	8.5	9.0	0.9	7.5	10.4
Ireland	-	-	-	-	-	-	-	32.1	33.1	33.5	32.7	31.7	33.7	31.3	32.3	32.9	32.3	32.1	32.7	31.7	33.3	33.2	33.2	32.5	31.4	29.4	32.4	1.0	29.4	33.7
Italy	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luxembourg	-	-	-	-	-	-	-	-	26.2	24.3	25.5	20.5	23.5	22.2	20.3	21.6	22.2	19.9	17.4	17.2	17.0	13.5	14.4	13.6	13.9	15.8	19.4	4.2	13.5	26.2
Netherlands	-	-	-	-	-	-	-	29.2	28.7	27.9	29.4	28.4	27.8	26.7	25.4	26.5	26.4	25.7	25.2	25.4	25.9	24.9	24.8	25.2	25.2	25.0	26.5	1.6	24.8	29.4
New Zealand	-	-	-	-	-	-	-	19.5	19.3	18.9	19.0	19.0	18.9	18.4	16.8	15.1	15.4	16.3	16.4	16.8	16.6	16.5	15.4	15.3	-	-	17.3	1.6	15.1	19.5
Norway	-	-	-	-	-	-	-	-	-	-	-	23.3	22.7	21.2	20.2	20.4	22.5	23.3	23.0	22.4	22.5	22.0	21.2	20.9	21.1	20.8	21.8	1.1	20.2	23.3
Portugal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Spain	-	-	-	-	-	-	-	21.8	19.6	20.8	20.1	20.2	19.8	20.7	22.6	22.4	23.0	22.9	23.8	23.9	23.4	23.7	23.6	23.7	22.8	21.5	22.1	1.5	19.6	23.9
Sweden	-	-	-	-	-	-	-	-	-	-	-	-	21.5	21.4	23.3	22.4	22.0	21.1	20.9	20.1	20.2	20.2	20.5	20.4	19.7	19.3	20.9	1.1	19.3	23.3
United Kingdom	-	-	-	-	-	-	-	34.7	34.1	33.9	34.3	33.4	34.1	34.3	33.9	33.4	38.4	37.2	37.5	37.2	36.3	34.8	34.6	34.0	33.8	32.2	34.9	1.6	32.2	38.4
United States	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13.2	13.2	12.8	12.6	12.4	12.0	-	-	12.7	0.5	12.0	13.2
Average	-	-	-	-	-	-	-	26.0	24.4	24.3	24.5	23.9	23.4	23.0	23.1	22.9	23.6	23.5	22.6	22.3	22.0	21.5	21.5	21.4	22.9	22.5				
Std. Dev.	-	-	-	-	-	-	-	8.5	8.9	9.0	8.7	8.2	7.7	7.7	7.5	7.6	7.5	7.8	7.7	7.5	7.6	7.6	7.7	7.6	7.4	7.0				
Min	-	-	-	-	-	-	-	7.5	8.2	8.0	8.4	7.9	8.6	7.9	9.2	9.6	10.4	9.5	9.0	10.1	9.5	10.0	10.0	10.0	9.0	8.5				
Max	-	-	-	-	-	-	-	34.7	34.1	33.9	34.8	33.4	34.1	34.3	33.9	33.4	38.4	37.2	37.5	37.2	36.3	34.8	34.6	34.0	33.8	32.2				

Source(s): see 'Data Sources'

Table C.19. **Female share of employment as mangers, legislators and senior officials (all ages), by country**

	Female share of employment as mangers, legislators and senior officials (all ages) (%)																													
	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Ave.	Std. Dev.	Min	Max
Australia	-	-	-	-	-	-	-	-	-	-	-	-	31.5	31.4	31.3	32.9	32.1	32.4	33.0	34.1	35.0	35.1	35.3	36.7	-	-	33.4	1.8	31.3	36.7
Austria	-	-	-	-	-	-	-	-	-	-	26.6	26.0	28.4	28.7	27.6	30.0	30.2	29.3	27.4	27.2	27.3	28.5	26.5	28.3	27.0	28.7	28.0	1.2	26.0	30.2
Belgium	-	-	-	-	-	-	-	-	29.7	30.1	31.1	28.6	30.0	30.8	31.6	31.7	33.1	31.5	28.9	29.9	31.5	31.5	33.8	32.6	34.1	34.4	31.4	1.7	28.6	34.4
Canada	-	-	-	-	-	33.6	33.1	34.3	34.3	35.2	34.4	36.3	36.8	38.2	35.2	35.5	34.9	34.1	35.7	36.5	35.9	36.2	36.9	36.0	-	-	35.4	1.3	33.1	38.2
Denmark	-	-	-	-	-	-	-	18.5	20.5	23.5	19.4	23.3	23.9	21.7	21.9	24.1	21.2	21.4	26.5	24.2	24.8	24.9	28.7	24.1	25.3	22.8	23.2	2.5	18.5	28.7
Finland	-	-	-	-	-	-	-	-	-	-	-	-	23.1	21.2	28.3	26.7	27.9	28.4	28.9	28.4	29.9	29.8	28.9	29.8	29.8	30.7	28.0	2.7	21.2	30.7
France	-	-	-	-	-	-	-	31.5	24.4	27.5	36.0	35.4	33.7	34.7	33.6	34.8	35.4	36.3	35.3	35.8	37.5	37.8	37.7	38.4	38.1	38.6	34.9	3.7	24.4	38.6
Germany	-	-	-	-	-	-	-	25.5	25.7	24.8	25.8	26.7	26.4	26.4	26.1	27.1	26.8	27.1	28.0	27.6	28.1	28.5	28.9	29.3	29.8	30.0	27.3	1.5	24.8	30.0
Greece	-	-	-	-	-	-	-	22.7	22.9	23.1	22.5	23.5	22.3	25.2	23.8	25.2	24.9	25.1	26.3	26.2	26.6	26.9	28.0	28.4	29.7	29.7	25.4	2.4	22.3	29.7
Ireland	-	-	-	-	-	-	-	23.4	24.7	25.5	27.6	28.4	29.9	24.8	25.0	27.4	28.6	28.4	29.7	29.8	31.6	31.8	32.6	34.2	40.0	39.4	29.6	4.6	23.4	40.0
Italy	-	-	-	-	-	-	-	16.5	14.9	15.7	15.8	16.7	17.2	17.6	18.3	14.4	19.0	20.2	21.1	33.5	32.7	33.3	33.9	33.6	34.0	32.9	23.2	8.2	14.4	34.0
Luxembourg	-	-	-	-	-	-	-	-	28.8	27.6	23.5	23.5	29.5	20.9	29.6	27.4	29.8	21.8	28.0	26.4	23.7	26.6	20.9	27.4	19.8	25.0	25.6	3.3	19.8	29.8
Netherlands	-	-	-	-	-	-	-	17.8	17.3	20.3	20.9	21.5	21.3	24.0	23.5	25.1	26.5	25.7	25.6	25.8	25.7	27.0	28.1	28.1	28.5	28.9	24.3	3.5	17.3	28.9
New Zealand	-	-	-	-	-	-	-	31.5	30.3	33.8	34.2	34.3	34.7	36.6	37.5	38.2	38.6	38.6	36.4	36.3	36.5	39.9	40.0	40.0	-	-	36.3	2.9	30.3	40.0
Norway	-	-	-	-	-	-	-	-	-	-	-	26.0	27.0	26.1	27.9	25.0	25.5	27.8	28.6	29.2	30.5	33.0	31.6	31.8	34.4	34.8	29.3	3.2	25.0	34.8
Portugal	-	-	-	-	-	-	-	37.2	32.5	29.2	30.6	33.0	33.2	31.8	31.3	31.8	31.0	29.7	32.4	34.3	34.6	33.5	32.0	31.8	31.6	32.5	32.3	1.8	29.2	37.2
Spain	-	-	-	-	-	-	-	30.0	32.8	31.8	31.0	31.7	30.8	31.6	30.2	31.5	32.4	31.5	29.6	31.5	32.0	31.6	31.9	32.2	33.1	34.1	31.6	1.1	29.6	34.1
Sweden	-	-	-	-	-	-	-	-	-	-	-	-	27.1	29.8	28.5	31.4	30.6	31.0	30.1	30.1	29.7	32.2	31.5	32.1	32.4	31.4	30.6	1.5	27.1	32.4
United Kingdom	-	-	-	-	-	-	-	33.2	34.3	33.8	33.7	33.8	33.9	33.8	34.8	34.7	31.0	32.5	32.5	33.1	34.4	34.7	34.6	35.1	35.7	35.8	34.0	1.2	31.0	35.8
United States	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	42.1	42.1	42.5	41.8	42.6	42.7	-	-	42.3	0.3	41.8	42.7
Average	-	-	-	-	-	-	-	26.8	26.7	27.3	27.5	28.0	28.5	28.2	28.7	29.2	29.5	29.1	30.3	31.1	31.5	32.2	32.2	32.6	31.5	31.9				
Std. Dev.	-	-	-	-	-	-	-	7.1	6.2	5.6	6.1	5.6	5.2	5.7	4.9	5.4	4.8	4.9	4.7	4.5	4.8	4.5	5.0	4.6	5.0	4.4				
Min	-	-	-	-	-	-	-	16.5	14.9	15.7	15.8	16.7	17.2	17.6	18.3	14.4	19.0	20.2	21.1	24.2	23.7	24.9	20.9	24.1	19.8	22.8				
Max	-	-	-	-	-	-	-	37.2	34.3	35.2	36.0	36.3	36.8	38.2	37.5	38.2	38.6	38.6	42.1	42.1	42.5	41.8	42.6	42.7	40.0	39.4				

Source(s): see 'Data Sources'

Table C.20. **Gender gap in the proportion of employees with top quintile annual earnings (dependent employees, 25-54 year olds, five-year intervals), by country**

	Gender gap in the proportion of employees with top quintile annual earnings (dependent employees, 25-54 year olds, five-year intervals)									
	1985-1989	1990-1994	1995-1999	2000-2004	2005-2009	2010	Ave.	Std. Dev.	Min	Max
Australia	24.6	-	20.5	19.2	-	-	21.4	2.8	19.2	24.6
Austria	-	17.9	19.0	19.8	-		18.9	0.9	17.9	19.8
Belgium	-	18.5	21.9	24.7	-		21.7	3.1	18.5	24.7
Canada	24.6	23.5	22.1	19.8	16.8	16.5	20.6	3.4	16.5	24.6
Denmark	26.5	25.0	22.2	19.5	-	-	23.3	3.1	19.5	26.5
Finland	23.1	19.5	21.7	21.0	20.3	18.9	20.8	1.5	18.9	23.1
France	17.9	14.9	-	15.1	15.7	-	15.9	1.4	14.9	17.9
Germany	-	20.9	-	22.6	22.1	22.1	21.9	0.7	20.9	22.6
Greece	-	-	18.9	13.7	12.1	11.8	14.1	3.3	11.8	18.9
Ireland	-	21.1	21.8	18.8	14.5	17.0	18.6	3.0	14.5	21.8
Italy	18.5	15.9	18.7	14.8	14.5	16.4	16.5	1.8	14.5	18.7
Luxembourg	19.1	15.5	18.7	17.0	15.1	16.1	16.9	1.7	15.1	19.1
Netherlands	21.0	25.1	27.6	26.0	25.5	25.6	25.1	2.2	21.0	27.6
New Zealand	-	-	-	-	-	-	-	-	-	-
Norway	29.9	28.7	29.1	26.5	-	-	28.5	1.5	26.5	29.9
Portugal	-	-	-	-	-	-	-	-	-	-
Spain	-	10.6	9.7	9.3	9.3	8.2	9.4	0.9	8.2	10.6
Sweden	28.3	27.7	26.5	22.8	20.5	-	25.2	3.4	20.5	28.3
United Kingdom	26.0	26.1	23.3	19.8	19.1	15.5	21.6	4.2	15.5	26.1
United States	24.8	19.5	17.8	17.3	16.0	14.4	18.3	3.6	14.4	24.8
Average	23.7	20.6	21.2	19.3	17.0	16.6				
Std. Dev.	3.9	5.1	4.5	4.4	4.4	4.7				
Min	17.9	10.6	9.7	9.3	9.3	8.2				
Max	29.9	28.7	29.1	26.5	25.5	25.6				

Source(s): see 'Data Sources'

Table C.21. **Gender gap in the labour force participation rate for individuals with low education (ISCED levels 0-2) (25-49 year olds), by country**

	Gender gap in the labour force participation rate for individuals with low education (ISCED levels 0-2) (25-49 year olds)																											Std.		
	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Ave.	Dev.	Min	Max
Australia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Austria	-	-	-	-	-	-	-	-	-	-	23.3	23.7	23.6	24.4	22.4	21.7	20.8	20.1	21.8	13.8	19.6	18.2	17.1	14.3	15.7	14.6	19.7		13.8	24.4
Belgium	-	-	-	-	-	-	-	38.9	36.7	36.8	35.4	34.8	34.7	33.6	31.4	31.0	34.9	32.5	29.0	27.8	29.0	27.2	26.5	25.5	26.2	24.4	31.4		24.4	38.9
Canada	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-
Denmark	-	-	-	-	-	-	-	11.5	6.3	15.2	15.0	20.2	15.6	18.9	15.4	9.2	13.2	21.1	14.7	8.6	14.1	12.5	12.2	12.5	10.7	13.3	13.7		6.3	21.1
Finland	-	-	-	-	-	-	-	-	-	-	4.9	4.7	3.7	3.8	5.6	6.6	6.8	5.6	8.7	4.5	7.7	8.2	6.7	8.4	8.7	11.4	6.6		3.7	11.4
France	-	-	-	-	-	-	-	-	26.5	25.5	24.8	23.7	24.0	23.0	22.2	22.7	22.3	22.3	20.3	19.7	19.5	18.5	18.2	19.4	18.8	17.8	21.6		17.8	26.5
Germany	-	-	-	-	-	-	-	31.9	32.3	31.3	31.9	29.6	29.9	-	27.1	26.9	25.6	26.1	25.7	27.1	25.0	24.5	24.0	24.0	23.1	23.8	27.2		23.1	32.3
Greece	-	-	-	-	-	-	-	49.0	49.0	48.2	48.1	46.7	46.3	44.9	42.8	43.0	44.0	41.4	39.7	39.9	39.0	39.5	39.1	38.8	37.0	35.5	42.7		35.5	49.0
Ireland	-	-	-	-	-	-	-	54.5	51.7	51.5	49.0	48.4	45.9	-	41.9	41.5	39.0	37.6	37.9	39.3	37.3	36.4	33.6	33.3	33.2	33.7	41.4		33.2	54.5
Italy	-	-	-	-	-	-	-	49.5	49.9	48.7	47.2	47.3	47.1	46.5	47.1	46.9	44.6	44.1	44.0	41.8	42.2	42.0	41.7	40.5	40.3	39.3	44.8		39.3	49.9
Luxembourg	-	-	-	-	-	-	-	44.2	48.6	45.2	44.9	46.0	41.1	-	40.7	33.9	35.0	32.9	32.8	31.7	29.0	28.3	27.4	28.5	24.6	21.5	35.4		21.5	48.6
Netherlands	-	-	-	-	-	-	-	-	-	-	-	36.0	35.0	33.7	32.9	32.7	30.5	29.4	27.2	27.2	25.9	26.5	24.7	22.9	23.5	22.5	28.7		22.5	36.0
New Zealand	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-
Norway	-	-	-	-	-	-	-	-	-	-	-	17.4	16.5	18.9	13.8	13.3	16.2	12.9	17.3	14.4	14.9	11.1	12.3	10.4	9.0	10.5	13.9		9.0	18.9
Portugal	-	-	-	-	-	-	-	28.9	26.4	25.4	24.0	23.7	22.4	21.5	20.9	19.2	18.4	18.6	16.7	16.1	14.9	14.4	14.4	14.5	13.8	12.4	19.3		12.4	28.9
Spain	-	-	-	-	-	-	-	50.9	50.8	48.0	46.9	46.4	45.1	44.6	44.0	42.1	42.4	40.0	38.2	36.9	35.8	32.5	30.1	27.1	24.2	22.2	39.4		22.2	50.9
Sweden	-	-	-	-	-	-	-	-	-	-	9.7	10.7	11.8	12.7	11.1	12.2	13.1	11.7	11.6	14.0	15.7	14.2	13.4	14.4	15.5	16.7	13.0		9.7	16.7
United Kingdom	-	-	-	-	-	-	-	24.2	23.5	23.6	22.8	21.1	20.2	-	18.9	19.0	18.3	17.5	19.0	18.0	18.5	19.6	20.3	20.3	20.2	20.7	20.3		17.5	24.2
United States	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Average	-	-	-	-	-	-	-	38.4	36.5	36.3	30.6	30.0	28.9	27.2	27.4	26.4	26.6	25.9	25.3	23.8	24.3	23.4	22.6	22.2	21.5	21.3				
Std. Dev.	-	-	-	-	-	-	-	13.9	14.9	12.7	15.1	14.1	13.7	13.6	13.1	12.9	12.2	11.5	10.8	11.8	10.3	10.5	10.1	9.8	9.5	8.7				
Min	-	-	-	-	-	-	-	11.5	6.3	15.2	4.9	4.7	3.7	3.8	5.6	6.6	6.8	5.6	8.7	4.5	7.7	8.2	6.7	8.4	8.7	10.5				
Max	-	-	-	-	-	-	-	54.5	51.7	51.5	49.0	48.4	47.1	46.5	47.1	46.9	44.6	44.1	44.0	41.8	42.2	42.0	41.7	40.5	40.3	39.3				

Source(s): see 'Data Sources'

Table C.22. **Gender gap in the labour force participation rate for individuals with low education (ISCED levels 0-2) (25-29 year olds), by country**

	Gender gap in the labour force participation rate for individuals with low education (ISCED levels 0-2) (25-29 year olds)																												Std.		
	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Ave.	Dev.	Min	Max
Australia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Austria	-	-	-	-	-	-	-	-	-	-	15.3	14.0	16.6	16.9	21.3	19.1	19.6	24.5	33.4	21.4	29.7	27.2	23.4	23.4	26.5	23.9	22.3		14.0	33.4
Belgium	-	-	-	-	-	-	-	27.8	27.5	27.3	25.7	24.1	24.1	27.0	24.8	24.9	46.2	33.8	35.1	27.7	31.9	26.3	24.7	22.4	29.7	28.0	28.4		22.4	46.2
Canada	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-
Denmark	-	-	-	-	-	-	-	6.4	14.6	26.3	48.5	27.0	22.7	28.2	28.8	20.9	24.7	28.4	19.4	25.7	26.7	24.3	18.8	6.4	14.7	18.5	22.7		6.4	48.5
Finland	-	-	-	-	-	-	-	-	-	-	34.7	22.2	29.5	4.1	27.1	17.1	27.1	21.0	31.6	32.0	16.3	27.1	26.4	21.8	27.6	27.2	24.6		4.1	34.7
France	-	-	-	-	-	-	-	-	29.1	29.0	26.3	26.7	27.3	27.5	28.5	31.8	33.1	29.5	29.4	29.8	33.7	29.0	29.1	33.3	29.7	29.1	29.5		26.3	33.7
Germany	-	-	-	-	-	-	-	32.7	36.9	34.3	35.2	31.5	36.7	-	32.7	35.3	36.4	35.4	36.2	35.4	34.9	33.2	34.5	35.0	32.6	34.1	34.6		31.5	36.9
Greece	-	-	-	-	-	-	-	52.1	50.2	51.5	50.8	50.8	47.0	45.4	42.3	42.2	44.4	41.9	41.0	46.3	41.1	39.2	38.9	41.5	43.6	42.8	44.9		38.9	52.1
Ireland	-	-	-	-	-	-	-	41.1	39.2	40.1	35.6	35.9	30.8	-	30.0	26.9	32.8	33.9	36.1	38.2	38.8	32.8	28.4	27.9	34.9	36.2	34.4		26.9	41.1
Italy	-	-	-	-	-	-	-	40.1	41.9	38.8	36.1	36.8	37.4	35.5	37.9	36.0	34.6	36.7	34.4	34.5	36.4	36.1	36.3	34.1	32.7	33.3	36.3		32.7	41.9
Luxembourg	-	-	-	-	-	-	-	34.5	34.6	34.6	32.4	35.6	29.0	-	34.0	31.1	24.8	17.7	26.9	24.1	21.5	13.3	23.8	18.9	17.2	14.1	26.0		13.3	35.6
Netherlands	-	-	-	-	-	-	-	-	-	-	-	29.5	29.0	27.5	28.3	32.2	22.8	34.0	28.9	25.0	25.4	27.9	26.1	26.7	29.6	22.5	27.7		22.5	34.0
New Zealand	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-
Norway	-	-	-	-	-	-	-	-	-	-	-	26.1	26.0	26.4	19.1	31.7	9.1	21.3	27.8	7.7	21.8	18.2	17.4	10.4	8.5	14.7	19.1		7.7	31.7
Portugal	-	-	-	-	-	-	-	19.3	19.4	19.2	17.4	13.9	14.9	14.2	16.8	13.0	13.0	12.1	10.1	12.5	10.5	10.6	11.3	13.0	8.7	12.4	13.8		8.7	19.4
Spain	-	-	-	-	-	-	-	37.7	38.4	34.0	32.3	29.5	27.7	27.9	28.2	27.4	30.5	27.3	21.3	21.2	21.3	20.2	19.8	15.6	13.6	12.2	25.6		12.2	38.4
Sweden	-	-	-	-	-	-	-	-	-	-	32.9	11.9	18.2	18.9	11.5	8.0	8.2	13.1	15.4	23.9	16.1	20.6	19.2	23.2	23.2	24.3	18.0		8.0	32.9
United Kingdom	-	-	-	-	-	-	-	33.3	31.5	31.7	30.3	27.8	27.8	-	26.3	28.7	29.4	30.5	34.9	31.7	34.7	36.7	38.1	36.2	35.5	35.8	32.3		26.3	38.1
United States	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Average	-	-	-	-	-	-	-	32.5	33.0	33.3	32.4	27.7	27.8	25.0	27.3	26.6	27.3	27.6	28.9	27.3	27.6	26.4	26.0	24.4	25.5	25.6				
Std. Dev.	-	-	-	-	-	-	-	12.6	10.2	8.5	9.8	9.8	8.1	10.5	7.7	9.1	11.1	8.6	8.5	9.5	9.0	8.3	7.9	10.0	10.3	9.4				
Min	-	-	-	-	-	-	-	6.4	14.6	19.2	15.3	11.9	14.9	4.1	11.5	8.0	8.2	12.1	10.1	7.7	10.5	10.6	11.3	6.4	8.5	12.2				
Max	-	-	-	-	-	-	-	52.1	50.2	51.5	50.8	50.8	47.0	45.4	42.3	42.2	46.2	41.9	41.0	46.3	41.1	39.2	38.9	41.5	43.6	42.8				

Source(s): see 'Data Sources'

Table C.23. **Gender gap in the labour force participation rate for individuals with low education (ISCED levels 0-2) (30-34 year olds), by country**

	Gender gap in the labour force participation rate for individuals with low education (ISCED levels 0-2) (30-34 year olds)																											Std.		
	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Ave.	Dev.	Min	Max
Australia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Austria	-	-	-	-	-	-	-	-	-	-	23.8	21.6	26.2	25.9	26.8	22.4	20.9	22.0	22.8	19.5	24.8	26.3	25.6	22.6	25.5	24.3	23.8		19.5	26.8
Belgium	-	-	-	-	-	-	-	30.7	28.6	29.0	28.2	29.0	29.8	29.9	27.1	28.2	24.5	34.2	33.7	26.8	26.8	26.5	26.0	28.5	30.8	22.4	28.5		22.4	34.2
Canada	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-
Denmark	-	-	-	-	-	-	-	16.7	8.5	15.1	10.2	28.1	20.0	25.7	20.3	16.2	14.9	21.6	18.3	12.2	19.3	19.9	22.7	17.1	19.4	18.2	18.1		8.5	28.1
Finland	-	-	-	-	-	-	-	-	-	-	11.4	23.1	13.5	30.9	8.7	26.8	20.2	3.9	28.0	22.3	16.2	12.8	17.8	14.1	20.2	27.8	18.6		3.9	30.9
France	-	-	-	-	-	-	-	-	30.4	29.3	30.4	26.7	28.0	26.9	26.8	26.3	27.1	31.9	28.0	29.4	30.2	31.3	31.6	33.3	32.9	32.3	29.6		26.3	33.3
Germany	-	-	-	-	-	-	-	35.6	34.4	34.1	38.6	36.8	37.9	-	33.0	33.6	31.9	35.0	34.4	38.5	35.0	34.3	34.4	36.6	32.1	33.5	35.0		31.9	38.6
Greece	-	-	-	-	-	-	-	47.9	48.5	46.7	46.6	45.5	46.2	43.3	41.8	38.2	39.7	42.7	37.1	37.5	39.5	38.6	42.6	41.9	38.0	38.5	42.1		37.1	48.5
Ireland	-	-	-	-	-	-	-	50.3	50.3	46.8	48.6	45.9	42.4	-	43.4	42.1	37.3	36.2	40.0	37.5	35.6	37.1	36.5	40.4	40.0	37.3	41.5		35.6	50.3
Italy	-	-	-	-	-	-	-	48.6	49.0	49.4	48.1	47.6	47.7	47.0	46.5	45.6	43.5	40.5	42.8	39.0	38.1	40.4	40.5	39.6	39.0	39.8	43.8		38.1	49.4
Luxembourg	-	-	-	-	-	-	-	45.0	49.2	43.1	44.1	44.4	43.9	-	37.3	26.5	30.5	30.0	37.6	28.8	22.9	21.5	16.9	32.5	15.5	30.6	33.3		15.5	49.2
Netherlands	-	-	-	-	-	-	-	-	-	-	-	35.8	37.0	32.1	36.0	34.1	33.5	27.0	25.9	31.1	30.1	29.1	29.7	26.2	26.6	28.1	30.8		25.9	37.0
New Zealand	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-
Norway	-	-	-	-	-	-	-	-	-	-	-	29.0	22.2	22.0	16.7	12.3	23.8	23.8	21.2	25.9	21.1	16.6	16.7	13.8	15.5	15.7	19.8		12.3	29.0
Portugal	-	-	-	-	-	-	-	23.5	21.9	22.2	18.0	19.3	16.9	17.7	16.5	17.1	15.9	14.7	10.8	13.5	11.3	11.4	11.0	12.1	13.2	9.6	15.6		9.6	23.5
Spain	-	-	-	-	-	-	-	46.9	45.0	43.3	41.3	43.3	41.9	40.9	40.9	38.1	37.4	33.1	33.4	33.4	31.2	27.1	25.8	23.6	20.3	18.8	35.0		18.8	46.9
Sweden	-	-	-	-	-	-	-	-	-	-	15.2	14.4	22.6	21.9	19.7	17.0	17.7	15.5	11.5	15.0	22.6	17.2	16.7	18.2	21.5	23.4	18.1		11.5	23.4
United Kingdom	-	-	-	-	-	-	-	31.5	31.4	31.5	30.0	28.3	27.5	-	26.7	26.0	27.6	25.3	25.9	26.4	27.7	30.6	36.0	32.5	32.7	37.8	29.7		25.3	37.8
United States	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Average	-	-	-	-	-	-	-	37.7	36.1	35.5	31.0	32.4	31.5	30.3	29.3	28.2	27.9	27.3	28.2	27.3	27.0	26.3	26.9	27.1	26.4	27.4				
Std. Dev.	-	-	-	-	-	-	-	11.8	13.6	11.2	13.8	10.5	11.0	9.1	11.1	9.8	8.8	10.3	9.6	8.9	8.0	9.0	9.5	10.1	8.8	9.0				
Min	-	-	-	-	-	-	-	16.7	8.5	15.1	10.2	14.4	13.5	17.7	8.7	12.3	14.9	3.9	10.8	12.2	11.3	11.4	11.0	12.1	13.2	9.6				
Max	-	-	-	-	-	-	-	50.3	50.3	49.4	48.6	47.6	47.7	47.0	46.5	45.6	43.5	42.7	42.8	39.0	39.5	40.4	42.6	41.9	40.0	39.8				

Source(s): see 'Data Sources'

Table C.24. **Gender gap in the labour force participation rate for individuals with medium education (ISCED levels 3-4) (25-49 year olds)**

	Gender gap in the labour force participation rate for individuals with medium education (ISCED levels 3-4) (25-49 year olds)																											Std.		
	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Ave.	Dev.	Min	Max
Australia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Austria	-	-	-	-	-	-	-	-	-	-	18.5	17.1	17.3	16.1	15.3	15.0	15.4	13.9	13.0	10.9	11.1	9.9	10.6	9.9	7.4	7.2	13.0	3.6	7.2	18.5
Belgium	-	-	-	-	-	-	-	23.7	21.2	21.0	20.3	21.6	20.2	18.6	17.5	17.5	16.8	17.3	17.1	16.7	14.5	15.5	15.2	13.7	13.0	13.4	17.6	4.4	13.0	23.7
Canada	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Denmark	-	-	-	-	-	-	-	4.2	6.6	8.6	10.0	9.3	11.6	8.3	9.0	7.0	8.1	5.9	8.6	8.4	7.2	7.4	5.8	5.1	5.2	4.8	7.4	3.8	4.2	11.6
Finland	-	-	-	-	-	-	-	-	-	-	6.6	4.6	6.2	6.0	6.6	7.0	7.7	6.3	5.8	7.3	6.6	5.9	6.5	6.5	5.7	7.1	6.4	2.1	4.6	7.7
France	-	-	-	-	-	-	-	-	15.8	15.7	14.9	14.7	15.1	14.5	13.9	13.9	14.1	14.0	12.3	12.1	11.8	11.2	10.8	10.6	10.4	10.2	13.1	2.7	10.2	15.8
Germany	-	-	-	-	-	-	-	19.3	19.1	17.8	17.3	16.4	16.3	-	14.8	14.5	13.9	12.4	12.0	11.7	12.4	11.3	11.3	10.9	10.2	9.6	14.0	3.1	9.6	19.3
Greece	-	-	-	-	-	-	-	40.4	40.7	40.8	38.7	37.3	36.2	33.7	32.8	32.2	31.9	31.2	30.1	27.1	27.1	26.0	26.3	26.0	24.3	23.2	31.9	4.3	23.2	40.8
Ireland	-	-	-	-	-	-	-	37.7	36.6	34.1	34.2	31.6	31.0	-	27.6	26.1	26.3	24.3	25.0	25.6	24.6	24.2	23.4	24.0	22.4	22.3	27.8	7.0	22.3	37.7
Italy	-	-	-	-	-	-	-	23.1	23.3	22.1	22.8	22.0	22.7	21.9	20.2	20.1	20.0	19.4	20.3	20.7	20.1	19.5	20.0	19.7	19.7	19.7	20.9	3.3	19.4	23.3
Luxembourg	-	-	-	-	-	-	-	35.5	29.1	34.3	40.1	31.4	32.9	-	31.0	30.8	27.5	28.6	25.9	24.0	25.7	21.6	21.2	22.2	21.2	20.7	28.0	8.2	20.7	40.1
Netherlands	-	-	-	-	-	-	-	-	-	-	-	21.7	21.0	18.7	17.3	17.5	17.1	15.3	15.1	13.4	13.2	12.0	10.9	11.0	10.0	9.6	14.9	4.5	9.6	21.7
New Zealand	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Norway	-	-	-	-	-	-	-	-	-	-	-	9.7	10.0	8.5	8.7	9.4	7.7	8.6	7.3	8.8	9.3	8.4	8.0	6.7	7.1	7.6	8.4	2.9	6.7	10.0
Portugal	-	-	-	-	-	-	-	11.8	10.6	10.4	13.0	8.7	9.8	6.5	8.1	4.3	3.1	5.0	2.8	4.4	5.2	4.8	3.2	4.3	3.4	3.4	6.5	4.9	2.8	13.0
Spain	-	-	-	-	-	-	-	26.0	24.6	24.6	25.6	23.9	24.1	23.8	23.4	22.6	24.7	22.5	21.1	19.4	19.3	18.0	16.0	14.5	12.4	12.1	21.0	8.7	12.1	26.0
Sweden	-	-	-	-	-	-	-	-	-	-	3.4	3.7	4.3	7.1	5.3	2.4	5.7	4.7	5.4	5.9	6.5	6.8	6.0	5.3	5.4	6.4	5.3	2.0	2.4	7.1
United Kingdom	-	-	-	-	-	-	-	17.3	16.6	15.1	15.8	14.1	14.8	-	13.2	12.5	12.3	12.3	12.2	13.6	13.6	13.9	13.8	13.0	13.3	12.9	13.9	2.0	12.2	17.3
United States	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Average	-	-	-	-	-	-	-	23.9	22.2	22.2	20.1	18.0	18.3	15.3	16.5	15.8	15.8	15.1	14.6	14.4	14.3	13.5	13.1	12.7	11.9	11.9				
Std. Dev.	-	-	-	-	-	-	-	11.6	10.3	10.4	11.3	9.9	9.4	8.6	8.5	8.9	8.5	8.3	8.0	7.1	7.1	6.7	6.8	6.9	6.7	6.4				
Min	-	-	-	-	-	-	-	4.2	6.6	8.6	3.4	3.7	4.3	6.0	5.3	2.4	3.1	4.7	2.8	4.4	5.2	4.8	3.2	4.3	3.4	3.4				
Max	-	-	-	-	-	-	-	40.4	40.7	40.8	40.1	37.3	36.2	33.7	32.8	32.2	31.9	31.2	30.1	27.1	27.1	26.0	26.3	26.0	24.3	23.2				

Source(s): see 'Data Sources'

Table C.25. **Gender gap in the labour force participation rate for individuals with medium education (ISCED levels 3-4) (25-29 year olds)**

	Gender gap in the labour force participation rate for individuals with medium education (ISCED levels 3-4) (25-29 year olds)																											Std.		
	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Ave.	Dev.	Min	Max
Australia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Austria	-	-	-	-	-	-	-	-	-	-	9.6	6.9	6.6	7.6	5.2	7.1	6.7	7.4	8.1	5.6	7.5	7.8	12.7	10.6	6.7	4.9	7.6	3.6	4.9	12.7
Belgium	-	-	-	-	-	-	-	11.0	9.8	11.1	11.3	12.6	10.9	10.4	10.0	13.3	7.1	10.8	12.0	11.5	10.0	10.0	13.3	13.1	10.7	12.4	11.1	4.4	7.1	13.3
Canada	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Denmark	-	-	-	-	-	-	-	4.7	8.0	9.8	12.2	10.7	10.8	9.9	13.4	9.2	11.6	13.1	13.2	7.4	10.8	10.8	6.6	10.0	3.6	3.5	9.4	3.8	3.5	13.4
Finland	-	-	-	-	-	-	-	-	-	-	15.3	15.3	11.0	10.8	12.6	18.5	14.9	9.9	11.6	18.1	16.5	14.0	11.2	12.9	10.6	13.0	13.5	2.1	9.9	18.5
France	-	-	-	-	-	-	-	-	14.1	13.0	14.0	13.6	16.1	14.9	13.7	13.9	15.7	15.8	16.3	15.0	14.6	14.3	13.8	14.5	13.5	14.3	14.5	2.7	13.0	16.3
Germany	-	-	-	-	-	-	-	10.1	9.8	8.7	8.1	7.7	8.2	-	8.0	8.7	7.5	6.1	5.5	5.4	8.9	7.4	7.5	7.8	7.3	6.5	7.7	3.1	5.4	10.1
Greece	-	-	-	-	-	-	-	29.5	29.2	28.1	26.8	26.6	24.4	23.6	20.9	21.6	20.1	18.8	17.9	15.1	14.4	13.4	14.1	13.4	10.1	10.5	19.9	4.3	10.1	29.5
Ireland	-	-	-	-	-	-	-	15.2	15.9	14.9	13.9	12.7	13.1	-	11.5	10.1	12.4	10.2	11.1	14.8	14.5	15.4	16.8	18.3	15.6	14.2	13.9	7.0	10.1	18.3
Italy	-	-	-	-	-	-	-	12.9	13.1	10.1	12.5	11.1	12.2	9.5	9.0	9.3	10.2	8.8	9.5	14.3	13.3	12.5	13.2	13.5	14.4	14.1	11.8	3.3	8.8	14.4
Luxembourg	-	-	-	-	-	-	-	14.8	17.7	12.5	15.4	14.8	13.3	-	16.2	3.8	11.6	11.1	3.8	10.8	9.9	12.5	4.5	7.3	1.5	10.7	10.7	8.2	1.5	17.7
Netherlands	-	-	-	-	-	-	-	-	-	-	-	11.5	8.7	8.9	7.7	10.1	9.0	8.9	9.0	9.1	7.6	5.2	8.0	8.3	4.7	7.1	8.3	4.5	4.7	11.5
New Zealand	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Norway	-	-	-	-	-	-	-	-	-	-	-	11.2	14.8	9.3	12.2	11.6	10.6	12.3	10.3	10.1	13.3	10.8	9.3	6.3	8.6	9.6	10.7	2.9	6.3	14.8
Portugal	-	-	-	-	-	-	-	6.9	8.8	8.9	8.8	0.6	7.1	4.6	6.7	-2.8	2.7	1.5	-0.4	-1.6	1.3	1.2	-2.6	-2.9	0.4	-1.5	2.5	4.9	-2.9	8.9
Spain	-	-	-	-	-	-	-	17.4	14.0	13.1	14.8	11.1	12.3	11.2	10.8	8.8	13.7	9.7	8.5	7.2	9.1	8.6	6.0	5.3	4.7	2.0	9.9	8.7	2.0	17.4
Sweden	-	-	-	-	-	-	-	-	-	-	5.6	5.4	4.8	13.9	14.9	2.3	9.5	7.8	7.5	8.3	6.3	8.9	8.7	8.3	9.3	9.0	8.2	2.0	2.3	14.9
United Kingdom	-	-	-	-	-	-	-	19.2	18.2	18.9	17.4	17.2	17.1	-	16.8	14.4	16.3	15.7	14.1	18.0	17.4	18.0	18.1	17.1	17.8	17.9	17.2	2.0	14.1	19.2
United States	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Average	-	-	-	-	-	-	-	14.2	14.4	13.6	13.3	11.8	12.0	11.2	11.8	10.0	11.2	10.5	9.9	10.6	11.0	10.7	10.1	10.2	8.7	9.3				
Std. Dev.	-	-	-	-	-	-	-	7.0	6.0	5.7	5.1	5.7	4.8	4.7	4.1	5.9	4.3	4.1	4.6	5.2	4.2	4.2	5.2	5.2	5.0	5.2				
Min	-	-	-	-	-	-	-	4.7	8.0	8.7	5.6	0.6	4.8	4.6	5.2	-2.8	2.7	1.5	-0.4	-1.6	1.3	1.2	-2.6	-2.9	0.4	-1.5				
Max	-	-	-	-	-	-	-	29.5	29.2	28.1	26.8	26.6	24.4	23.6	20.9	21.6	20.1	18.8	17.9	18.1	17.4	18.0	18.1	18.3	17.8	17.9				

Source(s): see 'Data Sources'

Table C.26. **Gender gap in the labour force participation rate for individuals with medium education (ISCED levels 3-4) (30-34 year olds)**

	Gender gap in the labour force participation rate for individuals with medium education (ISCED levels 3-4) (30-34 year olds)																											Std.		
	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Ave.	Dev.	Min	Max
Australia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Austria	-	-	-	-	-	-	-	-	-	-	18.1	17.8	19.0	16.7	16.7	15.1	16.8	13.0	12.8	11.4	14.7	16.2	16.8	13.1	10.1	10.0	14.9	3.6	10.0	19.0
Belgium	-	-	-	-	-	-	-	18.1	18.2	14.7	16.9	14.2	14.7	15.7	16.4	14.0	14.8	15.8	19.4	15.4	12.5	12.1	14.2	11.6	10.4	13.8	14.9	4.4	10.4	19.4
Canada	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Denmark	-	-	-	-	-	-	-	4.8	6.8	12.2	16.4	11.6	10.5	7.2	9.5	11.2	9.9	10.0	15.8	8.9	9.6	11.0	8.2	9.1	9.9	7.5	10.0	3.8	4.8	16.4
Finland	-	-	-	-	-	-	-	-	-	-	14.2	7.1	14.3	17.6	14.6	13.2	18.9	16.2	14.8	15.6	16.3	13.2	15.7	16.9	13.6	17.5	15.0	2.1	7.1	18.9
France	-	-	-	-	-	-	-	-	18.0	18.6	15.9	16.3	17.7	18.4	17.6	18.1	17.3	18.6	16.6	17.0	16.4	18.7	16.2	14.6	17.1	15.6	17.2	2.7	14.6	18.7
Germany	-	-	-	-	-	-	-	24.1	24.1	20.7	20.5	18.5	20.2	-	17.3	17.3	17.1	15.6	14.6	14.8	18.6	16.3	15.9	16.3	15.2	14.8	17.9	3.1	14.6	24.1
Greece	-	-	-	-	-	-	-	36.2	37.2	39.0	35.5	33.6	34.1	30.3	32.0	31.4	30.1	28.2	29.0	26.2	26.0	24.6	25.3	24.4	23.0	22.7	29.9	4.3	22.7	39.0
Ireland	-	-	-	-	-	-	-	31.9	31.9	27.9	29.3	26.9	29.0	-	25.0	24.0	25.3	22.0	26.2	25.5	23.3	22.0	22.8	23.0	22.7	21.9	25.6	7.0	21.9	31.9
Italy	-	-	-	-	-	-	-	21.5	23.0	21.4	21.8	21.0	21.7	20.5	18.5	20.7	19.1	18.5	20.7	18.5	18.3	18.5	20.5	19.5	19.8	21.1	20.2	3.3	18.3	23.0
Luxembourg	-	-	-	-	-	-	-	37.6	29.3	37.8	39.2	29.0	33.4	-	28.7	26.0	23.0	21.3	23.7	22.4	26.7	14.9	19.0	25.5	18.1	14.2	26.1	8.2	14.2	39.2
Netherlands	-	-	-	-	-	-	-	-	-	-	-	24.6	22.4	18.9	17.9	16.5	16.0	14.4	15.1	13.3	13.1	14.2	12.2	10.4	10.4	10.4	15.3	4.5	10.4	24.6
New Zealand	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Norway	-	-	-	-	-	-	-	-	-	-	-	12.4	11.0	12.2	13.5	14.3	9.8	13.2	10.1	12.7	10.9	10.7	7.4	7.5	7.8	9.9	10.9	2.9	7.4	14.3
Portugal	-	-	-	-	-	-	-	12.6	9.2	7.8	14.1	5.5	7.8	4.4	-0.4	7.2	1.1	4.7	4.4	4.1	3.1	5.3	4.5	3.7	1.6	3.9	5.5	4.9	-0.4	14.1
Spain	-	-	-	-	-	-	-	24.2	27.9	27.0	26.7	25.9	26.3	24.6	24.1	23.5	24.8	22.1	18.0	17.3	17.4	17.1	15.8	13.2	10.9	11.2	20.9	8.7	10.9	27.9
Sweden	-	-	-	-	-	-	-	-	-	-	4.1	5.7	6.2	9.0	6.8	5.6	10.6	8.2	7.2	10.7	9.6	8.3	7.7	7.6	7.6	7.9	7.7	2.0	4.1	10.7
United Kingdom	-	-	-	-	-	-	-	23.5	21.3	20.8	21.5	20.4	20.2	-	16.4	16.9	16.3	17.5	20.2	19.9	18.6	19.1	20.5	20.0	21.8	20.4	19.7	2.0	16.3	23.5
United States	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Average	-	-	-	-	-	-	-	23.5	22.4	22.5	21.0	18.2	19.3	16.3	17.2	17.2	16.9	16.2	16.8	15.9	15.9	15.1	15.2	14.8	13.7	13.9				
Std. Dev.	-	-	-	-	-	-	-	10.2	9.2	9.8	9.2	8.5	8.5	7.3	8.0	6.8	7.1	5.8	6.5	5.9	6.2	5.0	5.9	6.5	6.2	5.7				
Min	-	-	-	-	-	-	-	4.8	6.8	7.8	4.1	5.5	6.2	4.4	-0.4	5.6	1.1	4.7	4.4	4.1	3.1	5.3	4.5	3.7	1.6	3.9				
Max	-	-	-	-	-	-	-	37.6	37.2	39.0	39.2	33.6	34.1	30.3	32.0	31.4	30.1	28.2	29.0	26.2	26.7	24.6	25.3	25.5	23.0	22.7				

Source(s): see 'Data Sources'

Table C.27. **Gender gap in the labour force participation rate for individuals with high education (ISCED levels 5-6) (25-49 year olds)**

	Gender gap in the labour force participation rate for individuals with high education (ISCED levels 5-6) (25-49 year olds)																											Std.		
	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Ave.	Dev.	Min	Max
Australia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Austria	-	-	-	-	-	-	-	-	-	-	6.4	7.1	8.2	6.3	9.2	8.9	7.2	6.8	6.2	7.9	7.1	7.4	8.4	7.6	6.4	8.7	7.5	3.6	6.2	9.2
Belgium	-	-	-	-	-	-	-	10.3	8.7	9.4	10.2	9.5	9.0	9.0	6.6	8.1	6.9	7.5	6.3	8.1	6.3	6.1	6.3	6.3	5.3	4.2	7.6	4.4	4.2	10.3
Canada	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Denmark	-	-	-	-	-	-	-	4.0	3.4	4.5	4.0	5.4	4.6	2.8	4.7	4.6	4.6	2.9	5.1	2.4	4.8	4.2	3.9	3.2	3.5	4.5	4.1	3.8	2.4	5.4
Finland	-	-	-	-	-	-	-	-	-	-	6.1	4.2	5.4	6.6	4.5	6.7	5.4	5.9	6.8	5.9	6.0	6.3	5.9	6.5	6.3	7.3	6.0	2.1	4.2	7.3
France	-	-	-	-	-	-	-	-	9.3	9.3	9.6	9.1	9.0	8.4	7.7	7.8	8.0	7.8	6.4	7.5	7.0	8.2	7.3	6.2	6.2	6.0	7.8	2.7	6.0	9.6
Germany	-	-	-	-	-	-	-	12.5	11.8	10.9	11.2	10.5	10.3	-	9.5	9.4	9.6	9.5	8.7	8.4	9.4	8.6	8.7	9.0	8.4	8.1	9.7	3.1	8.1	12.5
Greece	-	-	-	-	-	-	-	12.2	11.7	11.9	12.1	11.9	11.7	9.4	9.0	7.8	8.1	8.5	7.4	8.3	7.4	6.7	6.6	7.0	6.7	6.4	9.0	4.3	6.4	12.2
Ireland	-	-	-	-	-	-	-	18.8	17.3	15.2	15.5	15.1	12.8	-	11.0	10.8	10.4	9.7	10.3	10.2	10.3	10.8	9.4	10.6	10.3	9.4	12.1	7.0	9.4	18.8
Italy	-	-	-	-	-	-	-	11.5	11.0	9.4	10.7	10.0	10.6	10.6	10.0	9.3	9.5	7.9	8.3	8.1	8.7	8.8	9.5	8.6	8.2	9.0	9.5	3.3	7.9	11.5
Luxembourg	-	-	-	-	-	-	-	19.2	16.3	28.5	24.5	15.6	18.6	-	13.2	13.4	14.7	14.4	15.9	14.4	12.2	11.6	9.8	10.1	11.1	13.2	15.4	8.2	9.8	28.5
Netherlands	-	-	-	-	-	-	-	-	-	-	-	10.2	9.2	9.5	8.1	8.3	8.8	8.8	8.2	7.3	6.5	6.5	6.1	5.4	5.2	4.9	7.5	4.5	4.9	10.2
New Zealand	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Norway	-	-	-	-	-	-	-	-	-	-	-	6.8	3.9	3.8	4.3	5.5	6.9	5.2	5.8	4.6	3.2	4.2	3.9	3.4	3.5	2.9	4.5	2.9	2.9	6.9
Portugal	-	-	-	-	-	-	-	3.0	4.0	1.7	3.7	4.0	2.1	2.7	4.1	2.4	2.2	0.7	1.4	2.1	0.9	0.8	2.5	2.8	0.9	-0.3	2.2	4.9	-0.3	4.1
Spain	-	-	-	-	-	-	-	11.4	10.1	11.1	10.9	11.4	10.0	10.5	10.1	9.7	11.8	9.9	8.6	8.5	9.4	7.9	8.5	7.5	6.7	6.2	9.5	8.7	6.2	11.8
Sweden	-	-	-	-	-	-	-	-	-	-	1.7	1.3	1.2	2.7	1.7	2.4	0.5	1.4	0.5	1.6	3.0	2.7	3.0	3.0	3.1	3.1	2.1	2.0	0.5	3.1
United Kingdom	-	-	-	-	-	-	-	10.5	8.7	8.4	9.2	9.0	7.9	-	7.1	8.0	8.0	7.4	7.2	7.2	6.7	7.2	7.7	7.6	7.2	7.5	7.9	2.0	6.7	10.5
United States	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Average	-	-	-	-	-	-	-	11.3	10.2	10.9	9.7	8.8	8.4	6.9	7.5	7.7	7.7	7.1	7.1	7.0	6.8	6.8	6.7	6.6	6.2	6.3				
Std. Dev.	-	-	-	-	-	-	-	5.2	4.3	6.8	5.7	3.9	4.3	3.1	3.1	2.9	3.5	3.4	3.5	3.2	2.9	2.8	2.4	2.5	2.6	3.2				
Min	-	-	-	-	-	-	-	3.0	3.4	1.7	1.7	1.3	1.2	2.7	1.7	2.4	0.5	0.7	0.5	1.6	0.9	0.8	2.5	2.8	0.9	-0.3				
Max	-	-	-	-	-	-	-	19.2	17.3	28.5	24.5	15.6	18.6	10.6	13.2	13.4	14.7	14.4	15.9	14.4	12.2	11.6	9.8	10.6	11.1	13.2				

Source(s): see 'Data Sources'

Table C.28. **Gender gap in the labour force participation rate for individuals with high education (ISCED levels 5-6) (25-29 year olds)**

	Gender gap in the labour force participation rate for individuals with high education (ISCED levels 5-6) (25-29 year olds)																												Std.		
	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Ave.	Dev.	Min	Max
Australia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Austria	-	-	-	-	-	-	-	-	-	-	-3.3	-6.1	-2.3	0.5	-1.3	-0.1	2.9	2.5	1.3	5.2	2.0	6.2	6.0	6.0	5.0	4.9	1.8	3.6	-6.1	6.2
Belgium	-	-	-	-	-	-	-	0.5	-1.4	0.4	0.8	0.5	3.1	1.8	0.2	0.0	-0.7	2.3	-1.1	2.1	3.0	1.8	0.6	1.8	0.2	-1.5	0.8	4.4	-1.5	3.1
Canada	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Denmark	-	-	-	-	-	-	-	2.8	2.7	3.9	4.9	2.0	3.0	-0.3	6.0	5.5	3.8	5.6	1.6	-7.1	3.6	3.7	3.3	1.2	0.8	2.4	2.6	3.8	-7.1	6.0
Finland	-	-	-	-	-	-	-	-	-	-	10.0	9.8	13.9	8.2	9.2	12.1	11.2	11.6	11.1	7.7	8.8	9.8	8.4	10.0	9.7	9.1	10.0	2.1	7.7	13.9
France	-	-	-	-	-	-	-	-	4.2	5.6	6.1	5.0	4.2	3.9	1.7	1.9	2.8	2.4	1.6	2.4	2.7	4.5	4.8	2.4	2.7	2.9	3.4	2.7	1.6	6.1
Germany	-	-	-	-	-	-	-	7.1	6.9	5.9	8.3	6.8	5.7	-	6.7	7.1	6.7	4.5	4.8	6.2	5.3	4.8	6.0	5.4	3.5	4.6	5.9	3.1	3.5	8.3
Greece	-	-	-	-	-	-	-	1.8	5.3	6.7	8.1	7.4	3.9	4.8	4.1	1.3	-1.5	2.1	-3.7	3.4	-3.8	-4.5	-1.8	-1.2	-2.3	-1.1	1.5	4.3	-4.5	8.1
Ireland	-	-	-	-	-	-	-	4.6	4.5	3.1	5.1	2.2	1.4	-	2.7	3.0	2.8	1.3	3.1	3.4	3.4	3.1	3.0	4.2	1.8	1.0	3.0	7.0	1.0	5.1
Italy	-	-	-	-	-	-	-	6.4	2.2	2.0	4.2	3.9	2.8	1.8	2.9	5.1	1.0	2.1	0.6	2.2	1.6	2.7	1.4	4.2	-1.9	0.0	2.4	3.3	-1.9	6.4
Luxembourg	-	-	-	-	-	-	-	-0.9	2.5	9.4	5.3	-2.3	1.9	-	-14.1	-8.6	-2.3	-0.3	5.6	3.7	-3.2	9.8	-0.5	-3.4	2.1	8.7	0.7	8.2	-14.1	9.8
Netherlands	-	-	-	-	-	-	-	-	-	-	-	-0.3	-0.6	3.3	1.9	3.7	1.7	3.9	4.2	2.0	0.5	1.9	2.4	2.3	1.4	-0.9	1.8	4.5	-0.9	4.2
New Zealand	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Norway	-	-	-	-	-	-	-	-	-	-	-	4.7	-1.3	2.5	0.7	2.9	11.3	4.2	3.2	5.7	0.5	1.3	2.5	0.3	3.2	0.0	2.8	2.9	-1.3	11.3
Portugal	-	-	-	-	-	-	-	-1.4	1.6	1.2	3.0	1.1	-1.9	-0.8	5.4	0.4	3.3	-1.6	0.2	-0.2	-2.2	-2.6	-1.6	1.6	-3.0	-4.7	-0.1	4.9	-4.7	5.4
Spain	-	-	-	-	-	-	-	5.3	2.0	5.2	5.2	4.3	3.5	4.4	2.3	1.1	2.1	1.3	1.0	0.7	1.6	1.9	3.1	1.2	0.7	-1.4	2.4	8.7	-1.4	5.3
Sweden	-	-	-	-	-	-	-	-	-	-	-2.0	-0.8	-2.3	5.0	-0.6	6.3	-1.7	2.1	-1.5	-0.6	1.9	1.9	3.2	3.4	4.3	3.0	1.4	2.0	-2.3	6.3
United Kingdom	-	-	-	-	-	-	-	4.8	3.7	5.1	4.7	4.5	3.8	-	2.7	5.7	4.9	4.1	3.4	2.5	3.8	4.3	4.3	3.9	4.6	4.4	4.2	2.0	2.5	5.7
United States	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Average	-	-	-	-	-	-	-	3.1	3.1	4.4	4.3	2.7	2.4	2.9	1.9	3.0	3.0	3.0	2.2	2.5	1.8	3.2	2.8	2.7	2.0	2.0				
Std. Dev.	-	-	-	-	-	-	-	3.0	2.2	2.6	3.7	4.0	4.0	2.6	5.1	4.4	4.0	2.9	3.4	3.4	3.2	3.7	2.8	3.1	3.2	3.8				
Min	-	-	-	-	-	-	-	-1.4	-1.4	0.4	-3.3	-6.1	-2.3	-0.8	-14.1	-8.6	-2.3	-1.6	-3.7	-7.1	-3.8	-4.5	-1.8	-3.4	-3.0	-4.7				
Max	-	-	-	-	-	-	-	7.1	6.9	9.4	10.0	9.8	13.9	8.2	9.2	12.1	11.3	11.6	11.1	7.7	8.8	9.8	8.4	10.0	9.7	9.1				

Source(s): see 'Data Sources'

Table C.29. **Gender gap in the labour force participation rate for individuals with high education (ISCED levels 5-6) (30-34 year olds)**

	Gender gap in the labour force participation rate for individuals with high education (ISCED levels 5-6) (30-34 year olds)																											Std.		
	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Ave.	Dev.	Min	Max
Australia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Austria	-	-	-	-	-	-	-	-	-	-	-1.3	1.8	3.9	3.7	10.0	6.9	5.7	5.2	7.5	11.8	11.4	11.1	10.6	9.6	11.2	12.0	7.6	3.6	-1.3	12.0
Belgium	-	-	-	-	-	-	-	8.1	6.4	7.1	8.1	5.6	5.1	6.5	4.6	5.2	4.5	6.4	3.1	6.7	5.4	3.5	5.3	4.3	2.2	3.7	5.4	4.4	2.2	8.1
Canada	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Denmark	-	-	-	-	-	-	-	4.5	3.5	4.7	9.4	9.6	12.9	3.5	4.9	2.4	5.4	2.1	10.5	5.8	5.4	3.8	4.3	3.1	1.5	3.1	5.3	3.8	1.5	12.9
Finland	-	-	-	-	-	-	-	-	-	-	6.7	10.4	7.3	18.8	11.0	13.5	11.5	11.1	12.0	10.2	11.8	14.9	14.0	14.6	12.7	15.3	12.2	2.1	6.7	18.8
France	-	-	-	-	-	-	-	-	10.2	8.7	8.9	8.2	9.3	7.2	8.4	8.4	8.3	9.1	5.5	7.7	8.0	9.1	7.4	6.1	8.0	6.5	8.1	2.7	5.5	10.2
Germany	-	-	-	-	-	-	-	12.0	13.0	11.4	13.3	12.1	11.6	-	11.1	10.8	11.0	10.6	9.8	9.0	14.2	11.7	10.8	11.4	10.8	11.0	11.4	3.1	9.0	14.2
Greece	-	-	-	-	-	-	-	9.9	9.6	10.7	8.9	9.8	11.0	9.7	9.4	6.2	8.7	7.7	9.7	7.8	6.8	7.4	9.8	9.4	9.2	7.5	8.9	4.3	6.2	11.0
Ireland	-	-	-	-	-	-	-	15.5	14.9	13.1	12.4	15.0	13.6	-	9.2	10.2	8.9	9.5	9.3	10.5	10.7	10.8	9.6	10.6	10.2	7.6	11.2	7.0	7.6	15.5
Italy	-	-	-	-	-	-	-	11.0	9.7	7.4	8.7	8.3	8.5	9.5	8.2	6.1	9.9	6.8	8.4	7.2	8.9	8.3	8.0	6.8	7.7	8.5	8.3	3.3	6.1	11.0
Luxembourg	-	-	-	-	-	-	-	29.4	21.5	29.0	31.8	23.8	18.2	-	18.3	18.5	15.4	15.6	16.0	13.5	14.6	7.3	3.5	5.5	9.5	11.1	16.8	8.2	3.5	31.8
Netherlands	-	-	-	-	-	-	-	-	-	-	-	8.4	8.3	8.0	9.1	6.6	10.0	6.7	6.7	7.4	5.0	5.5	5.3	5.9	4.3	3.3	6.7	4.5	3.3	10.0
New Zealand	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Norway	-	-	-	-	-	-	-	-	-	-	-	7.1	7.1	4.8	7.2	9.6	5.9	7.6	7.1	6.1	4.9	5.3	6.5	2.9	4.6	5.0	6.1	2.9	2.9	9.6
Portugal	-	-	-	-	-	-	-	4.2	4.2	1.0	2.1	2.3	1.5	1.8	3.0	2.1	0.3	3.1	2.6	1.5	1.2	1.7	1.3	1.3	1.5	0.3	1.9	4.9	0.3	4.2
Spain	-	-	-	-	-	-	-	10.7	11.1	12.2	12.1	12.2	10.9	11.2	11.6	10.1	14.1	10.0	8.9	9.3	9.9	7.6	7.6	7.2	6.5	5.8	9.9	8.7	5.8	14.1
Sweden	-	-	-	-	-	-	-	-	-	-	6.5	4.4	8.6	2.0	2.3	1.4	3.2	1.5	4.4	6.8	7.2	4.9	4.6	4.0	5.2	5.5	4.5	2.0	1.4	8.6
United Kingdom	-	-	-	-	-	-	-	14.4	12.1	10.7	12.7	10.9	9.2	-	9.2	9.4	9.2	9.8	9.9	7.7	8.4	9.0	8.5	7.9	8.1	9.3	9.8	2.0	7.7	14.4
United States	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Average	-	-	-	-	-	-	-	12.0	10.6	10.5	10.0	9.4	9.2	7.2	8.6	8.0	8.2	7.7	8.2	8.1	8.4	7.6	7.3	6.9	7.1	7.2				
Std. Dev.	-	-	-	-	-	-	-	7.2	5.1	7.1	7.5	5.3	4.0	4.8	3.8	4.4	3.9	3.6	3.4	2.8	3.6	3.5	3.2	3.5	3.5	3.9				
Min	-	-	-	-	-	-	-	4.2	3.5	1.0	-1.3	1.8	1.5	1.8	2.3	1.4	0.3	1.5	2.6	1.5	1.2	1.7	1.3	1.3	1.5	0.3				
Max	-	-	-	-	-	-	-	29.4	21.5	29.0	31.8	23.8	18.2	18.8	18.3	18.5	15.4	15.6	16.0	13.5	14.6	14.9	14.0	14.6	12.7	15.3				

Source(s): see 'Data Sources'

Table C.30. **Female share of employment as managers, legislators and senior officials amongst managers, legislators and senior officials with low education (ISCED 0-2) (all ages), by country**

	Female share (%) of managerial employment amongst managers with low education (ISCED 0-2) (all ages)																											Std.		
	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Ave.	Dev.	Min	Max
Australia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Austria	-	-	-	-	-	-	-	-	-	-	42.0	39.4	36.2	48.9	52.0	50.9	50.8	46.5	24.6	35.1	45.4	46.8	45.3	51.4	43.6	44.8	44.0	3.6	24.6	52.0
Belgium	-	-	-	-	-	-	-	-	39.1	41.6	42.4	38.6	39.4	35.3	35.9	42.0	40.8	38.7	33.9	40.4	34.4	33.6	33.6	31.6	32.6	31.5	37.0	4.4	31.5	42.4
Canada	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Denmark	-	-	-	-	-	-	-	18.4	17.4	32.7	38.7	31.1	33.3	29.4	46.6	40.3	-	-	23.2	29.1	29.1	29.0	26.9	25.6	29.6	29.5	30.0	3.8	17.4	46.6
Finland	-	-	-	-	-	-	-	-	-	-	-	-	19.7	14.5	22.8	17.3	20.8	16.7	18.8	18.5	22.6	21.6	19.1	18.9	22.8	20.8	19.6	2.1	14.5	22.8
France	-	-	-	-	-	-	-	-	-	-	43.7	41.2	40.1	41.2	40.8	39.9	37.9	39.3	35.6	37.2	38.5	39.0	40.6	38.7	33.6	34.1	38.8	2.7	33.6	43.7
Germany	-	-	-	-	-	-	-	44.6	44.7	41.0	45.1	44.5	44.7	-	41.0	40.8	40.5	38.3	41.1	37.2	39.0	37.4	38.9	39.0	36.7	36.5	40.6	3.1	36.5	45.1
Greece	-	-	-	-	-	-	-	24.1	23.7	24.5	23.1	23.6	22.8	24.5	24.7	26.0	24.7	27.7	27.2	29.6	29.1	26.1	28.5	28.3	28.7	27.9	26.0	4.3	22.8	29.6
Ireland	-	-	-	-	-	-	-	19.6	22.1	21.5	23.5	22.4	23.5	-	13.5	14.3	14.0	12.4	13.7	14.8	13.6	13.4	13.9	14.3	28.3	27.8	18.1	7.0	12.4	28.3
Italy	-	-	-	-	-	-	-	20.7	16.8	21.4	19.1	19.1	17.6	18.6	17.4	12.1	20.6	21.3	20.5	35.6	33.2	33.3	34.2	33.6	34.7	33.8	24.4	3.3	12.1	35.6
Luxembourg	-	-	-	-	-	-	-	-	38.9	44.4	36.6	33.3	41.9	-	55.6	42.1	55.6	42.1	50.0	47.8	40.0	40.0	41.2	38.1	-	-	43.2	8.2	33.3	55.6
Netherlands	-	-	-	-	-	-	-	-	-	-	-	27.8	24.9	25.7	27.6	28.6	31.0	31.6	28.9	30.4	32.1	28.9	29.2	31.7	32.0	31.3	29.4	4.5	24.9	32.1
New Zealand	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Norway	-	-	-	-	-	-	-	-	-	-	-	24.9	23.0	24.2	27.1	21.5	-	15.7	-	-	14.8	27.3	25.7	30.2	36.8	30.8	25.2	2.9	14.8	36.8
Portugal	-	-	-	-	-	-	-	40.2	34.8	30.4	31.4	33.2	34.5	32.8	31.6	31.0	29.8	28.4	32.5	31.2	33.2	32.2	30.5	29.5	27.8	27.4	31.7	4.9	27.4	40.2
Spain	-	-	-	-	-	-	-	36.2	37.6	37.4	37.3	38.4	36.1	35.8	34.8	35.8	36.6	34.6	34.8	35.7	35.4	33.2	34.5	34.6	34.8	36.2	35.8	8.7	33.2	38.4
Sweden	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18.7	20.4	20.3	21.1	24.3	27.8	28.4	28.9	29.9	23.8	24.4	2.0	18.7	29.9
United Kingdom	-	-	-	-	-	-	-	38.2	38.5	38.0	37.5	38.1	36.5	-	43.0	42.5	39.0	40.0	36.8	40.0	40.1	39.4	38.9	37.1	36.1	36.5	38.7	2.0	36.1	43.0
United States	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Average	-	-	-	-	-	-	-	30.3	31.4	33.3	35.0	32.5	31.6	30.1	34.3	32.3	32.9	30.3	29.5	32.2	31.5	31.8	31.9	32.0	32.5	31.5				
Std. Dev.	-	-	-	-	-	-	-	10.6	10.3	8.6	8.8	7.9	8.8	10.0	12.3	11.9	12.3	10.8	9.6	8.8	9.0	8.0	8.3	8.6	5.0	5.9				
Min	-	-	-	-	-	-	-	18.4	16.8	21.4	19.1	19.1	17.6	14.5	13.5	12.1	14.0	12.4	13.7	14.8	13.6	13.4	13.9	14.3	22.8	20.8				
Max	-	-	-	-	-	-	-	44.6	44.7	44.4	45.1	44.5	44.7	48.9	55.6	50.9	55.6	46.5	50.0	47.8	45.4	46.8	45.3	51.4	43.6	44.8				

Source(s): see 'Data Sources'

Table C.31. **Female share of employment as managers, legislators and senior officials amongst managers, legislators and senior officials with medium education (ISCED 3-4) (all ages), by country**

	Female share (%) of managerial employment amongst managers with medium education (ISCED 3-4) (all ages)																										Std.			
	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Ave.	Dev.	Min	Max
Australia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Austria	-	-	-	-	-	-	-	-	-	-	25.8	25.4	28.7	28.4	28.8	31.4	32.3	29.1	27.1	27.6	26.9	28.4	26.9	27.2	26.1	26.9	27.9	3.6	25.4	32.3
Belgium	-	-	-	-	-	-	-	-	30.7	27.6	30.5	27.6	28.1	31.4	33.5	33.5	32.7	32.0	30.0	27.7	31.8	31.5	33.6	33.4	31.8	31.4	31.0	4.4	27.6	33.6
Canada	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Denmark	-	-	-	-	-	-	-	14.3	17.3	19.5	15.7	23.9	21.7	18.8	20.7	22.5	22.3	23.0	24.3	18.9	19.4	21.3	25.7	19.5	19.6	19.3	20.4	3.8	14.3	25.7
Finland	-	-	-	-	-	-	-	-	-	-	-	-	25.0	22.3	27.5	27.5	23.0	25.3	27.5	28.7	27.1	22.9	23.3	25.8	23.5	23.5	25.2	2.1	22.3	28.7
France	-	-	-	-	-	-	-	-	-	-	35.4	34.5	32.8	34.6	32.8	34.2	35.6	34.9	33.4	35.2	37.3	38.8	37.6	37.8	37.6	35.8	35.5	2.7	32.8	38.8
Germany	-	-	-	-	-	-	-	30.4	30.7	30.4	31.0	30.7	31.4	-	30.9	32.2	32.3	31.5	32.4	31.3	32.2	31.8	31.9	32.8	33.6	33.6	31.7	3.1	30.4	33.6
Greece	-	-	-	-	-	-	-	22.8	23.8	22.5	22.6	24.0	22.9	25.0	24.2	26.8	25.9	24.5	26.5	26.2	26.3	28.5	29.4	29.5	31.7	31.8	26.1	4.3	22.5	31.8
Ireland	-	-	-	-	-	-	-	27.0	27.8	29.3	31.9	32.0	32.4	-	29.4	31.3	32.0	31.3	33.8	32.6	33.9	33.8	34.0	35.3	40.5	39.6	32.7	7.0	27.0	40.5
Italy	-	-	-	-	-	-	-	13.9	14.8	14.5	14.1	15.7	17.1	17.2	16.4	13.8	17.7	20.8	20.6	32.4	33.1	33.5	34.2	33.5	33.5	32.5	22.6	3.3	13.8	34.2
Luxembourg	-	-	-	-	-	-	-	-	25.0	23.7	18.4	22.9	28.6	-	32.0	25.5	34.1	19.6	26.9	26.3	25.0	27.3	25.0	23.8	18.2	28.0	25.3	8.2	18.2	34.1
Netherlands	-	-	-	-	-	-	-	-	-	-	-	19.0	19.8	23.9	23.4	24.7	25.5	24.2	25.2	24.3	23.9	25.4	26.2	26.4	26.1	26.7	24.3	4.5	19.0	26.7
New Zealand	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Norway	-	-	-	-	-	-	-	-	-	-	-	25.4	26.9	23.9	25.2	22.3	26.7	27.8	25.6	29.2	25.8	25.3	23.0	20.6	25.5	25.4	25.2	2.9	20.6	29.2
Portugal	-	-	-	-	-	-	-	20.4	21.5	24.9	27.6	26.4	29.5	28.2	23.5	28.1	31.7	31.8	25.7	34.9	31.6	28.4	26.2	31.7	28.4	26.1	27.7	4.9	20.4	34.9
Spain	-	-	-	-	-	-	-	22.2	26.5	27.1	24.5	26.6	29.8	31.2	28.6	29.0	32.3	31.2	26.2	27.8	31.6	31.2	31.3	32.4	33.5	33.1	29.3	8.7	22.2	33.5
Sweden	-	-	-	-	-	-	-	-	-	-	-	-	23.2	25.3	24.1	25.9	25.6	25.3	26.3	23.9	24.8	25.2	25.4	26.0	25.9	25.0	25.1	2.0	23.2	26.3
United Kingdom	-	-	-	-	-	-	-	33.0	34.4	33.8	34.9	33.7	33.9	-	34.0	34.4	28.7	30.7	31.6	31.5	33.0	34.0	33.4	33.6	34.2	34.4	33.2	2.0	28.7	34.9
United States	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Average	-	-	-	-	-	-	-	23.0	25.3	25.3	26.0	26.3	27.0	25.9	27.2	27.7	28.7	27.7	27.7	28.7	29.0	29.2	29.2	29.3	29.4	29.6				
Std. Dev.	-	-	-	-	-	-	-	7.0	6.1	5.6	7.2	5.3	4.9	5.2	5.0	5.4	5.0	4.5	3.6	4.3	4.7	4.6	4.5	5.3	6.2	5.3				
Min	-	-	-	-	-	-	-	13.9	14.8	14.5	14.1	15.7	17.1	17.2	16.4	13.8	17.7	19.6	20.6	18.9	19.4	21.3	23.0	19.5	18.2	19.3				
Max	-	-	-	-	-	-	-	33.0	34.4	33.8	35.4	34.5	33.9	34.6	34.0	34.4	35.6	34.9	33.8	35.2	37.3	38.8	37.6	37.8	40.5	39.6				

Source(s): see 'Data Sources'

Table C.32. **Female share of employment as managers, legislators and senior officials amongst managers, legislators and senior officials with high education (ISCED 5-6) (all ages), by country**

	Female share (%) of managerial employment amongst managers with high education (ISCED 5-6) (all ages)																											Std.		
	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Ave.	Dev.	Min	Max
Australia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Austria	-	-	-	-	-	-	-	-	-	-	18.5	19.5	22.4	23.4	22.5	26.0	24.0	27.9	28.2	24.3	23.7	23.9	21.2	25.6	25.9	28.9	24.1	3.6	18.5	28.9
Belgium	-	-	-	-	-	-	-	-	22.8	24.5	25.3	25.1	27.4	28.2	27.8	26.4	30.5	29.0	28.1	28.0	31.1	30.9	34.0	32.5	35.5	36.1	29.1	4.4	22.8	36.1
Canada	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Denmark	-	-	-	-	-	-	-	23.8	24.2	26.2	19.2	19.1	23.3	23.5	18.5	22.3	20.1	21.8	27.8	27.1	27.8	26.6	31.6	28.0	27.9	24.0	24.4	3.8	18.5	31.6
Finland	-	-	-	-	-	-	-	-	-	-	-	-	22.2	22.7	30.7	29.3	32.0	32.1	31.6	30.0	32.7	34.2	32.8	33.2	33.9	35.2	30.9	2.1	22.2	35.2
France	-	-	-	-	-	-	-	-	-	-	32.7	33.2	31.3	31.3	30.7	33.3	34.4	36.5	37.0	35.9	37.4	36.7	37.0	38.9	39.7	41.6	35.5	2.7	30.7	41.6
Germany	-	-	-	-	-	-	-	14.8	15.2	15.6	15.8	16.7	15.6	-	16.6	18.0	17.6	19.1	19.7	21.1	20.7	22.2	22.8	23.1	24.0	24.7	19.1	3.1	14.8	24.7
Greece	-	-	-	-	-	-	-	15.6	15.2	15.9	16.5	19.5	16.9	25.3	20.3	18.2	21.3	20.3	23.0	19.1	22.3	23.6	23.8	25.2	26.2	27.6	20.8	4.3	15.2	27.6
Ireland	-	-	-	-	-	-	-	22.3	22.8	24.2	25.8	28.8	31.5	-	33.4	35.5	38.4	39.0	37.3	37.5	41.3	41.6	40.9	42.4	41.9	41.6	34.8	7.0	22.3	42.4
Italy	-	-	-	-	-	-	-	14.7	12.2	10.7	15.0	15.9	16.0	16.0	21.6	19.3	18.8	17.7	21.5	26.8	27.4	29.7	29.3	31.5	31.1	31.2	21.4	3.3	10.7	31.5
Luxembourg	-	-	-	-	-	-	-	-	22.2	21.8	15.8	17.6	18.2	-	15.4	21.4	17.4	17.0	19.4	17.6	16.4	20.0	-	25.0	17.2	20.9	19.0	8.2	15.4	25.0
Netherlands	-	-	-	-	-	-	-	-	-	-	-	20.4	20.3	22.4	21.0	24.2	24.3	23.2	24.5	24.1	24.3	27.1	29.4	28.3	29.4	29.3	24.8	4.5	20.3	29.4
New Zealand	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Norway	-	-	-	-	-	-	-	-	-	-	-	26.8	27.7	28.8	31.3	28.5	26.0	29.2	32.1	31.0	36.7	40.4	38.7	39.6	39.2	40.1	33.1	2.9	26.0	40.4
Portugal	-	-	-	-	-	-	-	22.5	27.5	26.6	28.2	32.4	26.2	28.8	33.0	36.3	36.2	33.3	36.5	40.3	39.7	39.0	39.0	35.8	42.5	43.7	34.1	4.9	22.5	43.7
Spain	-	-	-	-	-	-	-	14.7	20.7	19.4	19.8	20.7	18.7	21.3	22.5	25.6	24.4	26.6	24.3	27.8	28.4	30.4	29.9	29.9	31.3	33.2	24.7	8.7	14.7	33.2
Sweden	-	-	-	-	-	-	-	-	-	-	-	-	31.8	35.5	32.0	34.5	39.4	40.2	38.2	40.5	37.4	40.8	39.0	39.7	40.2	39.2	37.7	2.0	31.8	40.8
United Kingdom	-	-	-	-	-	-	-	25.0	28.5	28.6	28.0	29.0	31.0	-	31.2	31.2	28.3	31.0	31.4	31.8	33.4	33.4	34.0	35.2	36.6	36.4	31.3	2.0	25.0	36.6
United States	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Average	-	-	-	-	-	-	-	19.2	21.1	21.3	21.7	23.2	23.8	25.6	25.5	26.9	27.1	27.7	28.8	28.9	30.0	31.3	32.2	32.1	32.6	33.4				
Std. Dev.	-	-	-	-	-	-	-	4.6	5.4	5.8	6.0	5.9	5.9	5.2	6.3	6.1	7.4	7.4	6.4	7.0	7.4	7.1	6.2	6.1	7.3	7.0				
Min	-	-	-	-	-	-	-	14.7	12.2	10.7	15.0	15.9	15.6	16.0	15.4	18.0	17.4	17.0	19.4	17.6	16.4	20.0	21.2	23.1	17.2	20.9				
Max	-	-	-	-	-	-	-	25.0	28.5	28.6	32.7	33.2	31.8	35.5	33.4	36.3	39.4	40.2	38.2	40.5	41.3	41.6	40.9	42.4	42.5	43.7				

Source(s): see 'Data Sources'

Table C.33. **Gender gap in the proportion of employees with top quintile annual earnings for employees with low education (ISCED levels 0-2) (dependent employees, 25-54 year olds, five-year intervals), by country**

	Gender gap in the proportion of employees with top quintile annual earnings for employees with low education (ISCED levels 0-2) (dependent employees, 25-54 year olds, five-year intervals)									
	1985 - 1989	1990 - 1994	1995 - 1999	2000 - 2004	2005 - 2009	2010	Ave.	Std. Dev.	Min	Max
Australia	16.5	-	-	-	-	-	-	-	-	-
Austria	-	7.5	15.5	9.1	-	-	12.3	4.2	9.1	15.5
Belgium	-	12.1	13.3	11.2	-	-	12.3	1.0	11.2	13.3
Canada	16.5	15.7	15.1	14.9	14.3	9.1	13.3	2.7	9.1	15.1
Denmark	16.2	13.8	13.1	10.6	-	-	11.8	2.3	10.6	13.1
Finland	12.1	10.3	16.2	9.5	7.6	8.3	10.4	3.1	7.6	16.2
France	13.5	8.3	-	9.3	8.8	-	9.1	2.4	8.8	9.3
Germany	-	15.0	-	12.8	8.1	6.8	9.3	3.9	6.8	12.8
Greece	-	-	13.0	12.0	8.5	9.8	10.8	2.0	8.5	13.0
Ireland	-	15.2	17.8	11.2	6.6	5.6	10.3	5.3	5.6	17.8
Italy	12.2	11.7	12.8	11.7	12.0	12.5	12.2	0.4	11.7	12.8
Luxembourg	8.1	12.1	4.7	5.8	3.4	4.3	4.6	3.2	3.4	5.8
Netherlands	-	9.3	9.0	8.1	7.9	7.8	8.2	0.7	7.8	9.0
New Zealand	-	-	-	-	-	-	-	-	-	-
Norway	12.1	13.5	16.4	15.0	-	-	15.7	1.9	15.0	16.4
Portugal	-	-	-	-	-	-	-	-	-	-
Spain	-	10.1	7.8	8.6	8.1	8.1	8.2	0.9	7.8	8.6
Sweden	-	15.3	12.4	11.3	13.1	-	12.3	1.7	11.3	13.1
United Kingdom	-	-	11.0	8.9	7.7	4.8	8.1	2.6	4.8	11.0
United States	8.9	5.2	6.5	3.2	2.9	3.1	3.9	2.4	2.9	6.5
Average	12.9	11.7	12.3	10.2	8.4	7.3				
Std. Dev.	3.1	3.2	3.8	3.0	3.3	2.7				
Min	8.1	5.2	4.7	3.2	2.9	3.1				
Max	16.5	15.7	17.8	15.0	14.3	12.5				

Source(s): see 'Data Sources'

Table C.34. **Gender gap in the proportion of employees with top quintile annual earnings for employees with medium education (ISCED levels 3-4) (dependent employees, 25-54 year olds, five-year intervals), by country**

	Gender gap in the proportion of employees with top quintile annual earnings for employees with medium education (ISCED levels 3-4) (dependent employees, 25-54 year olds, five-year intervals)									
	1985 - 1989	1990 - 1994	1995 - 1999	2000 - 2004	2005 - 2009	2010	Ave.	Std. Dev.	Min	Max
Australia	19.8	-	18.9	-	-	-	18.9	0.7	18.9	18.9
Austria	-	18.3	16.9	19.2	-	-	18.1	1.1	16.9	19.2
Belgium	-	18.0	19.2	22.2	-	-	20.7	2.1	19.2	22.2
Canada	25.0	23.1	20.5	18.2	15.2	15.5	17.4	4.0	15.2	20.5
Denmark	25.0	21.5	19.4	18.0	-	-	18.7	3.0	18.0	19.4
Finland	18.6	16.4	14.3	11.9	12.6	9.6	12.1	3.3	9.6	14.3
France	18.2	15.8	-	11.9	14.4	-	13.1	2.6	11.9	14.4
Germany	-	16.3	-	13.9	12.4	14.1	13.4	1.6	12.4	14.1
Greece	-	-	22.3	16.2	14.1	11.8	16.1	4.5	11.8	22.3
Ireland	-	27.1	23.5	21.8	12.6	15.7	18.4	5.9	12.6	23.5
Italy	26.8	24.9	25.0	19.3	19.4	20.6	21.1	3.3	19.3	25.0
Luxembourg	25.2	16.3	19.0	15.7	14.2	15.1	16.0	4.1	14.2	19.0
Netherlands	-	21.6	21.1	19.1	19.5	18.4	19.5	1.4	18.4	21.1
New Zealand	-	-	-	-	-	-	-	-	-	-
Norway	28.0	24.5	26.3	21.8	-	-	24.0	2.6	21.8	26.3
Portugal	-	-	-	-	-	-	-	-	-	-
Spain	-	19.2	17.6	17.1	18.3	16.3	17.3	1.1	16.3	18.3
Sweden	-	23.9	21.8	22.1	18.6	-	20.9	2.2	18.6	22.1
United Kingdom	-	-	21.3	18.3	17.0	14.3	17.7	2.9	14.3	21.3
United States	22.6	16.9	16.0	14.2	12.5	11.3	13.5	4.0	11.3	16.0
Average	23.2	20.3	20.2	17.7	15.4	14.8				
Std. Dev.	3.6	3.8	3.2	3.4	2.8	3.2				
Min	18.2	15.8	14.3	11.9	12.4	9.6				
Max	28.0	27.1	26.3	22.2	19.5	20.6				

Source(s): see 'Data Sources'

Table C.35. **Gender gap in the proportion of employees with top quintile annual earnings for employees with high education (ISCED levels 5-6) (dependent employees, 25-54 year olds, five-year intervals), by country**

	Gender gap in the proportion of employees with top quintile annual earnings for employees with high education (ISCED levels 5-6) (dependent employees, 25-54 year olds, five-year intervals)									
	1985 - 1989	1990 - 1994	1995 - 1999	2000 - 2004	2005 - 2009	2010	Ave.	Std. Dev.	Min	Max
Australia	37.9	-	28.2	20.7	-	-	24.5	8.6	20.7	28.2
Austria	-	33.1	42.4	30.5	-	-	36.4	6.2	30.5	42.4
Belgium	-	31.2	35.6	39.2	-	-	37.4	4.0	35.6	39.2
Canada	30.8	28.0	25.1	23.1	19.7	19.3	21.8	4.6	19.3	25.1
Denmark	43.1	45.6	39.5	33.6	-	-	36.5	5.2	33.6	39.5
Finland	44.0	35.2	35.5	37.1	36.7	34.8	36.0	3.4	34.8	37.1
France	37.7	31.9	-	29.5	27.5	-	28.5	4.4	27.5	29.5
Germany	-	35.5	-	39.9	41.0	36.2	39.0	2.7	36.2	41.0
Greece	-	-	29.5	21.7	21.7	22.5	23.9	3.8	21.7	29.5
Ireland	-	26.4	30.6	30.0	25.9	22.1	27.1	3.5	22.1	30.6
Italy	39.2	34.4	34.7	32.4	28.5	32.9	32.1	3.5	28.5	34.7
Luxembourg	48.4	31.5	32.9	29.9	31.5	33.0	31.8	6.9	29.9	33.0
Netherlands	-	47.3	44.8	45.2	40.1	40.0	42.5	3.2	40.0	45.2
New Zealand	-	-	-	-	-	-	-	-	-	-
Norway	48.9	45.6	40.8	41.0	-	-	40.9	3.9	40.8	41.0
Portugal	-	-	-	-	-	-	-	-	-	-
Spain	-	22.8	28.3	18.5	14.7	16.1	19.4	5.5	14.7	28.3
Sweden	-	45.8	42.5	37.2	32.4	-	37.4	5.9	32.4	42.5
United Kingdom	-	-	31.6	28.9	27.3	23.1	27.7	3.5	23.1	31.6
United States	36.6	28.6	25.5	27.1	25.9	23.4	25.5	4.6	23.4	27.1
Average	40.7	34.9	34.2	31.4	28.7	27.6				
Std. Dev.	5.9	7.8	6.3	7.5	7.7	8.0				
Min	30.8	22.8	25.1	18.5	14.7	16.1				
Max	48.9	47.3	44.8	45.2	41.0	40.0				

Source(s): see 'Data Sources'

Appendix D. Second statistical appendix to chapters 5, 6 and 7: additional regression models

Table D.1. **Additional two-way fixed effects models for the gender gap in the labour force participation rate (25-54 years old), using the normal OLS standard errors**

	Specification set:	Main specification					Alternative measure of leave policy, with squared term					
	Model:	**A**		**B**		**C**	**D**		**E**		**F**	
	Dependent variable:	Gender gap in the labour force participation rate (25-54 year olds)		Male labour force participation rate (25-54 year olds)		Female labour force participation rate (25-54 year olds)	Gender gap in the labour force participation rate (25-54 year olds)		Male labour force participation rate (25-54 year olds)		Female labour force participation rate (25-54 year olds)	
Lag	Variable	B	SE	B	SE	B	SE		B	SE	B	SE
	Dual earner-carer leave policy											
t-1	Mother-specific earnings-related leave	-0.107	(0.049) *	0.124	(0.032) ***	0.231	(0.064) ***					
t	Father-specific leave	-0.014	(0.031)	-0.005	(0.020)	0.009	(0.040)		0.022	(0.032)	-0.021	(0.021)	-0.042	(0.042)
t-1	Gender-neutral earnings-related parental leave	-0.034	(0.018) ^	0.014	(0.012)	0.047	(0.023) *					
	Dual earner childcare policy											
t-1	Children under 3 in public childcare	-0.121	(0.025) ***	0.059	(0.016) ***	0.180	(0.032) ***		-0.117	(0.025) ***	0.068	(0.016) ***	0.186	(0.033) **
t-1	Children 3-6 in public pre-primary care or primary school	-0.017	(0.010) ^	0.008	(0.006)	0.025	(0.013) *		-0.014	(0.010)	0.005	(0.006)	0.019	(0.012)
t-1	Public expenditure on childcare services	0.258	(0.107) *	0.162	(0.069) *	-0.097	(0.138)		0.239	(0.106) *	0.175	(0.070) *	-0.064	(0.138)
	General family support policy											
t	Child benefit per month for two chlldren	-0.033	(0.028)	0.026	(0.018)	0.060	(0.036) ^		-0.026	(0.028)	0.030	(0.019)	0.056	(0.037)
t	Tax support for families	-0.038	(0.035)	0.000	(0.023)	0.038	(0.046)		-0.035	(0.034)	0.008	(0.022)	0.043	(0.044)
t-1	Flat-rate parental leave and childcare leave	-0.004	(0.013)	0.011	(0.009)	0.015	(0.017)					
	Alternative measures of leave policy											
t-1	Total maternity and parental leave available to mothers								-0.109	(0.047) *	0.072	(0.031) *	0.180	(0.061) **
t-1	(Total maternity and parental leave available to mothers)^2								0.001	(0.001)	-0.001	(0.000)	-0.002	(0.001) ^
t-1	Childcare leave								0.011	(0.012)	0.007	(0.008)	-0.005	(0.015)
t-1	Service Sector Size	-0.087	(0.042) *	0.025	(0.027)	0.112	(0.054) *		-0.077	(0.042) ^	0.021	(0.028)	0.098	(0.054) ^
t-1	Public Sector Size	0.299	(0.074) ***	-0.019	(0.048)	-0.318	(0.096) **		0.325	(0.074) **	-0.013	(0.049)	-0.338	(0.096) ***
t-1	Crude birth rate	0.219	(0.077) **	-0.011	(0.050)	-0.229	(0.099) *		0.165	(0.078) *	0.008	(0.051)	-0.157	(0.101)
t-5	Female share of tertiary education students	-0.023	(0.042)	0.013	(0.027)	0.036	(0.054)		-0.023	(0.042)	0.022	(0.027)	0.046	(0.054)
t	Employment protection legislation index	-0.389	(0.478)	0.230	(0.309)	0.619	(0.617)		-0.406	(0.470)	0.112	(0.309)	0.519	(0.610)
	Joint F-test on total leave available to mothers and its square (d.f)								5.97 (2, 409) **		4.83 (2, 409) **		8.94 (2, 409) ***	
	n	486		486		486			486		486		486	
	r-squared (within)	0.985		0.756		0.971			0.985		0.752		0.972	

Note: * = p<0.05 ** = p<0.01 *** = p<0.001. ^ = p<0.1. The joint F-test on total maternity and parental leave available to mothers and its square tests the null that the two are jointly equal to zero.

Specifications:

A-C. Two-way fixed effects (country and time) with country-specific time-trends and the normal OLS standard errors. Main specification

D-F. Two-way fixed effects (country and time) with country-specific time-trends and OLS SEs. Leave indicators simplified into 'Total effective weeks of maternity and parental leave available to mothers' and its sqaure, plus 'Effective weeks of father-specific leave' and 'Effective weeks of childcare leave'.

Table D.2. **Additional two-way fixed effects models for the gender gap in usual weekly working hours, using normal OLS standard errors**

	Specification set:	Female employment rate as a control						Alternative measures of leave policy with squared term, plus female employment as a control					
	Model:	**A**		**B**		**C**		**D**		**E**		**F**	
	Dependent variable:	Gender gap in usual weekly working hours		Male usual weekly working hour		Female usual weekly working hours		Gender gap in usual weekly working hours		Male usual weekly working hour		Female usual weekly working hours	
Lag	Variable	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE
	Dual earner-carer leave policy												
t-1	Mother-specific earnings-related leave	-0.040	(0.022) ^	-0.068	(0.026) *	-0.028	(0.019)						
t	Father-specific leave	-0.003	(0.013)	0.030	(0.016) ^	0.033	(0.012) **	0.002	(0.014)	0.049	(0.017) **	0.046	(0.012) ***
t-1	Gender-neutral earnings-related parental leave	-0.020	(0.009) *	-0.013	(0.011)	0.007	(0.008)						
	Dual earner childcare policy												
t-1	Children under 3 in public childcare	-0.008	(0.013)	-0.018	(0.016)	-0.010	(0.011)	-0.006	(0.014)	-0.010	(0.017)	-0.005	(0.012)
t-1	Children 3-6 in public pre-primary care or primary school	-0.010	(0.004) *	-0.003	(0.005)	0.007	(0.004) *	-0.009	(0.004) *	-0.001	(0.005)	0.009	(0.004) *
t-1	Public expenditure on childcare services	0.074	(0.049)	-0.031	(0.058)	-0.105	(0.042) *	0.066	(0.049)	-0.037	(0.058)	-0.103	(0.041) *
	General family support policy												
t	Child benefit per month for two chIldren	-0.018	(0.012)	-0.029	(0.014) *	-0.010	(0.010)	-0.014	(0.012)	-0.022	(0.015)	-0.009	(0.011)
t	Tax support for families	-0.005	(0.018)	-0.026	(0.021)	-0.021	(0.015)	0.005	(0.017)	-0.021	(0.020)	-0.026	(0.015) ^
t-1	Flat-rate parental leave and childcare leave	0.003	(0.006)	0.000	(0.007)	-0.002	(0.005)						
	Alternative measures of leave policy												
t-1	Total maternity and parental leave available to mothers							-0.006	(0.022)	-0.034	(0.026)	-0.028	(0.019)
t-1	(Total maternity and parental leave available to mothers)^2							0.000	(0.000)	0.000	(0.000)	0.000	(0.000)
t-1	Childcare leave							0.002	(0.005)	0.008	(0.006)	0.006	(0.005)
t-1	Service Sector Size	0.078	(0.019) ***	-0.011	(0.022)	-0.090	(0.016) ***	0.079	(0.019) ***	-0.007	(0.022)	-0.085	(0.016) ***
t-1	Public Sector Size	0.090	(0.037) *	0.000	(0.044)	-0.090	(0.031) **	0.093	(0.037) *	0.009	(0.044)	-0.084	(0.031) **
t-1	Crude birth rate	-0.054	(0.035)	-0.059	(0.042)	-0.005	(0.030)	-0.062	(0.038)	-0.101	(0.044) *	-0.039	(0.032)
t-5	Female share of tertiary education students	0.037	(0.018) *	0.018	(0.022)	-0.019	(0.016)	0.038	(0.019) *	0.019	(0.022)	-0.020	(0.016)
t	Employment protection legislation index	-0.527	(0.208) *	-0.462	(0.248) ^	0.064	(0.178)	-0.422	(0.207) *	-0.397	(0.244)	0.025	(0.175)
t-1	Female employment rate (25-54 year olds)	0.095	(0.016) ***	0.035	(0.019) ^	-0.060	(0.013) ***	0.091	(0.016) ***	0.035	(0.019) ^	-0.057	(0.013) ***
	Joint F-test on total leave available to mothers and its square (d.f)							1.02	(2, 339)	3.71	(2, 339) *	2.49	(2, 339) ^
	n	415		415		415		415		415		415	
	r-squared (within)	0.908		0.826		0.900		0.906		0.827		0.901	

Note : * = p<0.05 ** = p<0.01 *** = p<0.001. ^ = p<0.1. USA excluded from all specifications due to missing data. The joint F-test on total maternity and parental leave available to mothers and its square tests the null that the two are jointly equal to zero.

Specifications :

A-C. Two-way fixed effects (country and time) with country-specific time-trends and the normal OLS standard errors. Female employment rate (25-54 year olds) as a control.

D-F. Two-way fixed effects (country and time) with country-specific time-trends and the normal OLS standard errors. Leave indicators simplified into 'Total effective weeks of maternity and parental leave available to mothers' and its sqaure, plus 'Effective weeks of father-specific leave' and 'Effective weeks of childcare leave'. Female employment rate (25-54 year olds) as a control.

Table D.3. **Additional two-way fixed effects regression models for the gender gap in the proportion of employees with top quintile earnings, using CRSEs**

	Specification set:	Main specification			Alternative measures of leave policy, with sqaured term		
	Model:	**A**	**B**	**C**	**D**	**E**	**F**
	Dependent variable:	Gender gap in top quintile earnings (5-year interval)	Proportion of male employees with top quintile earnings (5-year interval)	Proportion of female employees with top quintile earnings (5-year interval)	Gender gap in top quintile earnings (5-year interval)	Proportion of male employees with top quintile earnings (5-year interval)	Proportion of female employees with top quintile earnings (5-year interval)
Lag	Variable	B SE	B SE	B SE	B SE	B SE	B SE
	Dual earner-carer leave policy						
t	Mother-specific earnings-related leave	0.121 (0.330)	0.008 (0.128)	-0.113 (0.228)			
t	Father-specific leave	-0.070 (0.184)	-0.021 (0.086)	0.049 (0.107)	-0.334 (0.115) *	-0.157 (0.070) *	0.177 (0.062) *
t	Gender-neutral earnings-related parental leave	0.222 (0.121) ^	0.101 (0.071)	-0.122 (0.070) ^			
	Dual earner childcare policy						
t	Children under 3 in public childcare	-0.015 (0.157)	0.013 (0.095)	0.028 (0.069)	-0.138 (0.140)	-0.047 (0.090)	0.091 (0.062)
t	Children 3-6 in public pre-primary care or primary school	-0.063 (0.034) ^	-0.019 (0.014)	0.043 (0.021) ^	-0.057 (0.029) ^	-0.016 (0.014)	0.041 (0.018) *
t	Public expenditure on childcare services	-0.356 (0.359)	-0.133 (0.241)	0.223 (0.162)	0.407 (0.318)	0.243 (0.231)	-0.164 (0.179)
	General family support policy						
t	Child benefit per month for two chlldren	0.234 (0.181)	0.138 (0.087)	-0.096 (0.113)	0.174 (0.125)	0.099 (0.077)	-0.075 (0.076)
t	Tax support for families	0.445 (0.267)	0.211 (0.129)	-0.234 (0.163)	0.309 (0.217)	0.125 (0.108)	-0.184 (0.124)
t	Flat-rate parental leave and childcare leave	-0.075 (0.111)	-0.069 (0.054)	0.006 (0.082)			
	Alternative measures of leave policy						
t	Total maternity and parental leave available to mothers				0.578 (0.220) *	0.324 (0.146) *	-0.254 (0.120) *
t	(Total maternity and parental leave available to mothers)^2				-0.005 (0.003) ^	-0.004 (0.002) ^	0.002 (0.002)
t	Childcare leave				-0.144 (0.061) *	-0.081 (0.046) ^	0.062 (0.051)
t	Service Sector Size	-0.243 (0.231)	-0.076 (0.121)	0.167 (0.138)	-0.396 (0.219) ^	-0.148 (0.114)	0.249 (0.121) ^
t	Public Sector Size	-0.987 (0.463) *	-0.673 (0.324) ^	0.314 (0.211)	-1.700 (0.362) ***	-1.003 (0.306) **	0.697 (0.181) **
t	Crude birth rate	0.063 (0.470)	0.169 (0.222)	0.106 (0.288)	0.499 (0.379)	0.385 (0.182) ^	-0.114 (0.266)
t-1	Female share of tertiary education students	-0.277 (0.301)	-0.109 (0.168)	0.168 (0.160)	-0.399 (0.213) ^	-0.144 (0.117)	0.255 (0.146) *
t	Employment protection legislation index	1.481 (1.292)	-0.032 (0.607)	-1.513 (0.907)	2.800 (1.250) *	0.836 (0.580)	-1.964 (0.837)
t	Economic freedom index	0.109 (1.546)	0.229 (0.858)	0.120 (1.068)	-0.304 (1.353)	0.226 (0.910)	0.530 (1.004)
	Joint F-test on total leave available to mothers and its square (d.f)				4.420 (2, 17) *	2.870 (2, 17) *	4.380 (2, 17) *
	n	85	85	85	85	85	85
	r-squared (within)	0.912	0.885	0.933	0.930	0.899	0.946

Note: * = p<0.05 ** = p<0.01 *** = p<0.001. ^ = p<0.1. New Zealand and Portugal excluded from all specifications due to missing data. Finland in 2010 exluded from all specifications as diagnostics suggest it is a highly influential point that considerably changes results and inferences (see appendix **E**). The joint F-test on total maternity and parental leave available to mothers and its square tests the null that the two are jointly equal to zero.

Specifications :

A-C. Two-way fixed effects (country and time) with country-specific time-trends and cluster robust standard errors (CRSEs). Main specification

D-F. Two-way fixed effects (country and time) with country-specific time-trends and CRSEs. Leave indicators simplified into 'Total effective weeks of maternity and parental leave available to mothers' and its square, plus 'Effective weeks of father-specific leave' and 'Effective weeks of childcare leave'.

Table D.4. **Additional two-way fixed effects models for the gender gap in the labour force participation rate (25-49 year olds), by education level, with interaction term between the dual earner policy indicators and a 'Scandinavia' dummy**

	Specification set:	Interaction terms between the dual earner policy indicators and a 'Scandinavia' dummy															
	Education level:	Low education (ISCED 0-2)						Medium education (ISCED 3-4)						High education (ISCED 5-6)			
	Model:	**A**		**B**		**C**		**D**		**E**		**F**		**G**		**H**		**I**	
	Dependent variable:	Gender gap in the labour force participation rate		Male labour force participation rate (25-54 years)		Female labour force participation rate (25-54 years)		Gender gap in the labour force participation rate		Male labour force participation rate (25-54 years)		Female labour force participation rate (25-54 years)		Gender gap in the labour force participation rate		Male labour force participation rate (25-54 years)		Female labour force participation rate (25-54 years)	
Lag	Variable	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE
	Dual earner-carer leave policy																		
t-1	Mother-specific earnings-related leave	0.061	(0.136)	0.080	(0.137)	0.019	(0.198)	-0.017	(0.093)	-0.115	(0.102)	-0.098	(0.122)	0.051	(0.055)	0.041	(0.056)	-0.010	(0.089)
t	Father-specific leave	0.060	(0.058)	0.002	(0.033)	-0.057	(0.069)	0.055	(0.059)	0.075	(0.042) ^	0.020	(0.078)	-0.147	(0.043) **	-0.056	(0.045)	0.091	(0.053)
t-1	Gender-neutral earnings-related parental leave	-0.041	(0.027)	-0.023	(0.028)	0.018	(0.023)	-0.014	(0.030)	-0.001	(0.012)	0.014	(0.029)	0.003	(0.018)	0.019	(0.017)	0.015	(0.028)
	Dual earner childcare policy																		
t-1	Children under 3 in public childcare	-0.084	(0.133)	0.035	(0.080)	0.119	(0.172)	-0.009	(0.082)	0.032	(0.055)	0.040	(0.096)	0.040	(0.088)	-0.034	(0.072)	-0.074	(0.112)
t-1	Children 3-6 in public pre-primary care or primary school	-0.026	(0.023)	0.005	(0.025)	0.031	(0.040)	-0.041	(0.026)	0.015	(0.017)	0.056	(0.036)	-0.041	(0.009) ***	0.008	(0.008)	0.049	(0.014) **
t-1	Public expenditure on childcare services	0.531	(0.418)	-0.266	(0.290)	-0.797	(0.396) ^	0.179	(0.263)	-0.219	(0.120) ^	-0.398	(0.284)	-0.168	(0.152)	-0.197	(0.147)	-0.028	(0.188)
	General family support policy																		
t	Child benefit per month for two chlldren	-0.022	(0.105)	0.015	(0.062)	0.038	(0.109)	-0.057	(0.066)	0.007	(0.052)	0.064	(0.068)	-0.014	(0.071)	-0.019	(0.033)	-0.005	(0.071)
t	Tax support for families	-0.162	(0.083) ^	0.024	(0.079)	0.186	(0.088) ^	-0.076	(0.082)	0.060	(0.039)	0.136	(0.100)	-0.084	(0.068)	-0.024	(0.051)	0.060	(0.069)
t-1	Flat-rate parental leave and childcare leave	-0.066	(0.037) ^	0.014	(0.028)	0.080	(0.041) ^	-0.039	(0.033)	0.019	(0.016)	0.058	(0.025) *	-0.009	(0.018)	0.012	(0.015)	0.021	(0.025)
	Dual earner-carer leave policy interactions with 'Scandinavia' dummy																		
t-1	Scandinavia * mother-specific earnings-related leave	-0.675	(0.418)	-0.726	(0.287) *	-0.050	(0.429)	-0.260	(0.317)	-0.144	(0.171)	0.116	(0.293)	0.061	(0.127)	-0.038	(0.112)	-0.099	(0.196)
t	Scandinavia * father-specific leave	-0.404	(0.383)	-0.495	(0.291)	-0.090	(0.460)	-0.018	(0.228)	-0.129	(0.141)	-0.111	(0.232)	0.106	(0.223)	0.049	(0.091)	-0.057	(0.240)
t-1	Scandinavia * gender-neutral earnings-related parental leave	-0.396	(0.163) *	0.324	(0.158) ^	0.720	(0.114) ***	-0.139	(0.114)	0.086	(0.047) ^	0.225	(0.115) ^	0.000	(0.067)	0.174	(0.080) *	0.174	(0.122)
	Dual earner childcare policy interactions with 'Scandinavia'																		
t-1	Scandinavia * children under 3 in public childcare	-0.119	(0.180)	0.185	(0.148)	0.304	(0.249)	-0.040	(0.169)	0.059	(0.073)	0.099	(0.163)	-0.091	(0.104)	0.045	(0.086)	0.136	(0.137)
t-1	Scandinavia * children 3-6 in public pre-primary or primary school	0.098	(0.026) **	-0.069	(0.040)	-0.167	(0.052) **	0.064	(0.030) *	-0.052	(0.026) ^	-0.116	(0.046) *	0.045	(0.022) ^	-0.067	(0.022) **	-0.112	(0.036) **
t-1	Scandinavia * public expenditure on childcare services	-0.507	(1.147)	1.297	(0.729) ^	1.804	(0.660) *	-0.488	(0.743)	1.295	(0.328) **	1.783	(0.979) ^	-0.156	(0.577)	0.625	(0.453)	0.781	(0.321) *
t-1	Service Sector Size	-0.102	(0.163)	-0.013	(0.085)	0.089	(0.193)	0.070	(0.138)	0.120	(0.054) *	0.050	(0.144)	-0.094	(0.086)	-0.011	(0.039)	0.083	(0.098)
t-1	Public Sector Size	0.163	(0.299)	-0.098	(0.177)	-0.261	(0.313)	0.233	(0.353)	-0.134	(0.108)	-0.367	(0.323)	0.173	(0.204)	-0.008	(0.135)	-0.181	(0.190)
t-1	Crude birth rate	0.578	(0.234) *	0.178	(0.375)	-0.400	(0.401)	0.472	(0.410)	-0.111	(0.213)	-0.583	(0.495)	0.318	(0.298)	-0.066	(0.165)	-0.383	(0.379) *
t	Employment protection legislation index	-3.088	(0.903) **	0.017	(0.581)	3.105	(0.955) **	-3.827	(0.641) ***	-0.881	(0.590)	2.946	(0.649) ***	-1.393	(0.711) ^	0.749	(0.425) ^	2.142	(0.840)
	n	282		282		282		282		282		282		282		282		282	
	r-squared (within)	0.921		0.679		0.900		0.904		0.527		0.874		0.718		0.561		0.734	

Note : * = p<0.05 ** = p<0.01 *** = p<0.001. ^ = p<0.1. Australia, Canada, New Zealand and United States missing entirely.

Specifications :

A-I. Two-way fixed effects (country and time) with country-specific time-trends and CRSEs. Alternative set of leave policies and an additional interaction terms between a 'Scandinavia' dummy (1=Denmark, Finland, Norway, Sweden) andthe dual earner-carer leave policy and dual earner childcare policy indicators

Table D.5. **Full results from two-way fixed effects models for the gender gap in the labour force participation rate (25-49 year olds), by education level**

	Specification set:	Main specification															
	Education level:	Low education (ISCED 0-2)						Medium education (ISCED 3-4)						High education (ISCED 5-6)			
	Model:	**A**		**B**		**C**		**D**		**E**		**F**		**G**		**H**		**I**	
	Dependent variable:	Gender gap in the labour force participation rate (25-49 year olds)		Male labour force participation rate (25-49 year olds)		Female labour force participation rate (25-49 year olds)		Gender gap in the labour force participation rate (25-49 year olds)		Male labour force participation rate (25-49 year olds)		Female labour force participation rate (25-49 year olds)		Gender gap in the labour force participation rate (25-49 year olds)		Male labour force participation rate (25-49 year olds)		Female labour force participation rate (25-49 year olds)	
Lag	Variable	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE
	Dual earner-carer leave policy																		
t-1	Mother-specific earnings-related leave	-0.118	(0.182)	-0.025	(0.130)	0.093	(0.210)	-0.084	(0.123)	-0.140	(0.087)	-0.056	(0.130)	0.062	(0.043)	0.053	(0.061)	-0.009	(0.080)
t	Father-specific leave	0.056	(0.056)	-0.040	(0.053)	-0.096	(0.072)	0.059	(0.055)	0.068	(0.041)	0.009	(0.069)	-0.142	(0.043) **	-0.061	(0.046)	0.081	(0.055)
t-1	Gender-neutral earnings-related parental leave	-0.094	(0.074)	0.014	(0.070)	0.108	(0.115)	-0.033	(0.035)	0.000	(0.026)	0.034	(0.052)	0.013	(0.019)	0.039	(0.033)	0.026	(0.044)
	Dual earner childcare policy																		
t-1	Children under 3 in public childcare	-0.157	(0.064) *	0.124	(0.115)	0.280	(0.151) ^	-0.047	(0.057)	0.109	(0.048) *	0.156	(0.065) *	-0.022	(0.049)	0.008	(0.054)	0.030	(0.063)
t-1	Children 3-6 in public pre-primary care or primary school	0.003	(0.031)	-0.012	(0.018)	-0.015	(0.042)	-0.023	(0.023)	0.002	(0.014)	0.025	(0.033)	-0.025	(0.012) ^	-0.010	(0.013)	0.015	(0.023)
t-1	Public expenditure on childcare services	0.193	(0.293)	0.129	(0.353)	-0.065	(0.350)	0.006	(0.218)	0.119	(0.195)	0.113	(0.318)	-0.252	(0.169)	0.025	(0.187)	0.278	(0.216)
	General family support policy																		
t	Child benefit per month for two chlldren	-0.065	(0.118)	0.063	(0.048)	0.128	(0.109)	-0.075	(0.075)	0.037	(0.048)	0.112	(0.074)	-0.026	(0.065)	0.005	(0.030)	0.031	(0.068)
t	Tax support for families	-0.198	(0.079) *	0.048	(0.084)	0.245	(0.089) *	-0.088	(0.084)	0.068	(0.056)	0.156	(0.107)	-0.093	(0.065)	-0.014	(0.051)	0.079	(0.072)
t-1	Flat-rate parental leave and childcare leave	-0.061	(0.032) ^	0.033	(0.053)	0.094	(0.059)	-0.042	(0.031)	0.020	(0.025)	0.062	(0.042)	-0.009	(0.016)	0.017	(0.024)	0.025	(0.031)
t-1	Service Sector Size	-0.142	(0.154)	-0.014	(0.080)	0.127	(0.200)	0.058	(0.135)	0.121	(0.062) ^	0.063	(0.158)	-0.083	(0.087)	-0.006	(0.052)	0.077	(0.109)
t-1	Public Sector Size	0.770	(0.422) ^	-0.166	(0.181)	-0.936	(0.519) ^	0.493	(0.339)	-0.266	(0.103) *	-0.760	(0.350) *	0.223	(0.189)	-0.212	(0.152)	-0.435	(0.230) ^
t-1	Crude birth rate	0.493	(0.292)	0.297	(0.465)	-0.196	(0.630)	0.437	(0.393)	0.001	(0.260)	-0.436	(0.547)	0.309	(0.266)	0.020	(0.260)	-0.289	(0.416)
t	Employment protection legislation index	-3.444	(0.839) ***	-0.353	(0.665)	3.091	(1.102) *	-3.966	(0.727) ***	-1.108	(0.600) ^	2.858	(0.798) **	-1.232	(0.736)	0.722	(0.430)	1.954	(0.813) *
	n	282		282		282		282		282		282		282		282		282	
	r-squared (within)	0.911		0.626		0.868		0.901		0.462		0.859		0.714		0.490		0.708	

Note : * = p<0.05 ** = p<0.01 *** = p<0.001. ^ = p<0.1. Australia, Canada, New Zealand and United States missing entirely. Certain results are sensitive to the omission of influential observations (see appendix **E** for diagnostics).

Specifications :

A-I. Two-way fixed effects (country and time) with country-specific time-trends and cluster robust standard errors (CRSEs). Main specification

Table D.6. **Full results from two-way fixed effects models for the gender gap in the labour force participation rate (25-29 year olds), by education level**

	Specification set:	Main specification															
	Education level:	Low education (ISCED 0-2)						Medium education (ISCED 3-4)						High education (ISCED 5-6)			
	Model:	**A**		**B**		**C**		**D**		**E**		**F**		**G**		**H**		**I**	
	Dependent variable:	Gender gap in the labour force participation rate (25-29 year olds)		Male labour force participation rate (25-29 year olds)		Female labour force participation rate (25-29 year olds)		Gender gap in the labour force participation rate (25-29 year olds)		Male labour force participation rate (25-29 year olds)		Female labour force participation rate (25-29 year olds)		Gender gap in the labour force participation rate (25-29 year olds)		Male labour force participation rate (25-29 year olds)		Female labour force participation rate (25-29 year olds)	
Lag	Variable	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE
	Dual earner-carer leave policy																		
t-1	Mother-specific earnings-related leave	-0.973	(0.316) **	-0.264	(0.379)	0.708	(0.235) **	-0.211	(0.206)	-0.239	(0.158)	-0.028	(0.139)	0.091	(0.125)	0.095	(0.119)	0.004	(0.111)
t	Father-specific leave	0.217	(0.173)	0.073	(0.108)	-0.144	(0.164)	0.038	(0.071)	0.256	(0.093) *	0.218	(0.076) *	-0.509	(0.205) *	-0.410	(0.237)	0.099	(0.076)
t-1	Gender-neutral earnings-related parental leave	-0.184	(0.141)	-0.069	(0.103)	0.115	(0.071)	-0.043	(0.060)	0.040	(0.028)	0.083	(0.050)	0.040	(0.068)	0.098	(0.082)	0.058	(0.090)
	Dual earner childcare policy																		
t-1	Children under 3 in public childcare	-0.540	(0.187) *	0.047	(0.116)	0.587	(0.197) **	-0.037	(0.091)	0.108	(0.076)	0.145	(0.083) ^	0.139	(0.135)	0.076	(0.179)	-0.063	(0.135)
t-1	Children 3-6 in public pre-primary care or primary school	0.077	(0.069)	0.057	(0.023) *	-0.020	(0.066)	-0.027	(0.043)	-0.001	(0.017)	0.026	(0.049)	-0.012	(0.022)	-0.016	(0.024)	-0.004	(0.016)
t-1	Public expenditure on childcare services	2.322	(0.692) **	0.884	(0.502) ^	-1.438	(0.476) **	-0.788	(0.410) ^	-0.565	(0.324)	0.223	(0.359)	-0.686	(0.414)	-0.212	(0.511)	0.474	(0.300)
	General family support policy																		
t	Child benefit per month for two chlldren	-0.092	(0.258)	0.117	(0.195)	0.209	(0.165)	-0.068	(0.106)	0.007	(0.072)	0.074	(0.121)	0.027	(0.125)	-0.027	(0.119)	-0.054	(0.082)
t	Tax support for families	-0.553	(0.407)	-0.258	(0.228)	0.295	(0.276)	-0.007	(0.058)	0.158	(0.152)	0.165	(0.178)	0.153	(0.179)	0.133	(0.165)	-0.020	(0.114)
t-1	Flat-rate parental leave and childcare leave	0.058	(0.079)	0.039	(0.061)	-0.019	(0.093)	-0.053	(0.077)	0.028	(0.025)	0.081	(0.063)	0.062	(0.062)	-0.004	(0.068)	-0.066	(0.048)
t-1	Service Sector Size	0.101	(0.285)	-0.120	(0.195)	-0.221	(0.314)	-0.142	(0.186)	-0.031	(0.167)	0.110	(0.271)	-0.339	(0.170) ^	-0.221	(0.162)	0.117	(0.172)
t-1	Public Sector Size	1.537	(1.546)	0.050	(0.882)	-1.486	(0.833) ^	1.059	(0.516)	-0.310	(0.218)	-1.369	(0.401) **	0.257	(0.231)	-0.356	(0.260)	-0.613	(0.378)
t-1	Crude birth rate	2.472	(0.751) **	1.350	(0.866)	-1.122	(0.532) ^	0.270	(0.359)	-0.137	(0.331)	-0.407	(0.548)	-0.401	(0.378)	-0.010	(0.643)	0.391	(0.730)
t	Employment protection legislation index	-4.254	(1.443) *	-2.380	(1.766)	1.874	(1.524)	-2.514	(1.122) *	-1.332	(0.739) ^	1.182	(1.018)	0.703	(0.879)	3.026	(1.053) *	2.323	(0.954) *
	n	282		282		282		282		282		282		282		282		282	
	r-squared (within)	0.535		0.452		0.548		0.629		0.356		0.611		0.410		0.498		0.582	

Note : * = p<0.05 ** = p<0.01 *** = p<0.001. ^ = p<0.1. Australia, Canada, New Zealand and United States missing entirely. Certain results are sensitive to the omission of influential observations (see appendix **E** for diagnostics).

Specifications :

A-I. Two-way fixed effects (country and time) with country-specific time-trends and cluster robust standard errors (CRSEs). Main specification

Table D.7. **Full results from two-way fixed effects models for the gender gap in the labour force participation rate (30-34 year olds), by education level**

Specification set:		Main specification															
Education level:		Low education (ISCED 0-2)						Medium education (ISCED 3-4)						High education (ISCED 5-6)			
Model:		**A**		**B**		**C**		**D**		**E**		**F**		**G**		**H**		**I**	
Dependent variable:		Gender gap in the labour force participation rate (30-34 year olds)		Male labour force participation rate (30-34 year olds)		Female labour force participation rate (30-34 year olds)		Gender gap in the labour force participation rate (30-34 year olds)		Male labour force participation rate (30-34 year olds)		Female labour force participation rate (30-34 year olds)		Gender gap in the labour force participation rate (30-34 year olds)		Male labour force participation rate (30-34 year olds)		Female labour force participation rate (30-34 year olds)	
Lag	Variable	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE
	Dual earner-carer leave policy																		
t-1	Mother-specific earnings-related leave	-0.147	(0.251)	-0.128	(0.188)	0.019	(0.273)	0.092	(0.176)	-0.159	(0.040) **	-0.252	(0.148)	0.070	(0.103)	0.051	(0.046)	-0.020	(0.111)
t	Father-specific leave	0.003	(0.074)	-0.035	(0.086)	-0.038	(0.112)	0.021	(0.068)	0.064	(0.022) *	0.043	(0.066)	0.008	(0.075)	0.066	(0.032) ^	0.058	(0.078)
t-1	Gender-neutral earnings-related parental leave	-0.180	(0.064) *	0.034	(0.074)	0.214	(0.106) ^	-0.007	(0.041)	-0.045	(0.014) **	-0.037	(0.036)	-0.013	(0.026)	0.034	(0.039)	0.046	(0.048)
	Dual earner childcare policy																		
t-1	Children under 3 in public childcare	-0.276	(0.135) ^	0.228	(0.184)	0.503	(0.198) *	-0.055	(0.079)	0.137	(0.038) **	0.191	(0.066) *	-0.172	(0.148)	-0.092	(0.072)	0.079	(0.140)
t-1	Children 3-6 in public pre-primary care or primary school	-0.025	(0.024)	-0.068	(0.062)	-0.043	(0.048)	0.032	(0.038)	0.020	(0.006) **	-0.012	(0.038)	-0.005	(0.032)	-0.003	(0.016)	0.002	(0.018)
t-1	Public expenditure on childcare services	-0.290	(0.658)	0.051	(0.664)	0.341	(0.572)	-0.092	(0.381)	0.235	(0.124) ^	0.327	(0.346)	0.443	(0.284)	0.352	(0.225)	-0.091	(0.312)
	General family support policy																		
t	Child benefit per month for two chlldren	-0.281	(0.169)	-0.003	(0.091)	0.278	(0.158)	-0.294	(0.110) *	-0.017	(0.044)	0.278	(0.107) *	-0.142	(0.076) ^	-0.045	(0.029)	0.097	(0.064)
t	Tax support for families	-0.120	(0.220)	0.076	(0.120)	0.196	(0.247)	-0.042	(0.117)	0.091	(0.047) ^	0.132	(0.107)	-0.231	(0.147)	-0.064	(0.076)	0.167	(0.127)
t-1	Flat-rate parental leave and childcare leave	-0.066	(0.054)	0.138	(0.089)	0.204	(0.065) **	-0.058	(0.050)	-0.017	(0.012)	0.041	(0.048)	-0.002	(0.031)	0.016	(0.022)	0.018	(0.022)
t-1	Service Sector Size	-0.530	(0.229) *	-0.180	(0.173)	0.350	(0.236)	0.021	(0.106)	0.045	(0.039)	0.024	(0.116)	-0.128	(0.154)	0.031	(0.082)	0.160	(0.139)
t-1	Public Sector Size	0.943	(0.402) *	-0.339	(0.622)	-1.282	(0.636) ^	1.001	(0.477) ^	0.091	(0.090)	-0.911	(0.476) ^	0.527	(0.258) ^	-0.051	(0.133)	-0.578	(0.170) **
t-1	Crude birth rate	0.206	(0.585)	-0.084	(0.658)	-0.290	(0.973)	-0.084	(0.503)	-0.161	(0.095)	-0.078	(0.530)	0.478	(0.272) ^	0.221	(0.402)	-0.257	(0.342)
t	Employment protection legislation index	-3.952	(1.429) *	0.268	(1.194)	4.220	(1.813) *	-3.926	(1.122) **	-1.311	(0.446) *	2.615	(0.925) *	-1.800	(0.379) ***	0.460	(0.476)	2.260	(0.627) **
	n	282		282		282		282		282		282		282		282		282	
	r-squared (within)	0.630		0.491		0.648		0.748		0.522		0.747		0.676		0.385		0.702	

Note : * = p<0.05 ** = p<0.01 *** = p<0.001. ^ = p<0.1. Australia, Canada, New Zealand and United States missing entirely. Certain results are sensitive to the omission of influential observations (see appendix **E** for diagnostics).

Specifications :

A-I. Two-way fixed effects (country and time) with country-specific time-trends and cluster robust standard errors (CRSEs). Main specification

Table D.8. **Full results from alternative two-way fixed effects models for the gender gap in the labour force participation rate (25-49 year olds), by education level**

	Specification set:	Alternative measures of leave policy, with squared term															
	Education level:	Low education (ISCED 0-2)						Medium education (ISCED 3-4)						High education (ISCED 5-6)			
	Model:	**A**		**B**		**C**		**D**		**E**		**F**		**G**		**H**		**I**	
	Dependent variable:	Gender gap in the labour force participation rate (25-49 year olds)		Male labour force participation rate (25-49 year olds)		Female labour force participation rate (25-49 year olds)		Gender gap in the labour force participation rate (25-49 year olds)		Male labour force participation rate (25-49 year olds)		Female labour force participation rate (25-49 year olds)		Gender gap in the labour force participation rate (25-49 year olds)		Male labour force participation rate (25-49 year olds)		Female labour force participation rate (25-49 year olds)	
Lag	Variable	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE
	Dual earner-carer leave policy																		
t-1	Mother-specific earnings-related leave																		
t	Father-specific leave	0.093	(0.067)	-0.024	(0.054)	-0.117	(0.087)	0.060	(0.058)	0.088	(0.057)	0.028	(0.071)	-0.156	(0.049) **	-0.064	(0.053)	0.093	(0.052) ^
t-1	Gender-neutral earnings-related parental leave																		
	Dual earner childcare policy																		
t-1	Children under 3 in public childcare	-0.151	(0.079) ^	0.146	(0.126)	0.297	(0.153) ^	-0.071	(0.057)	0.106	(0.053) ^	0.178	(0.058) ***	-0.037	(0.038)	0.013	(0.047)	0.049	(0.062)
t-1	Children 3-6 in public pre-primary care or primary school	0.004	(0.036)	-0.011	(0.018)	-0.015	(0.048)	-0.022	(0.024)	0.005	(0.013)	0.027	(0.034)	-0.026	(0.011) *	-0.010	(0.014)	0.016	(0.024)
t-1	Public expenditure on childcare services	0.212	(0.315)	0.145	(0.366)	-0.067	(0.403)	-0.008	(0.215)	0.114	(0.218)	0.122	(0.326)	-0.260	(0.187)	0.040	(0.197)	0.300	(0.216)
	General family support policy																		
t	Child benefit per month for two chlldren	-0.084	(0.121)	0.082	(0.058)	0.166	(0.127)	-0.109	(0.093)	0.024	(0.058)	0.133	(0.090)	-0.040	(0.066)	0.005	(0.039)	0.046	(0.075)
t	Tax support for families	-0.159	(0.087) ^	0.060	(0.067)	0.219	(0.085) ^	-0.089	(0.091)	0.083	(0.067)	0.172	(0.116)	-0.106	(0.063)	-0.029	(0.049)	0.077	(0.071)
t-1	Flat-rate parental leave and childcare leave																		
	Alternative measures of leave policy																		
t-1	Total maternity and parental leave available to mothers	-0.334	(0.251)	-0.002	(0.096)	0.332	(0.226)	-0.119	(0.142)	-0.098	(0.085)	0.021	(0.119)	0.035	(0.065)	0.068	(0.052)	0.032	(0.066)
t-1	(Total maternity and parental leave available to mothers)^2	0.003	(0.003)	0.000	(0.001)	-0.003	(0.003)	0.001	(0.002)	0.001	(0.001)	0.000	(0.002)	0.000	(0.001)	-0.001	(0.001)	0.000	(0.001)
t-1	Childcare leave	-0.026	(0.026)	0.054	(0.090)	0.080	(0.089)	-0.057	(0.028) ^	0.019	(0.045)	0.075	(0.062)	-0.027	(0.033)	0.019	(0.028)	0.046	(0.041)
t-1	Service Sector Size	-0.121	(0.157)	-0.005	(0.084)	0.116	(0.205)	0.060	(0.141)	0.135	(0.063) *	0.076	(0.155)	-0.093	(0.093)	-0.012	(0.056)	0.081	(0.115)
t-1	Public Sector Size	0.678	(0.371) ^	-0.186	(0.211)	-0.864	(0.459) ^	0.474	(0.360)	-0.307	(0.114) *	-0.781	(0.335) *	0.241	(0.182)	-0.203	(0.149)	-0.444	(0.235) ^
t-1	Crude birth rate	0.479	(0.310)	0.247	(0.418)	-0.232	(0.568)	0.461	(0.395)	-0.044	(0.236)	-0.505	(0.517)	0.351	(0.283)	0.021	(0.239)	-0.330	(0.415)
t	Employment protection legislation index	-3.960	(0.807) ***	-0.342	(0.590)	3.619	(1.011) **	-3.975	(0.749) ***	-0.949	(0.613)	3.026	(0.721) **	-1.279	(0.591) *	0.710	(0.381) ^	1.989	(0.602) **
	Joint F-test on total leave for mothers and its square (d.f)	2.810	(2, 15) ^	0.000	(2, 15)	1.520	(2, 15)	0.820	(2, 15)	0.760	(2, 15)	0.260	(2, 15)	0.610	(2, 15)	1.700	0.17	0.170	(0.17)
	n	282		282		282		282		282		282		282		282		282	
	r-squared (within)	0.913		0.628		0.869		0.901		0.451		0.860		0.715		0.489		0.710	

Note: * = p<0.05 ** = p<0.01 *** = p<0.001. ^ = p<0.1. The joint F-test on total maternity and parental leave available to mothers and its square tests the null that the two are jointly equal to zero. Australia, Canada, New Zealand and United States missing entirely. Certain results are sensitive to the omission of influential observations (see appendix **E** for diagnostics).

Specifications:

A-I. Two-way fixed effects (country and time) with country-specific time-trends and CRSEs. Leave indicators simplified into 'Total effective weeks of maternity and parental leave available to mothers', plus 'Effective weeks of father-specific leave' and 'Effective weeks of childcare leave'.

Table D.9. **Full results from alternative two-way fixed effects models for the gender gap in the labour force participation rate (25-29 year olds), by education level**

Specification set:		Alternative measures of leave policy, with squared term															
Education level:		Low education (ISCED 0-2)						Medium education (ISCED 3-4)						High education (ISCED 5-6)			
Model:		A		B		C		D		E		F		G		H		I	
Dependent variable:		Gender gap in the labour force participation rate (25-29 year olds)		Male labour force participation rate (25-29 year olds)		Female labour force participation rate (25-29 year olds)		Gender gap in the labour force participation rate (25-29 year olds)		Male labour force participation rate (25-29 year olds)		Female labour force participation rate (25-29 year olds)		Gender gap in the labour force participation rate (25-29 year olds)		Male labour force participation rate (25-29 year olds)		Female labour force participation rate (25-29 year olds)	
Lag	Variable	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE
	Dual earner-carer leave policy																		
t-1	Mother-specific earnings-related leave																		
t	Father-specific leave	0.410	(0.193) ^	0.157	(0.125)	-0.253	(0.183)	0.101	(0.084)	0.306	(0.113) *	0.204	(0.085) *	-0.513	(0.243) ^	-0.420	(0.262)	0.093	(0.074)
t-1	Gender-neutral earnings-related parental leave																		
	Dual earner childcare policy																		
t-1	Children under 3 in public childcare	-0.445	(0.191) *	0.095	(0.125)	0.540	(0.228)	-0.036	(0.099)	0.100	(0.084)	0.136	(0.096)	0.160	(0.128)	0.059	(0.163)	-0.101	(0.148)
t-1	Children 3-6 in public pre-primary care or primary school	0.090	(0.087)	0.060	(0.024) *	-0.030	(0.074)	-0.024	(0.051)	0.004	(0.015)	0.028	(0.054)	-0.013	(0.022)	-0.016	(0.026)	-0.003	(0.014)
t-1	Public expenditure on childcare services	2.365	(0.790) **	0.919	(0.503) ^	-1.446	(0.610)	-0.733	(0.411)	-0.537	(0.340)	0.196	(0.373)	-0.685	(0.422)	-0.173	(0.542)	0.512	(0.297)
	General family support policy																		
t	Child benefit per month for two chlldren	-0.064	(0.238)	0.134	(0.198)	0.198	(0.198)	-0.127	(0.143)	-0.047	(0.085)	0.080	(0.148)	0.061	(0.130)	-0.071	(0.151)	-0.132	(0.100)
t	Tax support for families	-0.370	(0.414)	-0.169	(0.228)	0.201	(0.289)	0.014	(0.077)	0.165	(0.161)	0.151	(0.182)	0.162	(0.173)	0.071	(0.157)	-0.091	(0.116)
t-1	Flat-rate parental leave and childcare leave																		
	Alternative measures of leave policy																		
t-1	Total maternity and parental leave available to mothers	-0.891	(0.388) *	-0.416	(0.339)	0.475	(0.286)	-0.434	(0.198)	-0.243	(0.142)	0.191	(0.198)	0.127	(0.270)	0.100	(0.263)	-0.027	(0.150)
t-1	(Total maternity and parental leave available to mothers)^2	0.010	(0.005) ^	0.005	(0.004)	-0.005	(0.004)	0.005	(0.003)	0.004	(0.002) ^	-0.002	(0.003)	-0.001	(0.003)	-0.001	(0.004)	0.001	(0.003)
t-1	Childcare leave	0.213	(0.119)	0.107	(0.065)	-0.106	(0.119)	-0.008	(0.029)	0.036	(0.033)	0.044	(0.033)	0.064	(0.059)	-0.013	(0.046)	-0.077	(0.080)
t-1	Service Sector Size	0.232	(0.255)	-0.066	(0.178)	-0.299	(0.294)	-0.117	(0.185)	-0.009	(0.154)	0.108	(0.260)	-0.338	(0.181) ^	-0.245	(0.171)	0.094	(0.178)
t-1	Public Sector Size	1.191	(1.521)	-0.112	(0.784)	-1.302	(0.926)	0.912	(0.462)	-0.417	(0.215) ^	-1.329	(0.380) **	0.277	(0.217)	-0.343	(0.296)	-0.620	(0.412)
t-1	Crude birth rate	2.042	(0.624) **	1.205	(0.808)	-0.838	(0.582)	0.227	(0.398)	-0.210	(0.320)	-0.436	(0.567)	-0.422	(0.379)	0.031	(0.634)	0.453	(0.713)
t	Employment protection legislation index	-3.948	(2.037) ^	-2.761	(1.591)	1.186	(1.373)	-3.086	(1.031)	-1.308	(0.872)	1.778	(0.875) ^	0.750	(1.102)	2.948	(1.147) *	2.198	(0.940) *
	Joint F-test on total leave for mothers and its square (d.f)	2.880	(2, 15) ^	0.780	(2, 15)	3.970	(2, 15) *	3.340	(2, 15) ^	2.070	(2, 15)	1.780	(2, 15)	0.120	(2, 15)	0.290	(2, 15)	0.030	(2, 15)
	n	282		282		282		282		282		282		282		282		282	
	r-squared (within)	0.539		0.464		0.544		0.635		0.353		0.611		0.411		0.495		0.577	

Note : * = p<0.05 ** = p<0.01 *** = p<0.001. ^ = p<0.1. The joint F-test on total maternity and parental leave available to mothers and its square tests the null that the two are jointly equal to zero. Australia, Canada, New Zealand and United States missing entirely. Certain results are sensitive to the omission of influential observations (see appendix **E** for diagnostics).

Specifications :

A-I. Two-way fixed effects (country and time) with country-specific time-trends and CRSEs. Leave indicators simplified into 'Total effective weeks of maternity and parental leave available to mothers', plus 'Effective weeks of father-specific leave' and 'Effective weeks of childcare leave'.

Table D.10. **Full results from alternative two-way fixed effects models for the gender gap in the labour force participation rate (30-34 year olds), by education level**

	Specification set:	Alternative measures of leave policy, with squared term								
	Education level:	Low education (ISCED 0-2)			Medium education (ISCED 3-4)			High education (ISCED 5-6)		
	Model:	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**
	Dependent variable:	Gender gap in the labour force participation rate (30-34 year olds)	Male labour force participation rate (30-34 year olds)	Female labour force participation rate (30-34 year olds)	Gender gap in the labour force participation rate (30-34 year olds)	Male labour force participation rate (30-34 year olds)	Female labour force participation rate (30-34 year olds)	Gender gap in the labour force participation rate (30-34 year olds)	Male labour force participation rate (30-34 year olds)	Female labour force participation rate (30-34 year olds)
Lag	Variable	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE
	Dual earner-carer leave policy									
t-1	Mother-specific earnings-related leave									
t	Father-specific leave	0.003 (0.083)	0.008 (0.082)	0.005 (0.120)	0.011 (0.068)	0.071 (0.034) ^	0.060 (0.067)	-0.018 (0.067)	0.067 (0.046)	0.085 (0.068)
t-1	Gender-neutral earnings-related parental leave									
	Dual earner childcare policy									
t-1	Children under 3 in public childcare	-0.237 (0.168)	0.309 (0.179)	0.547 (0.191) *	-0.070 (0.086)	0.133 (0.041) **	0.203 (0.082) *	-0.183 (0.156)	-0.097 (0.068)	0.086 (0.150)
t-1	Children 3-6 in public pre-primary care or primary school	-0.026 (0.023)	-0.064 (0.061)	-0.039 (0.047)	0.030 (0.039)	0.021 (0.007) **	-0.009 (0.039)	-0.007 (0.030)	-0.003 (0.017)	0.004 (0.018)
t-1	Public expenditure on childcare services	-0.331 (0.651)	0.074 (0.655)	0.405 (0.577)	-0.074 (0.362)	0.214 (0.132)	0.288 (0.334)	0.411 (0.278)	0.363 (0.237)	-0.048 (0.303)
	General family support policy									
t	Child benefit per month for two chlldren	-0.203 (0.188)	0.092 (0.098)	0.295 (0.191)	-0.322 (0.112) *	-0.017 (0.044)	0.305 (0.114) *	-0.131 (0.082)	-0.059 (0.045)	0.072 (0.073)
t	Tax support for families	-0.058 (0.215)	0.132 (0.096)	0.190 (0.235)	-0.068 (0.123)	0.105 (0.044) *	0.173 (0.115)	-0.231 (0.151)	-0.071 (0.082)	0.160 (0.133)
t-1	Flat-rate parental leave and childcare leave									
	Alternative measures of leave policy									
t-1	Total maternity and parental leave available to mothers	-0.047 (0.346)	0.095 (0.157)	0.141 (0.259)	-0.035 (0.164)	-0.063 (0.057)	-0.027 (0.160)	0.095 (0.139)	-0.005 (0.090)	-0.100 (0.121)
t-1	(Total maternity and parental leave available to mothers)^2	-0.001 (0.005)	-0.001 (0.002)	0.000 (0.004)	0.000 (0.002)	0.000 (0.001)	0.000 (0.002)	-0.001 (0.002)	0.000 (0.001)	0.002 (0.002)
t-1	Childcare leave	-0.015 (0.083)	0.203 (0.104) ^	0.217 (0.062) **	-0.059 (0.057)	-0.015 (0.018)	0.044 (0.064)	-0.027 (0.051)	0.009 (0.025)	0.037 (0.042)
t-1	Service Sector Size	-0.509 (0.221) *	-0.144 (0.186)	0.365 (0.241)	0.006 (0.107)	0.057 (0.038)	0.051 (0.114)	-0.137 (0.159)	0.028 (0.085)	0.165 (0.147)
t-1	Public Sector Size	0.964 (0.453) ^	-0.373 (0.626)	-1.337 (0.643) ^	1.006 (0.475) ^	0.081 (0.095)	-0.925 (0.439) ^	0.574 (0.283) ^	-0.062 (0.138)	-0.636 (0.198) **
t-1	Crude birth rate	0.139 (0.648)	-0.282 (0.569)	-0.421 (0.952)	-0.016 (0.482)	-0.199 (0.089) *	-0.183 (0.496)	0.517 (0.293) ^	0.236 (0.394)	-0.281 (0.331)
t	Employment protection legislation index	-3.652 (1.474) *	0.718 (0.894)	4.370 (1.528) *	-4.282 (0.981) **	-0.998 (0.596)	3.284 (0.770) **	-1.686 (0.543) **	0.306 (0.483)	1.993 (0.707) *
	Joint F-test on total leave for mothers and its square (d.f)	3.380 (2, 15) ^	0.210 (2, 15)	1.800 (2, 15)	0.060 (2, 15)	4.060 (2, 15) *	0.050 (2, 15)	0.260 (2, 15)	0.460 (2, 15)	0.450 (2, 15)
	n	282								
	r-squared (within)	0.629	0.499	0.648	0.747	0.511	0.743	0.676	0.385	0.703

Note : * = p<0.05 ** = p<0.01 *** = p<0.001. ^ = p<0.1. The joint F-test on total maternity and parental leave available to mothers and its square tests the null that the two are jointly equal to zero. Australia, Canada, New Zealand and United States missing entirely. Certain results are sensitive to the omission of influential observations (see appendix **E** for diagnostics).

Specifications :

A-I. Two-way fixed effects (country and time) with country-specific time-trends and CRSEs. Leave indicators simplified into 'Total effective weeks of maternity and parental leave available to mothers', plus 'Effective weeks of father-specific leave' and 'Effective weeks of childcare leave'.

Table D.11. **Full results from two-way fixed effects models for the gender gap in top quintile earnings, by education level**

	Specification set:	Main specification															
	Education level:	Low education (ISCED 0-2)						Medium education (ISCED 3-4)						High education (ISCED 5-6)			
	Model:	**A**		**B**		**C**		**D**		**E**		**F**		**G**		**H**		**I**	
	Dependent variable:	Gender gap in top quintile earnings		Proportion of male employees with top quintile earnings		Proportion of female employees with top quintile earnings		Gender gap in top quintile earnings		Proportion of male employees with top quintile earnings		Proportion of female employees with top quintile earnings		Gender gap in top quintile earnings		Proportion of male employees with top quintile earnings		Proportion of female employees with top quintile earnings	
Lag	Variable	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE
	Dual earner-carer leave policy																		
t	Mother-specific earnings-related leave	0.158	(0.648)	0.220	(0.643)	0.062	(0.131)	-0.735	(0.418) ^	-0.522	(0.357)	0.213	(0.249)	-0.886	(0.630)	0.443	(0.585)	1.329	(0.786)
t	Father-specific leave	0.293	(0.495)	0.322	(0.473)	0.029	(0.064)	-0.123	(0.259)	0.062	(0.208)	0.185	(0.153)	0.823	(0.430) ^	0.077	(0.469)	-0.746	(0.543)
t	Gender-neutral earnings-related parental leave	0.115	(0.231)	0.069	(0.214)	-0.046	(0.067)	0.107	(0.131)	0.178	(0.125)	0.071	(0.094)	0.201	(0.276)	0.192	(0.197)	-0.009	(0.278)
	Dual earner childcare policy																		
t	Children under 3 in public childcare	-0.486	(0.281) ^	-0.503	(0.280) ^	-0.018	(0.071)	0.189	(0.191)	0.064	(0.178)	-0.125	(0.096)	-0.870	(0.429) ^	-0.857	(0.269) **	0.013	(0.397)
t	Children 3-6 in public pre-primary care or primary school	-0.022	(0.066)	-0.014	(0.070)	0.008	(0.025)	-0.020	(0.071)	0.002	(0.074)	0.022	(0.036)	0.009	(0.104)	0.147	(0.095)	0.138	(0.093)
t	Public expenditure on childcare services	-0.182	(0.854)	0.143	(0.852)	0.325	(0.376)	0.050	(0.656)	0.042	(0.544)	-0.008	(0.436)	-0.665	(1.202)	-2.142	(0.795) *	-1.477	(1.282)
	General family support policy																		
t	Child benefit per month for two chlldren	-0.395	(0.591)	-0.338	(0.553)	0.058	(0.116)	0.305	(0.459)	0.117	(0.355)	-0.188	(0.185)	-0.530	(0.308) ^	-1.076	(0.356) **	-0.546	(0.338)
t	Tax support for families	-0.194	(0.448)	-0.256	(0.432)	-0.062	(0.111)	0.342	(0.213)	0.480	(0.187) *	0.138	(0.125)	1.488	(0.525) **	1.765	(0.407) ***	0.277	(0.553)
t	Flat-rate parental leave and childcare leave	0.150	(0.280)	0.072	(0.269)	-0.077	(0.047)	-0.151	(0.172)	-0.149	(0.138)	0.002	(0.104)	-0.427	(0.237) ^	-0.091	(0.289)	0.336	(0.323)
t	Service Sector Size	-0.509	(0.400)	-0.543	(0.353)	-0.034	(0.131)	0.083	(0.469)	-0.132	(0.357)	-0.215	(0.209)	-0.834	(0.683)	-0.757	(0.534)	0.077	(0.795)
t	Public Sector Size	0.108	(1.180)	-0.175	(1.112)	-0.283	(0.411)	0.620	(1.078)	-0.035	(0.786)	-0.655	(0.902)	-1.996	(2.257)	-0.768	(1.269)	1.228	(2.336)
t	Crude birth rate	0.077	(0.903)	0.191	(0.860)	0.114	(0.257)	-0.344	(0.657)	-0.536	(0.557)	-0.192	(0.349)	-0.551	(1.056)	-0.149	(1.041)	0.402	(1.202)
t	Employment protection legislation index	4.910	(3.020)	3.710	(2.824)	-1.199	(0.816)	-0.959	(1.865)	-0.306	(1.480)	0.654	(1.053)	-4.954	(4.091)	-0.532	(4.487)	4.422	(3.839)
t	Economic freedom index	-1.081	(3.385)	-1.712	(3.302)	-0.631	(0.656)	0.706	(1.753)	0.712	(1.350)	0.007	(1.085)	4.211	(3.435)	11.212	(3.264) **	7.000	(3.635) ^
	n	80		80		80		81		81		81		82		82		82	
	r-squared (within)	0.907		0.926		0.870		0.956		0.979		0.958		0.968		0.972		0.950	

Note : * = p<0.05 ** = p<0.01 *** = p<0.001. ^ = p<0.1. New Zealand and Portugal excluded from all specifications due to missing data. Certain results are sensitive to the omission of potentially influential observations (see appendix **E** for diagnostics).

Specifications :

A-I. Two-way fixed effects (country and time) with country-specific time-trends and heteroscedasticity robust standard errors. Main specification

Table D.12. **Full results from alternative two-way fixed effects models for the gender gap in top quintile earnings, by education level**

	Specification set:	Alternative measures of leave policy, with squared term								
	Education level:	Low education (ISCED 0-2)			Medium education (ISCED 3-4)			High education (ISCED 5-6)		
	Model:	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**
	Dependent variable:	Gender gap in top quintile earnings	Proportion of male employees with top quintile earnings	Proportion of female employees with top quintile earnings	Gender gap in top quintile earnings	Proportion of male employees with top quintile earnings	Proportion of female employees with top quintile earnings	Gender gap in top quintile earnings	Proportion of male employees with top quintile earnings	Proportion of female employees with top quintile earnings
Lag	Variable	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE
	Dual earner-carer leave policy									
t	Mother-specific earnings-related leave									
t	Father-specific leave	0.326 (0.444)	0.379 (0.414)	0.053 (0.067)	-0.335 (0.230)	-0.115 (0.177)	0.219 (0.171)	0.434 (0.511)	0.203 (0.385)	-0.232 (0.343)
t	Gender-neutral earnings-related parental leave									
	Dual earner childcare policy									
t	Children under 3 in public childcare	-0.427 (0.322)	-0.404 (0.305)	0.023 (0.077)	0.093 (0.233)	0.007 (0.207)	-0.086 (0.109)	-0.873 (0.387) *	-0.566 (0.261) *	0.307 (0.367)
t	Children 3-6 in public pre-primary care or primary school	-0.017 (0.068)	-0.007 (0.072)	0.010 (0.025)	-0.002 (0.085)	0.023 (0.087)	0.025 (0.025)	0.036 (0.123)	0.176 (0.103) ^	0.140 (0.098)
t	Public expenditure on childcare services	0.201 (1.073)	0.708 (1.007)	0.507 (0.387)	0.142 (0.676)	0.056 (0.542)	-0.085 (0.565)	-0.242 (1.490)	-1.492 (0.851) ^	-1.251 (1.625)
	General family support policy									
t	Child benefit per month for two chlldren	-0.318 (0.536)	-0.274 (0.489)	0.044 (0.103)	0.154 (0.368)	-0.113 (0.292)	-0.267 (0.146) ^	-0.708 (0.413) ^	-1.212 (0.357) **	-0.504 (0.315)
t	Tax support for families	-0.184 (0.407)	-0.267 (0.371)	-0.083 (0.092)	0.132 (0.193)	0.212 (0.172)	0.080 (0.094)	1.016 (0.377) *	1.507 (0.272) ***	0.491 (0.390)
t	Flat-rate parental leave and childcare leave									
	Alternative measures of leave policy									
t	Total maternity and parental leave available to mothers	0.637 (0.450)	0.724 (0.414) ^	0.087 (0.145)	0.123 (0.400)	-0.149 (0.360)	-0.272 (0.231)	-0.003 (0.778)	0.336 (0.559)	0.339 (0.650)
t	(Total maternity and parental leave available to mothers)^2	-0.010 (0.009)	-0.013 (0.008)	-0.003 (0.003)	0.000 (0.007)	0.004 (0.006)	0.005 (0.004)	0.001 (0.012)	-0.009 (0.009)	-0.010 (0.011)
t	Childcare leave	0.148 (0.228)	0.124 (0.215)	-0.024 (0.039)	-0.125 (0.154)	-0.107 (0.111)	0.018 (0.085)	-0.276 (0.203)	0.166 (0.208)	0.442 (0.298)
t	Service Sector Size	-0.435 (0.468)	-0.410 (0.407)	0.025 (0.135)	0.004 (0.455)	-0.149 (0.351)	-0.153 (0.200)	-0.869 (0.729)	-0.335 (0.614)	0.534 (0.834)
t	Public Sector Size	0.227 (1.208)	0.107 (1.114)	-0.120 (0.434)	0.490 (1.110)	0.080 (0.812)	-0.410 (0.920)	-1.581 (2.472)	0.834 (1.386)	2.415 (2.615)
t	Crude birth rate	0.135 (1.003)	0.251 (0.942)	0.116 (0.269)	-0.179 (0.668)	-0.432 (0.544)	-0.254 (0.426)	-0.422 (1.264)	-0.414 (1.082)	0.009 (1.305)
t	Employment protection legislation index	5.308 (2.309) *	3.894 (1.890) *	-1.413 (0.759) ^	1.727 (1.839)	1.406 (1.435)	-0.321 (1.458)	-1.750 (3.820)	-1.613 (4.551)	0.137 (2.818)
t	Economic freedom index	-0.104 (3.200)	-0.222 (3.050)	-0.117 (0.645)	-0.056 (2.223)	-0.202 (1.603)	-0.146 (1.141)	3.437 (3.716)	13.499 (3.027) ***	10.061 (3.775) *
	Joint F-test on total leave for mothers and its square (d.f)	1.060 (2, 27)	1.560 (2, 27)	2.580 (2, 27) ^	0.220 (2, 27)	0.650 (2, 27)	0.790 (2, 27)	0.010 (2, 28)	0.850 (2, 28)	0.970 (2, 28)
	n	80	80	80	81	81	81	82	82	82
	r-squared (within)	0.911	0.933	0.874	0.952	0.976	0.959	0.963	0.973	0.953

Note : * = p<0.05 ** = p<0.01 *** = p<0.001. ^ = p<0.1. The joint F-test on total maternity and parental leave available to mothers and its square tests the null that the two are jointly equal to zero. New Zealand and Portugal excluded from all specifications due to missing data. Certain results are sensitive to the omission of potentially influential observations (see appendix **E** for diagnostics).

Specifications :

A-I. Two-way fixed effects (country and time) with country-specific time-trends and heteroscedasticity robust standard errors Leave indicators simplified into 'Total effective weeks of maternity and parental leave available to mothers' and its square, plus 'Effective weeks of father-specific leave' and 'Effective weeks of childcare leave'.

Appendix E. Third statistical appendix to chapters 5, 6 and 7: checks and tests for outliers and influential points

An important step when using regression as the basis of any research is of course to verify whether models meet the many assumption of regression analysis (see Wooldridge, 2009) and to check whether relations and significance tests are biased by any of the various issues that can impact on regression estimates. There is unfortunately not space here – even in this appendix – to present results from all of the various tools and tests used to examine the validity and robustness of the models presented throughout the thesis. However, a particularly important concern when using comparative time-series cross-section data – given its typically moderate sample size – in regression analysis is whether or not estimates are unduly influenced by one or more outlying or highly influential country cases, that is, by country observations that cause estimates to change by a unjustifiably large amount when included or excluded from the model (Wooldridge, 2009: 325). It is then worthwhile outlining here the tools used to check for influential points and – more importantly – the results of these tests.

Spotting influential points is not always straightforward. Certainly, any outliers in the traditional sense – cases that appear unusual in that they deviate sharply from expectations and other observed points on a given variable – have the potential to distort estimates (Wooldridge, 2009: 325). However, of additional concern are 'multivariate outliers', that is, cases that appear 'normal' when values on any given variable are examined in isolation but that contain an unusual or extreme combination of values or that come to dominate the regression once variations in all included variables are taken into account.

This appendix summarises findings from one common technique for identifying multivariate outliers and influential points – Cook's Distance, or Cook's D for short. The next subsection provides a short overview of the technique and the general approach taken in the thesis to potentially influential points, while subsequent subsections present findings from Cook's D for all models shown in chapters **5**, **6** and **7**, respectively. Unfortunately, there is not space here to present results in full, so these subsections provide a brief summary of findings only.

Cook's Distance and outliers and influential points

Cook's D is one of the most commonly used tools for spotting and examining influential

points in OLS regression. It provides a single value that measures the effect of omitting a given case from the analysis, or more specifically that measures the degree to which the regression coefficients change once a given case is excluded from the model (Stevens, 1984: 34). Thus, comparison of Cook's D across cases helps reveal the relative influence of each case and aids the identification of observations that may be 'overly influential'.

As ever, it is not always easy to isolate a threshold value for Cook's D above which cases may be considered 'overly influential'. Some authors suggest cases with values on Cook's D above 4/n may warrant further investigation (Van der Meer et al, 2010; Nieuwenhuis, 2014: 197). However, in many circumstances 4/n seems excessively strict. For example, for the models of the gender gap in the labour force participation rate shown earlier in table **5.3**, a critical value of 4/n = 4/486 = 0.0082 would lead up to 75 cases being classified as potentially 'highly influential'. Other authors, including Cook himself, suggest cases with a value of greater than 1 on Cook's D may be considered highly influential (Cook and Weisberg, 1982; Stevens, 1984). The approach taken here is to use Cook's guidelines of D > 1 as the primary criterion, but with any cases with a value of D that is less than 1 but considerably larger than the rest also flagged up as possible influential points.

Of course, even if a case is identified as 'highly influential' by Cook's D the decision to keep or drop the observation from the model remains difficult. On the one hand, such cases may damage the generalisability of results if they force the regression to fit their unusual or extreme set of values (Nieuwenhuis, 2014: 190). On the other, as Wooldridge (2009: 325) points out, multivariate outliers might strongly influence results not because they are erroneous, but rather because they are legitimately very different from the other cases included in the analysis. Often such exceptional cases are of primary interest – particularly in macro-comparative research with its associated limited sample size – and removing a legitimate case from the analysis simply because it changes results risks producing a biased sample and misleading results. This is particularly so where dropping a single case considerably *increases* the size of the coefficient on one or more variables or moves variables *into* significance, as the most likely inference in this situation is that the excluded case provides an important exception to the general relation and thus provides the model with valuable uncertainty. The case for excluding a given observation is generally stronger if removing the case leads to a substantial *decrease* in the size of coefficients or to one or more variables moving out of significance, as in these circumstances the most likely inference is that the single observation is driving the estimated relation.

The approach taken here is generally conservative, in that cases are removed only in

exceptional circumstances. Certainly, any potentially influential cases that are flagged up by Cook's D are examined and the relevant models are re-estimated with the offending observation excluded. In several instances this leads to interesting but not critical differences in results and inferences, a number of which are mentioned in footnotes throughout the thesis. However, only if there is a very strong case for omission – for example, the case appears to contain erroneous data, or if excluding the particular case radically changes the overall meaning and conclusions emerging from the model – is the case removed from the main models presented in the body of the thesis.

Outliers and influential points in the models presented in chapter 5

Table **E.1** (overleaf) summarises findings from Cook's D for all models shown in chapter **5** for the gender gap in the labour force participation rate and the gender gap in usual weekly working hours. While it is not possible to plot or display values of Cook's D themselves – due mostly to the number of models used – the table does show any cases with values of Cook's D that are above the critical value of 1, and also any cases with values of Cook's D that are 'substantially larger' than the rest. Where cases are found to be potentially influential, the relevant models are re-run with the given case removed. The second to last column in table **E.1** summarises whether or not omitting the case under consideration leads to any major changes in results or inferences. To save on space, these alternative models – with the potentially influential case removed – are shown only when omitting the given case does change results.

In all ten of the models presented in chapter **5**, no cases hold values of Cook's D that exceed the threshold value of 1 – in other words, none of the individual cases can be identified clearly as possibly overly influential. However, in the four models of the gender gap in the labour force participation rate for men and women aged 25-54 the observation 'Netherlands 1986' holds a value on Cook's D that is substantially larger than that on all other cases. For example, for model **A** in table **5.3**, 'Netherlands 1986' has a Cook's D value of 0.11 – the next largest is 0.05 for 'Greece 1986'. Thus, while going by Cook's criteria 'Netherlands 1986' is not considered an 'overly influential' observation, it may still be worth examining the effect of omitting the case on estimated relations.

Table E.1. **Summary of Cook's D statistics for regression models presented in chapter 5**

Dependent variable	Reference model	Cases with values on Cook's D larger than 1	Cases with values on Cook's D that are 'considerably larger' than the rest	Ommiting potentially influential case changes results or inferences?	See table
Gender gap in the labour force participation rate (25-54 year olds)	Model A in table 5.3	None - -	Netherlands 1986 - -	No - -	- - -
	Model D in table 5.3	None - -	Netherlands 1986 - -	No - -	- - -
	Model A in table 5.4	None - -	Netherlands 1986 - -	No - -	- - -
	Model D in table 5.4	None - -	Netherlands 1986 - -	No - -	- - -
Gender gap in the labour force participation rate (25-34 year olds)	Model A in table 5.5	None - -	None - -	- - -	- - -
	Model D in table 5.5	None - -	None - -	- - -	- - -
Gender gap in usual weekly working hours (25-54 year olds)	Model A in table 5.7	None - -	None - -	- - -	- - -
	Model D in table 5.7	None - -	None - -	- - -	- - -
	Model A in table 5.8	None - -	None - -	- - -	- - -
	Model D in table 5.8	None - -	None - -	- - -	- - -

Note : See the respective models for the full specifications

All four models of the gender gap in the labour force participation rate were re-estimated with 'Netherlands 1986' dropped. In all four cases, removing 'Netherlands 1986' made almost no difference to results. Coefficients remained largely the same, and importantly no variables moved into or out of statistical significance at the 5% level. Broadly, then, results from the four models of the gender gap in the labour force participation for men and women aged 25-54 – as well as those for all other measures of gender differences in labour market activity – appear robust to the omission of any potentially influential cases.

Outliers and influential points in the models presented in chapter 6

Table **E.2** (overleaf) summarises findings from Cook's D for all models shown in chapter **6** for the gender gap in the proportion of employees in 'female-type' occupations, the female share of managers, and the gender gap in top quintile earnings. Again, the table shows very few cases hold values of Cook's D that exceed the critical value of 1. The only exception is the case 'Canada 1990' for all three models of the female share of managers, where values of Cook's D range between 1.07 and 2.32. Notably, though, excluding this case makes no practical difference to results – when dropped, all coefficients and inferences are almost identical to those from the original models.

However, a number of cases across dependent variables do continue to hold values of Cook's D that are considerably larger than the pack. In many instances, omitting these cases from the relevant models does not change results or inferences, implying estimates are robust to the exclusion of the potentially influential case. In certain others, however, dropping the observation does have some impact on findings. This is the case, to some extent at least, for 'Luxembourg 2010' and 'Denmark 1992' in models of the gender gap in the proportion of employees in 'female-type' occupations and the female share of managers, respectively, and particularly for 'Finland 2010' in models of the gap in top quintile earnings.

Table E.2. **Summary of Cook's D statistics for regression models presented in chapter 6**

Dependent variable	Reference model	Cases with values on Cook's D larger than 1	Cases with values on Cook's D that are 'considerably larger' than the rest	Ommiting potentially influential case changes results or inferences?	See table
Gender gap in the proportion of employees in 'female-type' occupations (all ages)	Model A in table 6.3	None	Canada 1990	No	-
		-	Luxembourg 2010	No	-
		-	-	-	-
	Model A in table 6.4	None	Canada 1990	No	-
		-	Luxembourg 2010	Yes	Table E.4
		-	-	-	-
	Model D in table 6.4	None	Canada 1990	No	-
		-	Luxembourg 2010	Yes	Table E.4
		-	-	-	-
Female share of managerial employment (all ages)	Model A in table 6.6	Canada 1990	-	No	-
		-	None	-	-
		-	-	-	-
	Model B in table 6.6	Canada 1990	-	No	-
		-	Denmark 1992	Yes	Table E.4
		-	-	-	-
	Model C in table 6.6	Canada 1990	-	No	-
		-	Denmark 1992	Yes	Table E.4
		-	-	-	-
Gender gap in the proportion of employees with top quintile earnings (25-54 year olds, 5-year interval)	Model A in table 6.8	None	Spain 90-94	No	-
		-	Austria 90-94	No	-
		-	Austria 00-04	No	-
	Model A in table 6.9	None	Ireland 2010	No	-
		-	USA 85-89	No	-
		-	Finland 2010	Yes	Table E.5
	Model D in table 6.9	None	Finland 2010	Yes	Table E.5
		-	Ireland 2010	No	-
		-	Germany 90-94	No	-

Note : See the respective models for the full specifications

Table **E.3** (overleaf) shows results from models of the gender gap in the proportion of employees in 'female-type' occupations and the female share of managers when the cases 'Luxembourg 2010' and 'Denmark 1992' are omitted, respectively. In each case the original model from chapter **6** is shown alongside the re-estimated model in order to aid comparison. As far as the gender gap in employment in 'female-type' occupations is concerned, dropping 'Luxembourg 2010' from model **A** in table **6.4** brings the relation on child benefit into statistical significance, although this does not lead to huge changes in inferences as child benefit was already significant in model **A** in table **6.3**. Perhaps more importantly, dropping the same case from model **D** in table **6.4** leads to total maternity and parental leave available to mothers and its square becoming significant at the stricter 5% level, suggesting that increases in the length of general leave may inflate gender job segregation if only once the observation for Luxembourg in 2010 is removed. That said, the coefficients here are very small – the estimated effect of a 26 week increase in general leave for mothers is an increase in the gender gap of just 0.79 points – so in substantive terms excluding 'Luxembourg 2010' makes little difference to inferences.

With regard to the female share of managers, meanwhile, columns **E-H** in table **E.4** show that when 'Denmark 1992' is removed from models **B** and **C** in table **6.6,** the negative coefficient on the proportion of children aged three-to-six in public pre-primary education or schooling moves from significance only at the 10% level to significance at the extremely strict 1% level. Curiously, this suggests that expanding public childcare provision for older children may damage women's ability to attain employment as managers, although the coefficient remains fairly small. All other estimates, however, remain the same or similar to those from the original models.

In both cases then, dropping neither 'Luxembourg 2010' nor 'Denmark 1992' from models of the gender gap in 'female-type' employment or the female share of managers leads to substantially different results and inferences – while the differences in estimates are interesting, in neither case is the overall conclusion radically different from that emerging from the original model. It is a different story, however, when the case 'Finland 2010' is omitted from models of the gender gap in the proportion of employees with top quintile earnings.

Table E.3. **Additional two-way fixed effects regression models for the gender gap in the proportion of employees in 'female-type' occupations, and for the female share of managers, with possible influential cases removed**

	Dependent variable:	Gender gap in the proportion of employees in 'female-type' occupations															
	Reference model	Model **A** in table **6.4**				Model **D** in table **6.4**				Model **B** in table 6.6				Model **C** in table 6.6			
	Model:	**A**				**B**				**C**				**D**			
	Excluded case(s)	Original model				Luxembourg 2010				Original model				Luxembourg 2010			
Lag	Variable	B	SE			B	SE			B	SE			B	SE		
	Dual earner-carer leave policy																
t-1	Mother-specific earnings-related leave																
t	Father-specific leave	-0.016	(0.044)			0.014	(0.045)			-0.014	(0.045)			0.015	(0.047)		
t-1	Gender-neutral earnings-related parental leave																
	Dual earner childcare policy																
t-1	Children under 3 in public childcare	-0.057	(0.060)			-0.028	(0.056)			-0.060	(0.060)			-0.029	(0.058)		
t-1	Children 3-6 in public pre-primary care or primary school	0.009	(0.013)			0.009	(0.013)			0.010	(0.013)			0.009	(0.013)		
t-1	Public expenditure on childcare services	0.228	(0.257)			0.243	(0.245)			0.226	(0.255)			0.243	(0.244)		
	General family support policy																
t	Child benefit per month for two chlldren	0.074	(0.044)			0.086	(0.040)	*		0.071	(0.047)			0.085	(0.041)	^	
t	Tax support for families	0.052	(0.066)			0.065	(0.064)			0.054	(0.065)			0.066	(0.063)		
t-1	Flat-rate parental leave and childcare leave																
	Alternative measures of leave policy																
t-1	Total maternity and parental leave available to mothers	0.032	(0.019)			0.037	(0.018)	^		0.007	(0.089)			0.027	(0.092)		
t-1	(Total maternity and parental leave available to mothers)^2									0.000	(0.001)			0.000	(0.001)		
t-1	Childcare leave	-0.029	(0.035)			-0.016	(0.029)			-0.030	(0.035)			-0.016	(0.029)		
t-1	Service Sector Size	-0.158	(0.142)			-0.104	(0.131)			-0.155	(0.145)			-0.103	(0.133)		
t-1	Public Sector Size	0.714	(0.254)	*		0.703	(0.247)	*		0.703	(0.261)	*		0.698	(0.255)	*	
t-1	Crude birth rate	-0.432	(0.309)			-0.438	(0.291)			-0.430	(0.307)			-0.437	(0.290)		
t-5	Female share of tertiary education students	-0.158	(0.116)			-0.146	(0.114)			-0.162	(0.120)			-0.147	(0.119)		
t	Employment protection legislation index	1.526	(0.555)	*		1.512	(0.556)	*		1.448	(0.607)	*		1.479	(0.624)	*	
t	Economic freedom index																
	Joint F-test on total leave available to mothers and its square (d.f)									2.920	(2, 17)	^		4.020	(2, 17)	*	
	n	301				300				301				300			
	r-squared (within)	0.788				0.800				0.788				0.800			

	Female share of managers								
	Model **B** in table 6.6				Model **C** in table 6.6			
	E				**F**			
	Original model				Denmark 1992			
Lag	B	SE			B	SE		
t-1								
t	0.111	(0.100)			0.083	(0.116)		
t-1								
t-1	0.076	(0.093)			0.031	(0.096)		
t-1	-0.081	(0.041)	^		-0.095	(0.031)	**	
t-1	-0.161	(0.272)			-0.281	(0.294)		
t	0.052	(0.058)			0.054	(0.055)		
t	0.032	(0.069)			0.054	(0.070)		
t-1								
t-1	0.078	(0.061)			0.102	(0.067)		
t-1								
t-1	-0.022	(0.052)			-0.118	(0.074)		
t-1	0.079	(0.148)			0.063	(0.138)		
t-1	-0.209	(0.382)			-0.419	(0.312)		
t-1	-0.060	(0.294)			-0.258	(0.248)		
t-5	0.121	(0.099)			0.135	(0.090)		
t	0.227	(0.937)			0.226	(0.847)		
t	-0.811	(1.149)			-0.795	(1.030)		
	332				331			
	0.691				0.707			

	Female share of managers							
	Model **C** in table 6.6							
	G				**H**			
	Original model				Denmark 1992			
Lag	B	SE			B	SE		
t-1								
t	0.137	(0.103)			0.108	(0.121)		
t-1								
t-1	0.042	(0.093)			0.003	(0.099)		
t-1	-0.079	(0.041)	^		-0.092	(0.032)	**	
t-1	-0.216	(0.268)			-0.323	(0.281)		
t	0.011	(0.049)			0.017	(0.044)		
t	0.055	(0.072)			0.074	(0.069)		
t-1								
t-1	-0.234	(0.147)			-0.178	(0.165)		
t-1	0.005	(0.002)	*		0.004	(0.002)	*	
t-1	-0.041	(0.049)			-0.130	(0.078)		
t-1	0.074	(0.139)			0.059	(0.133)		
t-1	-0.263	(0.311)			-0.455	(0.262)	^	
t-1	0.023	(0.277)			-0.172	(0.247)		
t-5	0.095	(0.098)			0.111	(0.094)		
t	-0.506	(0.799)			-0.429	(0.767)		
t	-0.391	(1.119)			-0.421	(1.031)		
	6.440	(2, 19)	**		6.890	(2, 19)	**	
	332				331			
	0.702				0.716			

Note : * = p<0.05 ** = p<0.01 *** = p<0.001. ^ = p<0.1.

Specifications :

A-B. See model A in table 6.4

C-D. See model D in table 6.4

E-F. See model B in table 6.6

G-H. See model C in table 6.6

Table **E.4** (overleaf) shows results from models of the gender gap in top quintile earnings when they are run both with all cases (columns **A** and **C**) and with 'Finland 2010' removed (columns **B** and **D**). The models that use all available cases show very few statistically significant results – in columns **A** and **C**, the only clear associations are a large and negative relation with changes in the size of the public sector as an employer, and a curious negative relation on changes in childcare leave. In other words, when all possible observations are included, the broad inference is that changes in policy and indeed most controls are almost entirely unrelated to movements in the gender gap in top quintile earnings.

Dropping 'Finland 2010' from either **A** or **C** causes substantial changes to inferences. In both columns **B** and **D**, the negative coefficient on father-specific leave moves into significance at the 5% level, while the negative coefficients on service sector size and the crude birth rate plus the positive coefficient on tax support for the family become significant at the more lenient 10% level. Perhaps more importantly, in both cases the coefficient on total maternity and parental leave available to mothers increases in size by up to 50% and moves into statistical significance at the 5% level. Thus, once 'Finland 2010' is excluded, the major inference from the models shifts to become one that suggest changes in leave for mothers can constrain equality in top earnings, and moreover that changes in leaves for fathers can promote women's relative access to high pay. Put differently, conclusions from models of the gender gap in top quintile earnings are considerably different once the single observation 'Finland 2010' is removed from the models.

The decision of whether or not to include 'Finland 2010' in the main models presented in chapter **6** is not an easy one. On the one hand, the results shown in table **E.4** indicate that – across all cases other than 'Finland 2010' – changes in leave policies may have a meaningful effect on women's relative ability to reach high earnings. On the other, there is no real apparent reason to exclude 'Finland 2010' other than the fact that its omission substantially changes results – inspection of the case reveals no extreme or erroneous data, and no sharp changes in any of the relevant variables between the previous time point (2005-2009) and 2010, although in some sense this strengthens the case for exclusion as there is nothing particularly interesting about 'Finland 2010'. The final decision taken here is that, on balance, the shifts in inferences associated with the exclusion of 'Finland 2010' are of such magnitude and importance for the theory as to justify its exclusion. Thus, all models for the gender gap in top quintile earnings presented in chapter **6** are run *without* 'Finland 2010'.

Table E.4. **Alternative two-way fixed effects regression models for the gender gap in the proportion of employees with top quintile annual earnings, with possible influential cases removed**

	Dependent variable:	Gender gap in top quintile earnings							
	Reference model	Model **A** in table **6.9**				Model **D** in table **6.9**			
	Model:	**A**		**B**		**C**		**D**	
	Excluded case(s)	Original model using all available cases		Finland 2010		Original model using all available cases		Finland 2010	
Lag	Variable	B	SE	B	SE	B	SE	B	SE
	Dual earner-carer leave policy								
t-1	Mother-specific earnings-related leave								
t	Father-specific leave	-0.262	(0.151) ^	-0.316	(0.145) *	-0.270	(0.153) ^	-0.334	(0.144) *
t-1	Gender-neutral earnings-related parental leave								
	Dual earner childcare policy								
t-1	Children under 3 in public childcare	-0.153	(0.138)	-0.122	(0.132)	-0.165	(0.140)	-0.138	(0.131)
t-1	Children 3-6 in public pre-primary care or primary school	-0.051	(0.041)	-0.054	(0.039)	-0.052	(0.042)	-0.057	(0.039)
t-1	Public expenditure on childcare services	0.225	(0.552)	0.295	(0.523)	0.287	(0.562)	0.407	(0.525)
	General family support policy								
t	Child benefit per month for two chlldren	0.168	(0.146)	0.168	(0.138)	0.172	(0.147)	0.174	(0.136)
t	Tax support for families	0.154	(0.154)	0.285	(0.158) ^	0.159	(0.155)	0.309	(0.157) ^
t-1	Flat-rate parental leave and childcare leave								
	Alternative measures of leave policy								
t-1	Total maternity and parental leave available to mothers	0.183	(0.093) ^	0.240	(0.092) *	0.381	(0.285)	0.578	(0.277) *
t-1	(Total maternity and parental leave available to mothers)^2					-0.003	(0.004)	-0.005	(0.004)
t-1	Childcare leave	-0.195	(0.080) *	-0.161	(0.077) *	-0.187	(0.081) *	-0.144	(0.077) ^
t-1	Service Sector Size	-0.318	(0.234)	-0.383	(0.224) ^	-0.321	(0.236)	-0.396	(0.222) ^
t-1	Public Sector Size	-1.471	(0.540) *	-1.576	(0.512) **	-1.538	(0.551) **	-1.700	(0.516) **
t-1	Crude birth rate	0.514	(0.450)	0.439	(0.427)	0.555	(0.457)	0.499	(0.425)
t-5	Female share of tertiary education students	-0.507	(0.257) ^	-0.484	(0.243) ^	-0.458	(0.268) ^	-0.399	(0.250)
t	Employment protection legislation index	1.386	(1.613)	2.123	(1.562)	1.736	(1.692)	2.800	(1.631) ^
t	Economic freedom index	-1.507	(1.615)	-0.974	(1.546)	-1.145	(1.698)	-0.304	(1.615)
	Joint F-test on total leave available to mothers and its square (d.f)					2.170	(2, 13)	4.310	(2, 30) *
	n	86		85		86		85	
	r-squared (within)	0.915		0.926		0.917		0.930	

Note: * = p<0.05 ** = p<0.01 *** = p<0.001. ^ = p<0.1.

Specifications:

A-B. See model A in table 6.9

C-D. See model D in table 6.9

Outliers and influential points in the models presented in chapter 7

Table **E.5** (overleaf) summarises findings from Cook's D for all models shown in chapter **7** for the gender gap in the labour force participation (for those aged 25-49, 25-29 and 30-34), the female share of managers, and the gender gap in top quintile earnings across levels of education. Once again, in most models no cases hold values of Cook's D that exceed the threshold value of 1. The exceptions are the models of the gender gap in top quintile earnings for employees with low and high education, which are returned to a little later on. There are, though, a number of instances where cases have values of D that are far larger than those seen on most other observations. Once again, excluding or dropping most of these observations makes little difference to results. However, in certain cases dropping the observation under consideration does have at least some impact on estimates.

Table E.5. **Summary of Cook's D statistics for regression models presented in chapters 7**

Dependent variable	Education Level	Reference model	Cases with values on Cook's D larger than 1	Cases with values on Cook's D that are 'considerably larger' than the rest	Ommiting potentially influential case changes results or inferences?	See table
Gender gap in the labour force participation rate (25-49 year olds)	Low (ISCED 0-2)	Model A in table 7.4	None	Denmark 1993	-	-
			-	Portugal 1992	Yes	Table E.7
			-	-	-	-
		Model D in table 7.4	None	Denmark 1993	-	-
			-	Portugal 1992	Yes	Table E.7
			-	-	-	-
	Medium (ISCED 3-4)	Model B in table 7.4	None	Denmark 1992	No	-
			-	Luxembourg 1993	No	-
			-	Luxembourg 1995	No	-
		Model E in table 7.4	None	Denmark 1992	No	-
			-	Luxembourg 1993	No	-
			-	Luxembourg 1995	No	-
	High (ISCED 5-6)	Model C in table 7.4	None	Luxembourg 1994	Yes	Table E.7
			-	-	-	-
			-	-	-	-
		Model F in table 7.4	None	Luxembourg 1994	Yes	Table E.7
			-	-	-	-
			-	-	-	-
Gender gap in the labour force participation rate (25-29 year olds)	Low (ISCED 0-2)	Model A in table 7.5	None	Denmark 1992	No	-
			-	Denmark 1995	No	-
			-	Finland 1998	No	-
		Model D in table 7.5	None	Denmark 1992	No	-
			-	Denmark 1995	No	-
			-	Finland 1998	No	-
	Medium (ISCED 3-4)	Model B in table 7.5	None	None	-	-
			-	-	-	-
			-	-	-	-
		Model E in table 7.5	None	None	-	-
			-	-	-	-
			-	-	-	-
	High (ISCED 5-6)	Model C in table 7.5	None	Luxembourg 1999	No	-
			-	-	-	-
			-	-	-	-
		Model F in table 7.5	None	Luxembourg 1999	No	-
			-	-	-	-
			-	-	-	-
Gender gap in the labour force participation rate (30-34 year olds)	Low (ISCED 0-2)	Model A in table 7.5	None	None	-	-
			-	-	-	-
			-	-	-	-
		Model D in table 7.5	None	None	-	-
			-	-	-	-
			-	-	-	-
	Medium (ISCED 3-4)	Model B in table 7.5	None	Portugal 1992	No	-
			-	-	-	-
			-	-	-	-
		Model E in table 7.5	None	Portugal 1992	No	-
			-	Denmark 1992	No	-
			-	-	-	-
	High (ISCED 5-6)	Model C in table 7.5	None	Finland 1998	No	-
			-	-	-	-
			-	-	-	-
		Model F in table 7.5	None	Finland 1998	No	-
			-	-	-	-
			-	-	-	-

Note : See the respective models for the full specifications

Table E.5. (contd.) **Summary of Cook's D statistics for regression models presented in chapters 7**

Dependent variable	Education Level	Reference model	Cases with values on Cook's D larger than 1	Cases with values on Cook's D that are 'considerably larger' than the rest	Ommiting potentially influential case changes results or inferences?	See table
Female share of managerial employment (all ages)	Low (ISCED 0-2)	Model A in table 7.8	None	Denmark 1992	Yes	Table E.7
			-	-	-	-
			-	-	-	-
		Model D in table 7.8	None	Denmark 1992	Yes	Table E.7
			-	-	-	-
			-	-	-	-
	Medium (ISCED 3-4)	Model B in table 7.8	None	Luxembourg 2001	No	-
			-	Luxembourg 2009	No	-
			-	-	-	-
		Model E in table 7.8	None	Luxembourg 1999	No	-
			-	-	-	-
			-	-	-	-
	High (ISCED 5-6)	Model C in table 7.8	None	Luxembourg 2008	No	-
			-	-	-	-
			-	-	-	-
		Model F in table 7.8	None	Luxembourg 2008	No	-
			-	-	-	-
			-	-	-	-
Gender gap in the proportion of employees with top quintile earnings (25-54 year olds, 5-year interval)	Low (ISCED 0-2)	Model A in table 7.10	Germany 90-94	-	No	-
			Austria 90-94	-	No	-
			Austria 00-04	-	No	-
		Model D in table 7.10	Austria 90-94	-	No	-
			Austria 00-04	-	No	-
			Sweden 90-94	-	Yes	Table E.8
	Medium (ISCED 3-4)	Model B in table 7.10	-	Ireland 2010	Yes	Table E.8
			-	Austria 90-94	Yes	Table E.8
			-	Austria 00-04	Yes	Table E.8
		Model E in table 7.10	-	Luxembourg 85-89	Yes	Table E.8
			-	Ireland 2010	No	-
			-	-	-	-
	High (ISCED 5-6)	Model C in table 7.10	Spain 90-94	-	Yes	Table E.9
			Denmark 85-89	-	Yes	Table E.9
			-	-	-	-
		Model F in table 7.10	Spain 90-94	-	Yes	Table E.9
			Australia 85-89	-	Yes	Table E.9
			Denmark 85-89	-	Yes	Table E.9
			Denmark 00-04	-	Yes	Table E.9

Note : See the respective models for the full specifications

Table **E.6** shows results from models of the gender gap in labour participation amongst individuals aged 25-49 with low education, the gap in participation amongst individuals between 25-49 with high education, and the female share of managers with low education when 'Portugal 1992', 'Luxembourg 1994' and 'Denmark 1992' are dropped, respectively. In all cases the original models are shown alongside the re-estimated models so as to help comparison.

With regard to models of the gender gap in labour force participation for individuals aged 25-49 with low education, dropping 'Portugal 1992' (columns **A-D**) shifts the negative relation on the proportion of children aged less than three in publicly funded childcare out of significance at the 5% level, and the negative coefficient on flat-rate childcare leave into significance at the 5% level. However, in both cases the relation was either previously or remains significant at the more lenient 10% level, and the coefficients remain of reasonably similar size. Moreover, in the case of the relation on childcare provision for children aged less than three, the coefficient remains far larger than the equivalent coefficients on the same variable for the gender gaps amongst men and women with moderate and high levels of education. Thus, inferences around the effects of policy on participation for men and women aged 25-49 remain largely the same whether or not 'Portugal 1992' is included in the model for men and women with low education.

It is a mostly similar story when 'Luxembourg 1994' is dropped from models of the gender gap in the labour force participation rate for men and women aged 25-49 with high education (columns **E-H**). Excluding 'Luxembourg 1994' reduces the size of the coefficient on father-specific leave but the relation remains significant, while the negative relation on proportion of three-to-six year olds in publicly funded pre-primary education or primary school drops out of significance at the 5% level. However, as noted in the text in chapter **7**, only limited emphasis should be placed on this latter relation as the coefficient is in any case only very small. Thus, regardless of whether 'Luxembourg 1994' is included the inference remains that childcare provision for older children has only a limited impact on equality in participation amongst 25-49 year old men and women with high levels of education.

Lastly, columns **I-L** show the impact of dropping 'Denmark 1992' from models of the female share of managers with low education. In this instance, dropping the potentially influential case does lead to a fairly sizeable change in estimates – removing 'Denmark 1992' moves the negative relations on both childcare provision for older children and flat-rate parental and childcare leave into significance at the 5% level. The latter is particularly

Table E.6. **Additional two-way fixed effects regression models for the gender gap in the labour force participation rate for individuals with low and high education, and for the female share of managers with low education, with possible influential cases removed**

	Dependent variable:	Gender gap in the labour force participation rate, low education				Gender gap in the labour force participation rate, high education				Female share of managers, low education			
	Reference model	Model **A** in table **7.4**		Model **D** in table **7.4**		Model **B** in table **7.4**		Model **E** in table **7.4**		Model **A** in table **7.8**		Model **D** in table **7.8**	
	Model:	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**
	Excluded case(s)	Original model	Portugal 1992	Original model	Portugal 1992	Original model	Luxembourg 1994	Original model	Luxembourg 1994	Original model	Denmark 1992	Original model	Denmark 1992
Lag	Variable	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE
	Dual earner-carer leave policy												
t-1	Mother-specific earnings-related leave	-0.118 (0.182)	-0.094 (0.163)			0.062 (0.043)	0.071 (0.043)			0.073 (0.466)	0.312 (0.360)		
t	Father-specific leave	0.056 (0.056)	0.015 (0.046)	0.093 (0.067)	0.050 (0.054)	-0.142 (0.043) **	-0.108 (0.039) *	-0.156 (0.049) **	-0.122 (0.044) *	0.658 (0.173) **	0.702 (0.180) **	0.648 (0.220) *	0.551 (0.228) *
t-1	Gender-neutral earnings-related parental leave	-0.094 (0.074)	-0.094 (0.069)			0.013 (0.019)	0.014 (0.019)			-0.282 (0.164)	-0.266 (0.151) ^		
	Dual earner childcare policy												
t-1	Children under 3 in public childcare	-0.157 (0.064) *	-0.126 (0.062) ^	-0.151 (0.079) ^	-0.121 (0.079)	-0.022 (0.049)	-0.015 (0.052)	-0.037 (0.038)	-0.020 (0.045)	0.657 (0.197) **	0.618 (0.202) **	0.610 (0.193) **	0.499 (0.177) *
t-1	Children 3-6 in public pre-primary care or primary school	0.003 (0.031)	0.009 (0.029)	0.004 (0.036)	0.008 (0.033)	-0.025 (0.012) ^	-0.023 (0.013)	-0.026 (0.011) *	-0.024 (0.013) ^	-0.175 (0.108)	-0.226 (0.080) *	-0.175 (0.127)	-0.232 (0.094) *
t-1	Public expenditure on childcare services	0.193 (0.293)	0.239 (0.296)	0.212 (0.315)	0.255 (0.313)	-0.252 (0.169)	-0.231 (0.154)	-0.260 (0.187)	-0.231 (0.158)	-0.372 (1.012)	-0.777 (0.912)	-0.413 (0.951)	-0.876 (0.814)
	General family support policy												
t	Child benefit per month for two children	-0.065 (0.118)	-0.030 (0.110)	-0.084 (0.121)	-0.047 (0.116)	-0.026 (0.065)	-0.037 (0.048)	-0.040 (0.066)	-0.039 (0.050)	0.054 (0.226)	0.096 (0.237)	-0.008 (0.206)	-0.009 (0.215)
t	Tax support for families	-0.198 (0.079) *	-0.242 (0.081) **	-0.159 (0.087) ^	-0.208 (0.081) *	-0.093 (0.065)	-0.089 (0.068)	-0.106 (0.063)	-0.103 (0.068)	-0.072 (0.267)	0.053 (0.234)	0.014 (0.247)	0.047 (0.199)
t-1	Flat-rate parental leave and childcare leave	-0.061 (0.032) ^	-0.071 (0.030) *			-0.009 (0.016)	-0.005 (0.013)			-0.248 (0.138) ^	-0.366 (0.158) *		
	Alternative measures of leave policy												
t-1	Total maternity and parental leave available to mothers			-0.334 (0.251)	-0.289 (0.226)			0.035 (0.065)	0.066 (0.076)			-0.867 (0.687)	-0.548 (0.658)
t-1	(Total maternity and parental leave available to mothers)^2			0.003 (0.003)	0.003 (0.003)			0.000 (0.001)	-0.001 (0.001)			0.010 (0.009)	0.007 (0.009)
t-1	Childcare leave			-0.026 (0.026)	-0.033 (0.027)			-0.027 (0.033)	-0.013 (0.026)			-0.215 (0.177)	-0.514 (0.200) *
t-1	Service Sector Size	-0.142 (0.154)	0.038 (0.211)	-0.121 (0.157)	0.038 (0.206)	-0.083 (0.087)	-0.013 (0.054)	-0.093 (0.093)	-0.023 (0.057)	0.811 (0.394) ^	0.706 (0.419)	0.827 (0.400) ^	0.725 (0.408) ^
t-1	Public Sector Size	0.770 (0.422) ^	1.055 (0.346) **	0.678 (0.371) ^	0.955 (0.300) **	0.223 (0.189)	0.217 (0.197)	0.241 (0.182)	0.240 (0.191)	2.499 (1.590)	1.488 (1.308)	2.318 (1.238) ^	1.602 (0.998)
t-1	Crude birth rate	0.493 (0.292)	0.535 (0.266) ^	0.479 (0.310)	0.524 (0.293) ^	0.309 (0.266)	0.286 (0.236)	0.351 (0.283)	0.314 (0.245)	-0.070 (1.088)	-0.832 (0.838)	0.220 (1.022)	-0.551 (0.824)
t	Employment protection legislation index	-3.444 (0.839) ***	-3.153 (0.746) **	-3.960 (0.807) ***	-3.660 (0.696) ***	-1.232 (0.736)	-0.944 (0.660)	-1.279 (0.591) *	-0.972 (0.610)	1.834 (2.751)	2.060 (2.471)	-0.183 (3.087)	0.339 (3.103)
t	Economic freedom index									-1.193 (3.056)	-1.359 (2.826)	-0.922 (2.881)	-1.202 (2.610)
	Joint F-test on total leave available to mothers and its square (d.f)			2.810 (2, 15) ^	3.550 (2, 15) ^			0.610 (2, 15)	0.820 (2, 15)			1.330 (2, 15)	0.690 (2, 15)
	n	282	281	282	281	282	281	282	281	256	255	256	255
	r-squared (within)	0.911	0.912	0.913	0.914	0.714	0.740	0.715	0.740	0.453	0.488	0.455	0.493

Note: * = p<0.05 ** = p<0.01 *** = p<0.001. ^ = p<0.1.

Specifications:

A-B. See model A in table 7.4

C-D. See model A in table 7.5

E-F. See model G in table 7.5

G-H. See model G in table 7.5

I-J. See model A in table 7.7

K-L. See model A in table 7.8

interesting as it provides more concrete evidence to suggest that changes in certain leave policies can damage women's representation amongst managers with low levels of formal education.

There may be some justification, then, for dropping 'Denmark 1992' from models of the female share of managers with low education. However, an additional concern here is that, ideally, the sample should be identical or as close to identical as possible across levels of education in order to aid the comparability of results. There is no strong case for removing 'Denmark 1992' from models of the female share of managers with either moderate or high education, so excluding 'Denmark 1992' from models of the female share of managers with low education only would lead to unbalanced samples and comparisons across levels of education. For this reason, 'Denmark 1992' continues to be included in all models of the female share of managers.

Returning to table **E.5** (pg. 402-403), it is clear that the various models of the gender gap in top quintile earnings across levels of education may contain a number of potentially influential cases. In several instances, these cases hold values of D that are well above one. Excluding these observations does not always change results, but in some instances differences in estimates are fairly sizeable. A number of other cases also hold values of D that are fairly large in comparison to most others, particularly in models of the gender gap in top quintile earnings amongst employees with moderate education.

Table **E.7** re-estimates models of the gender gap amongst employees with low and medium education with 'Sweden 90-94' and 'Ireland 2010', 'Austria 90-94', 'Austria 00-04' and 'Luxembourg 85-89' removed, respectively. Dropping 'Sweden 90-94' from models of the gender gap amongst employees with low education (models **A-B**) leads to considerable changes in estimates. In particular, the coefficient on total maternity and parental leave available to mothers almost doubles and the relation becomes highly statistically significant at the 1% level. Similar to the discussion around the exclusion of 'Denmark 1992' in the section above, this alternative model provides stronger evidence to suggest that any adverse effects attached to leave policies are concentrated on the relative attainment of women with low education. However, also like the discussion around 'Denmark 1992', a couple of additional considerations mean that, on balance, it may be best to keep 'Sweden 90-94' in the model.

Table E.7. **Additional two-way fixed effects regression models for the gender gap in the proportion of employees with top quintile earnings, for employees with low and medium education, with possible influential cases removed**

	Dependent variable:	Gender gap in top quintile earnings, low education				Gender gap in top quintile earnings, medium education							
	Reference model	Model **D** in table **7.11**				Model **B** in table **7.10**						Model **E** in table **7.10**	
	Model:	**A**		**B**		**C**	**D**		**E**		**F**	**G**	**H**
	Excluded case(s)	Original model		Sweden 90-94		Original model	Ireland 2010		Austria 90-94		Austria 00-04	Original model	Luxembourg 85-89
Lag	Variable	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE
	Dual earner-carer leave policy																
t-1	Mother-specific earnings-related leave					-0.735	(0.418) ^	-1.013	(0.394) *	-0.906	(0.412) *	-0.906	(0.412) *				
t	Father-specific leave	0.326	(0.444)	0.455	(0.368)	-0.123	(0.259)	-0.071	(0.221)	0.189	(0.269)	0.189	(0.269)	-0.335	(0.230)	-0.479	(0.198) *
t-1	Gender-neutral earnings-related parental leave					0.107	(0.131)	0.129	(0.127)	0.066	(0.152)	0.066	(0.152)				
	Dual earner childcare policy																
t-1	Children under 3 in public childcare	-0.427	(0.322)	-0.033	(0.268)	0.189	(0.191)	0.086	(0.180)	0.082	(0.174)	0.082	(0.174)	0.093	(0.233)	0.358	(0.254)
t-1	Children 3-6 in public pre-primary care or primary school	-0.017	(0.068)	-0.062	(0.076)	-0.020	(0.071)	0.076	(0.059)	-0.001	(0.069)	-0.001	(0.069)	-0.002	(0.085)	0.045	(0.084)
t-1	Public expenditure on childcare services	0.201	(1.073)	0.385	(0.948)	0.050	(0.656)	0.134	(0.605)	0.195	(0.649)	0.195	(0.649)	0.142	(0.676)	0.322	(0.709)
	General family support policy																
t	Child benefit per month for two chlldren	-0.318	(0.536)	-0.096	(0.428)	0.305	(0.459)	0.646	(0.341) ^	0.016	(0.497)	0.016	(0.497)	0.154	(0.368)	0.305	(0.306)
t	Tax support for families	-0.184	(0.407)	-0.240	(0.325)	0.342	(0.213)	0.432	(0.224) ^	0.403	(0.211) ^	0.403	(0.211) ^	0.132	(0.193)	-0.031	(0.180)
t-1	Flat-rate parental leave and childcare leave					-0.151	(0.172)	-0.272	(0.140) ^	-0.269	(0.161)	-0.269	(0.161)				
	Alternative measures of leave policy																
t-1	Total maternity and parental leave available to mothers	0.637	(0.450)	1.225	(0.429) **									0.123	(0.400)	0.309	(0.394)
t-1	(Total maternity and parental leave available to mothers)^2	-0.010	(0.009)	-0.024	(0.009) *									0.000	(0.007)	-0.005	(0.007)
t-1	Childcare leave	0.148	(0.228)	0.154	(0.217)									-0.125	(0.154)	0.116	(0.217)
t-1	Service Sector Size	-0.435	(0.468)	-0.351	(0.418)	0.083	(0.469)	-0.376	(0.258)	0.107	(0.461)	0.107	(0.461)	0.004	(0.455)	0.487	(0.555)
t-1	Public Sector Size	0.227	(1.208)	0.241	(1.121)	0.620	(1.078)	-0.579	(0.708)	0.241	(0.998)	0.241	(0.998)	0.490	(1.110)	1.105	(1.103)
t-1	Crude birth rate	0.135	(1.003)	-0.494	(0.888)	-0.344	(0.657)	0.191	(0.559)	0.061	(0.669)	0.061	(0.669)	-0.179	(0.668)	-0.145	(0.592)
t	Employment protection legislation index	5.308	(2.309) *	5.206	(1.904) *	-0.959	(1.865)	-1.173	(1.665)	-1.418	(1.975)	-1.418	(1.975)	1.727	(1.839)	2.005	(1.807)
t	Economic freedom index	-0.104	(3.200)	0.802	(2.856)	0.706	(1.753)	1.316	(1.621)	-0.665	(1.660)	-0.665	(1.660)	-0.056	(2.223)	-1.266	(2.021)
	Joint F-test on total leave available to mothers and its square (d.f)	1.060	(2, 27)	4.180	(2, 26) *									0.220	(2, 27)	0.320	(2, 26)
	n	80		79		81		80		80		80		81		80	
	r-squared (within)	0.911		0.931		0.956		0.971		0.961		0.961		0.952		0.957	

Note: * = p<0.05 ** = p<0.01 *** = p<0.001. ^ = p<0.1.

Specifications:

A-B. See model A in table 7.11

C-F. See model D in table 7.10

G-H. See model D in table 7.11

First, just as discussed above, it is important to maintain a sample that is as similar as possible across levels of education. There is no clear reason to exclude 'Sweden 90-94' from models of the gap at moderate or high levels of education, so dropping the case at low education only would lead to an unbalanced comparison. Second, examination of the case shows that it provides important evidence to counter any positive relation between general leave and the gender gap in top quintile earnings. More specifically, between the five-year periods '90-94' and '95-99' Sweden couples a sizeable decrease in effective weeks of total maternity and parental leave available to mothers with no real change in the gender gap in top quintile earnings (see tables **C.10** and **C.33** in appendix **C**). Thus, removing the case simply because it changes and solidifies inferences would be to remove an observation that adds important uncertainty to the estimated relation. For these reasons, it is considered best to include 'Sweden 90-94' in the models presented in chapter **7**.

Elsewhere, removing the various other observations from models of the gap amongst employees with moderate education cause several relatively minor changes to findings. Columns **C-F** in table **E.7** show that dropping either 'Ireland 2010', 'Austria 90-94' or 'Austria 00-04' from model **B** in table **7.10** causes the negative relation between mother-specific leave and the gap for employees with moderate education to become significant at the 5% level. This relation was, however, already significant at the more lenient 10% level. Removing 'Luxembourg 85-89' from model **E** in table **7.10**, meanwhile, leads to the negative coefficient on father-specific leave becoming statistically significant. This case is important to include, however, because it couples a substantial drop in the gender gap with no change in father-specific leave (see tables **C.2** and **C.34** in appendix **C**) and therefore again adds important uncertainty to the model.

Finally, table **E.8** (pg. 410) illustrates the impact of removing 'Spain 90-94', 'Denmark 85-89', Australia 85-89' and 'Denmark 00-04' from models of the gender gap in top quintile earnings amongst employees with high education. In most cases, any changes to results produce only small differences in inferences. Dropping 'Denmark 85-89' from model **C** in table **7.10** moves the negative relation on childcare provision for children under three into significance at the 5% level, and also increases the level of significance on both child benefit and flat-rate parental and childcare leave. However, in all three cases changes to broader inferences are only mild – the negative relation on childcare for children under three is already significant in model **F** in table **7.10**, while the negative and significant relation on flat-rate leave adds a little more weight to the very cautious suggestion in

chapter **7** that leave policies may *improve* the relative occupational attainment of highly educated women. Dropping either 'Denmark 85-89' or 'Australia 85-89' from model **F** in table **7.10** meanwhile, moves the negative coefficient on child benefit payments into significance at the 5% level but removing 'Spain 90-94' does the opposite, while excluding either 'Spain 90-94', 'Denmark 85-89' or 'Denmark 00-04' shifts the negative coefficient on childcare leave into significance. This latter relation is however tricky to explain theoretically – it is difficult to see how the introduction of or an extension to these long, unprotected leaves could boost the relative ability of highly educated women to reach top earnings – so it is considered best to rely here on the original full sample results.

Table E.8. **Alternative two-way fixed effects regression models for the gender gap in the proportion of employees with top quintile earnings, for employees with high education, with possible influential cases removed**

	Dependent variable:	Gender gap in top quintile earnings, high education							
	Reference model	Model **C** in table **7.10**			Model **F** in table **7.10**				
	Model:	**A**	**B**	**C**	**D**	**E**	**G**	**F**	**H**
	Excluded case(s)	Original model	Spain 90-94	Denmark 85-89	Original model	Spain 90-94	Denmark 85-89	Australia 85-89	Denmark 00-04
Lag	Variable	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE
	Dual earner-carer leave policy								
t-1	Mother-specific earnings-related leave	-0.886 (0.630)	-1.242 (0.605) ^	-0.638 (0.527)					
t	Father-specific leave	0.823 (0.430) ^	0.922 (0.382) *	0.489 (0.305)	0.434 (0.511)	0.476 (0.414)	0.098 (0.422)	0.579 (0.492)	0.069 (0.516)
t-1	Gender-neutral earnings-related parental leave	0.201 (0.276)	0.046 (0.269)	0.280 (0.222)					
	Dual earner childcare policy								
t-1	Children under 3 in public childcare	-0.870 (0.429) ^	-0.847 (0.421) ^	-0.674 (0.302) *	-0.873 (0.387) *	-1.000 (0.362) *	-0.660 (0.264) *	-1.054 (0.446) *	-0.920 (0.289) **
t-1	Children 3-6 in public pre-primary care or primary school	0.009 (0.104)	-0.027 (0.090)	0.113 (0.096)	0.036 (0.123)	-0.030 (0.101)	0.139 (0.122)	0.063 (0.124)	0.219 (0.161)
t-1	Public expenditure on childcare services	-0.665 (1.202)	-0.815 (1.164)	-1.504 (1.007)	-0.242 (1.490)	-0.937 (1.374)	-0.944 (0.975)	-0.226 (1.509)	0.936 (1.514)
	General family support policy								
t	Child benefit per month for two chlldren	-0.530 (0.308) ^	-0.420 (0.270)	-0.605 (0.229) *	-0.708 (0.413) ^	-0.515 (0.366)	-0.823 (0.344) *	-1.242 (0.528) *	-0.755 (0.438) ^
t	Tax support for families	1.488 (0.525) **	1.177 (0.531) *	1.350 (0.387) **	1.016 (0.377) *	0.615 (0.404)	0.825 (0.286) **	0.981 (0.379) *	0.874 (0.301) **
t-1	Flat-rate parental leave and childcare leave	-0.427 (0.237) ^	-0.544 (0.212) *	-0.430 (0.199) *					
	Alternative measures of leave policy								
t-1	Total maternity and parental leave available to mothers				-0.003 (0.778)	-0.624 (0.833)	-0.070 (0.580)	-0.021 (0.758)	0.972 (0.756)
t-1	(Total maternity and parental leave available to mothers)^2				0.001 (0.012)	0.010 (0.013)	0.002 (0.009)	0.001 (0.012)	-0.014 (0.012)
t-1	Childcare leave				-0.276 (0.203)	-0.533 (0.238) *	-0.296 (0.137) *	-0.334 (0.220)	-0.526 (0.180) *
t-1	Service Sector Size	-0.834 (0.683)	-0.679 (0.673)	0.215 (0.532)	-0.869 (0.729)	-0.881 (0.688)	0.186 (0.575)	-0.807 (0.700)	-0.210 (0.528)
t-1	Public Sector Size	-1.996 (2.257)	-2.302 (2.148)	0.571 (1.513)	-1.581 (2.472)	-2.788 (2.614)	0.922 (1.411)	-2.308 (2.498)	-2.822 (1.925)
t-1	Crude birth rate	-0.551 (1.056)	-0.142 (1.034)	-1.354 (0.854)	-0.422 (1.264)	0.292 (1.282)	-1.126 (0.938)	0.059 (1.349)	0.063 (1.026)
t	Employment protection legislation index	-4.954 (4.091)	12.413 ######	-2.880 (3.060)	-1.750 (3.820)	24.578 ###### ^	-0.461 (3.012)	-2.112 (3.410)	-1.058 (3.111)
t	Economic freedom index	4.211 (3.435)	3.662 (3.100)	0.715 (3.417)	3.437 (3.716)	0.886 (3.799)	-0.165 (3.435)	2.981 (3.672)	0.038 (3.507)
	Joint F-test on total leave available to mothers and its square (d.f)				0.010 (2, 28)	0.320 (2, 27)	0.060 (2, 27)	0.040 (2, 27)	0.830 (2, 27)
	n	82	81	81	82	81	81	81	81
	r-squared (within)	0.968	0.970	0.981	0.963	0.968	0.976	0.966	0.973

Note: * = p<0.05 ** = p<0.01 *** = p<0.001. ^ = p<0.1.

Specifications:

A-C. See model G in table 7.10

D-H. See model G in table 7.11

Appendix F. Fourth statistical appendix to chapter 5, 6 and 7: checks and tests for the influence of missing data imputed using 'last value carried forward' or 'next value carried back'

As touched on in both chapter **3** and appendix **B.3**, this thesis deals with missing data in the indicators of family policy using two techniques – primarily, through linear interpolation between the nearest two non-missing data points, but also through 'last value carried forward' or 'next value carried back' (LVCF/NVCB) where the missing data are at the beginning or end of a series and thus interpolation is not possible.

Neither of these methods are without their faults. Most immediately, as single imputation techniques, both may systematically underestimate variance in the imputed values as neither fully capture uncertainty around the unknown missing data points (Honaker and King, 2010: 563; Nardo et al, 2005: 17; see appendix **B.3**). However, the use of LVCF/NVCB to impute data points at the beginning or end of a series may be particularly problematic. The missing data here reflect almost full ignorance, in as much as there is no information available on the given policy in the given year other than that which exists for the nearest available data point. Assuming that the given policy remained unchanged over the intervening period may well be unrealistic, particularly where the number of years missing at the beginning or end of the series are more than a few.

This final appendix explores the effects on results of using LVCF/NVCB by dropping any cases imputed using LVCF/NVCB from the various regression models presented in the main text. In this respect, it examines the sensitivity of estimates to the use of LVCF/NVCB, at least relative to a situation where the cases in question are deleted entirely. It is unfortunately not possible to test the sensitivity of results against any generated using data imputed through other, potentially superior methods of imputation – such as regression-based methods and in particular multiple imputation – as the author could not get these methods to impute plausible values on the missing data points.

It should be pointed out here that the removal or deletion of any observations imputed using LVCF/NVCB does carry its own risks, most of which revolve around the fact that, through listwise deletion, the removal of any one observation imputed using LVCF/NVCB leads to the loss of the entire case – including information on other, non-missing variables – for the given country in the given year. First and foremost, deleting entire cases in this manner may damage estimates on other variables that are themselves unaffected by missing data if the deleted cases contain information on the other variables that is

important (Little, 1992: 1230; King et al, 1998: 4). Put differently, using listwise deletion risks producing misleading results for other unaffected variables if deletion throws away important known and observed data that would otherwise have been valuable for the estimated relation. Second, omitting cases completely reduces sample size and as a result can – if enough cases are removed – reduce statistical power (Osborne, 2013: 118).

In both cases, the damaging effects of deleting cases are likely to be small if only a few cases are affected. However, as noted by both Osborne (2013: 118) and Schafer and Graham (2002: 156), where models include many independent variables only a small proportion of cases need be missing on each individual variable for a large portion of cases to be deleted from the final model. In this instance, a total of 212[156] observations are imputed using LVCF/NVCB spread across four family policy indicators – 101 on the proportion of children under three years of age in public or publicly supported childcare, 69 on the proportion of children between three and six years of age in publicly run pre-primary education or in primary school, 38 on public expenditure on childcare services per child aged under six, and 4 on tax subsidies for the family. The remaining five indicators of family policy are unaffected by missing data.

To minimize the dangers associated with deleting whole cases – and in particular the possibility that estimates on a given variable may change due to deletion of cases imputed using LVCF/NVCB on a *different* variable – the following presents alternative models with any cases imputed using LVCF/NVCB removed for each affected variable individually, plus an 'overall' model with all cases imputed using LVCF/NVCB across all variables removed. In other words, it goes through each affected variable one-by-one, deleting cases imputed using LVCF/NVCB on the given affected variable only, before presenting a final model with all affected cases across all affected variables removed. Results across the various models are compared, with particular attention paid to any variables that move into or out of significance when any cases imputed using LVCF/NVCB are removed.

By and large, results suggest that deleting cases imputed using LVCF/NVCB does not change substantive conclusions on the effects of those four variables with cases imputed using LVCF/NVCB. There are on occasion minor changes in estimated coefficients and significance test on the four affected variables, but these generally do not lead to changes in wider inferences. In most cases this is either because the same relation was already or

[156] The number of observations actually removed from models when any cases with data imputed using LVCF/NVCB are deleted is usually far lower than this number. This is due to either missing data on the dependent variable, to the time-lags applied to the affected independent variables, or to cases having data imputed using LVCF/NVCB or more than one variable in a given country in a given year.

remains evident elsewhere, or because the estimated coefficient is only very small or only marginally statistically significant. Most important though, all of this thesis' major findings related to the four affected variables remain intact – even once cases imputed using LVCF/NVCB are removed, results continue to suggest that increases in the provision of public childcare services for children aged 0-3 can promote equal labour participation, particularly amongst men and women with low levels of education; that changes in the provision of public services for older children and public childcare spending have little real impact on gender differences in employment outcomes; and that changes in tax support for the family do no harm to female participation.

Removing cases imputed using LVCF/NVCB does at times though lead to changes in estimates on other family policy variables that are themselves unaffected by missing data. In almost all cases these changes can be explained by the loss – through listwise deletion – of specific observations that provide valuable information for the original models presented in the main text.

F.1. Gender gap in labour force participation rates (25-54 year olds)

Tables **F.1** and **F.2** show results for models of the gender gap in labour force participation rates among 25-54 year olds when any cases imputed using LVCF/NVCB are removed. In each case, the original model is shown alongside alternative models with any cases imputed using LVCF/NVCB on a given variable removed plus a final model with all cases imputed using LVCF/NVCB removed. For example, in table **F.1**, specifications **1**-**6** show results for model **A** presented earlier in table **5.3** – specification **1** is the original model, **2**-**5** are models with any cases imputed using LVCF/NVCB on the four affected variables removed respectively, and specification **6** a model that removes all cases imputed using LVCF/NVCB across all four affected variables. For ease of interpretation, the variable(s) with cases removed is highlighted in bold.

Removing cases imputed using LVCF/NVCB from models of the gender gap in labour force participation rates among 25-54 year olds does lead to a couple of changes in results on the affected variables. Results for both the proportion of 0-2 year olds in public or publicly-funded childcare and tax support for the family are generally robust to the deletion of LVCF/NVCB, with both coefficients and significance tests of the coefficients largely unchanged (specifications **2, 5, 6, 8, 11** and **12** in tables **F.1** and **F.2**). However, results do change slightly for the proportion of children aged 3-6 in public pre-primary or primary school, and more so for public expenditure on childcare.

Table F.1. Additional models of the gender gap in labour force participation rates (25-54 year olds) with any data imputed using NVCB/LVCF removed

	Dependent variable:	Gender gap in the labour force participation rate (25-54 year olds)											
	Reference model	Model **A** in table **5.3**						Model **D** in table **5.3**					
	Specification:	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
	Excluded case(s)	Original model	NVCB/LVCF cases omitted - children under 3 in public childcare	NVCB/LVCF cases omitted - children 3-6 in public pre-primary	NVCB/LVCF cases omitted - public expenditure on childcare	NVCB/LVCF cases omitted - tax support for families	All NVCB/LVCF cases removed	Original model	NVCB/LVCF cases omitted - children under 3 in public childcare	NVCB/LVCF cases omitted - children 3-6 in public pre-primary	NVCB/LVCF cases omitted - public expenditure on childcare	NVCB/LVCF cases omitted - tax support for families	All NVCB/LVCF cases removed
Lag	Variable	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE
	Dual earner-carer leave policy												
t-1	Mother-specific earnings-related leave	-0.11 (0.11)	-0.12 (0.12)	-0.05 (0.09)	-0.16 (0.09) ^	-0.10 (0.11)	-0.06 (0.10)	-0.03 (0.12)	0.02 (0.13)	-0.06 (0.09)	-0.10 (0.09)	-0.02 (0.12)	-0.04 (0.10)
t	Father-specific leave	-0.01 (0.05)	-0.04 (0.04)	-0.04 (0.04)	-0.01 (0.04)	-0.01 (0.05)	-0.05 (0.04)	-0.01 (0.04)	-0.04 (0.03)	-0.03 (0.04)	-0.01 (0.03)	0.00 (0.04)	-0.04 (0.03)
t-1	Gender-neutral earnings-related parental leave	-0.03 (0.03)	-0.03 (0.04)	-0.02 (0.02)	-0.03 (0.03)	-0.03 (0.03)	-0.02 (0.03)	0.02 (0.02)	0.04 (0.02) ^	0.00 (0.01)	0.01 (0.01)	0.02 (0.02)	0.02 (0.02)
	Dual earner childcare policy												
t-1	Children under 3 in public childcare	-0.12 (0.05) *	**-0.09 (0.03)** *	-0.09 (0.04) *	-0.11 (0.04) **	-0.12 (0.05) *	**-0.08 (0.03)** *	-0.18 (0.08) *	**-0.17 (0.07)** *	-0.11 (0.07)	-0.16 (0.06) *	-0.19 (0.09) *	**-0.16 (0.04)** **
t-1	Children 3-6 in public pre-primary care or primary school	-0.02 (0.01) ^	-0.01 (0.02)	**-0.01 (0.01)**	-0.01 (0.01)	-0.02 (0.01)	**-0.01 (0.01)**	-0.01 (0.01)	0.00 (0.01)	**-0.02 (0.01)** ^	-0.01 (0.01)	-0.01 (0.01)	**-0.01 (0.02)**
t-1	Public expenditure on childcare services	0.26 (0.18)	0.33 (0.18) ^	0.21 (0.10) ^	**0.21 (0.16)**	0.26 (0.18)	**0.19 (0.10)** ^	0.38 (0.22) ^	0.35 (0.24)	0.28 (0.15) ^	**0.36 (0.16)** *	0.39 (0.22) ^	**0.13 (0.14)**
	General family support policy												
t	Child benefit per month for two chlldren	-0.03 (0.04)	-0.02 (0.04)	0.03 (0.03)	-0.01 (0.02)	-0.04 (0.04)	-0.01 (0.03)	-0.04 (0.04)	-0.02 (0.04)	0.03 (0.03)	-0.02 (0.02)	-0.05 (0.04)	-0.01 (0.03)
t	Tax support for families	-0.04 (0.04)	0.04 (0.07)	-0.02 (0.05)	-0.05 (0.04)	**-0.04 (0.04)**	**-0.03 (0.05)**	-0.03 (0.05)	0.06 (0.08)	-0.02 (0.05)	-0.04 (0.04)	**-0.03 (0.05)**	**-0.03 (0.06)**
t-1	Flat-rate parental leave and childcare leave	0.00 (0.01)	-0.01 (0.01)	-0.03 (0.01) **	-0.01 (0.01)	0.00 (0.01)	-0.03 (0.01) **	-0.01 (0.01)	-0.01 (0.01)	-0.03 (0.01) *	-0.01 (0.01)	-0.01 (0.01)	-0.03 (0.01) **
	Alternative measures of leave policy												
t-1	Total maternity and parental leave available to mothers												
t-1	(Total maternity and parental leave available to mothers) ^{2}												
t-1	Childcare leave												
	Dual earner-carer leave policy interactions with 'Scandinavia' dummy												
t-1	Scandinavia * mother-specific earnings-related leave							-0.28 (0.20)	-0.32 (0.20)	0.01 (0.23)	-0.16 (0.16)	-0.28 (0.22)	-0.01 (0.20)
t	Scandinavia * father-specific leave							0.11 (0.11)	0.01 (0.19)	0.06 (0.16)	0.07 (0.19)	0.09 (0.21)	-0.04 (0.14)
t-1	Scandinavia * gender-neutral earnings-related parental leave							-0.11 (0.04) *	-0.14 (0.03) **	-0.06 (0.04)	-0.10 (0.03) **	-0.11 (0.04) *	-0.10 (0.03)
	Dual earner childcare policy interactions with 'Scandinavia' dummy												
t-1	Scandinavia * children under 3 in public childcare							0.12 (0.08)	0.12 (0.08)	0.03 (0.11)	0.12 (0.06) ^	0.13 (0.09)	0.11 (0.08)
t-1	Scandinavia * children 3-6 in public pre-primary or primary school							0.01 (0.02)	-0.01 (0.02)	0.02 (0.02)	0.01 (0.02)	0.01 (0.02)	0.01 (0.01)
t-1	Scandinavia * public expenditure on childcare services							-0.77 (0.46)	-0.49 (0.39)	-0.41 (0.34)	-0.86 (0.45) ^	-0.78 (0.48)	-0.07 (0.26)
t-1	Service Sector Size	-0.09 (0.09)	-0.20 (0.08) *	-0.03 (0.08)	-0.13 (0.07) ^	-0.08 (0.10)	-0.06 (0.07)	-0.07 (0.08)	-0.16 (0.07)	-0.03 (0.08)	-0.11 (0.06) ^	-0.06 (0.08)	-0.06 (0.06)
t-1	Public Sector Size	0.30 (0.17)	0.35 (0.16) *	0.18 (0.14)	0.24 (0.13) ^	0.29 (0.17)	0.21 (0.11) ^	0.32 (0.17)	0.42 (0.12)	0.17 (0.14)	0.27 (0.13) ^	0.31 (0.17) ^	0.28 (0.08) **
t-1	Crude birth rate	0.22 (0.22)	0.07 (0.21)	0.21 (0.15)	0.38 (0.17) *	0.22 (0.22)	0.21 (0.17)	0.28 (0.18)	0.08 (0.16)	0.25 (0.15) ^	0.46 (0.12) **	0.28 (0.18)	0.23 (0.14)
t-5	Female share of tertiary education students	-0.02 (0.09)	0.07 (0.09)	0.00 (0.05)	-0.13 (0.05) *	-0.02 (0.09)	0.00 (0.05)	-0.01 (0.08)	0.08 (0.08)	0.01 (0.05)	-0.12 (0.04) ^	-0.01 (0.08)	-0.01 (0.06)
t	Employment protection legislation index	-0.39 (0.67)	0.08 (0.51)	-0.65 (0.51)	-0.75 (0.69)	-0.37 (0.69)	-0.09 (0.44)	0.00 (0.76)	0.61 (0.56)	-0.62 (0.63)	-0.48 (0.76)	0.03 (0.80)	0.20 (0.57)
t	Economic freedom index												
	Joint F-test on total leave available to mothers and its square (d.f)												
	n	486	404	397	462	482	320	486	404	397	462	482	320
	r-squared (within)	0.98	0.98	0.99	0.99	0.98	0.99	0.99	0.98	0.99	0.99	0.99	0.99

Note : * = p<0.05 ** = p<0.01 *** = p<0.001. ^ = p<0.1.

Specifications :

1-6. See model A in table 5.3

7-12. See model D in table 5.3

Table F.2. Additional models of the gender gap in labour force participation rates (25-54 year olds) with any data imputed using NVCB/LVCF removed

	Dependent variable:	Gender gap in the labour force participation rate (25-54 year olds)											
	Reference model	Model **A** in table **5.4**						Model **D** in table **5.4**					
	Specification:	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
	Excluded case(s)	Original model	NVCB/LVCF cases omitted - children under 3 in public childcare	NVCB/LVCF cases omitted - children 3-6 in public pre-primary	NVCB/LVCF cases omitted - public expenditure on childcare	NVCB/LVCF cases omitted - tax support for families	All NVCB/LVCF cases removed	Original model	NVCB/LVCF cases omitted - children under 3 in public childcare	NVCB/LVCF cases omitted - children 3-6 in public pre-primary	NVCB/LVCF cases omitted - public expenditure on childcare	NVCB/LVCF cases omitted - tax support for families	All NVCB/LVCF cases removed
Lag	Variable	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE
	Dual earner-carer leave policy												
t-1	Mother-specific earnings-related leave												
t	Father-specific leave	0.02 (0.05)	0.00 (0.04)	-0.03 (0.04)	0.02 (0.05)	0.02 (0.05)	-0.04 (0.04)	0.02 (0.05)	0.00 (0.04)	-0.02 (0.04)	0.02 (0.05)	0.02 (0.05)	-0.03 (0.04)
t-1	Gender-neutral earnings-related parental leave												
	Dual earner childcare policy												
t-1	Children under 3 in public childcare	-0.11 (0.05) *	**-0.09 (0.03)** *	-0.09 (0.04) *	-0.11 (0.04) *	-0.11 (0.05) *	**-0.08 (0.03)** *	-0.12 (0.05) *	**-0.09 (0.04)** *	-0.10 (0.04) *	-0.11 (0.04) **	-0.12 (0.05) *	**-0.09 (0.04)** *
t-1	Children 3-6 in public pre-primary care or primary school	-0.01 (0.01)	-0.01 (0.02)	**-0.01 (0.01)**	-0.01 (0.01)	-0.01 (0.01)	**-0.01 (0.01)**	-0.01 (0.01)	-0.01 (0.02)	**-0.01 (0.01)**	-0.01 (0.01)	-0.01 (0.01)	**-0.01 (0.01)**
t-1	Public expenditure on childcare services	0.25 (0.18)	0.27 (0.18)	0.22 (0.11) ^	**0.20 (0.17)**	0.25 (0.18)	**0.20 (0.09)** *	0.24 (0.19)	0.28 (0.19)	0.21 (0.10) ^	**0.19 (0.17)**	0.24 (0.18)	**0.21 (0.10)** *
	General family support policy												
t	Child benefit per month for two chlldren	-0.02 (0.03)	0.00 (0.03)	0.03 (0.04)	0.00 (0.02)	-0.03 (0.04)	0.00 (0.04)	-0.03 (0.04)	-0.01 (0.04)	0.01 (0.06)	-0.01 (0.03)	-0.03 (0.04)	-0.02 (0.06)
t	Tax support for families	-0.03 (0.04)	0.04 (0.08)	-0.03 (0.05)	-0.05 (0.04)	**-0.03 (0.04)**	**-0.04 (0.05)**	-0.03 (0.04)	0.05 (0.07)	-0.02 (0.05)	-0.05 (0.04)	**-0.04 (0.04)**	**-0.03 (0.05)**
t-1	Flat-rate parental leave and childcare leave												
	Alternative measures of leave policy												
t-1	Total maternity and parental leave available to mothers	-0.05 (0.02) ^	-0.06 (0.02) *	-0.04 (0.02)	-0.05 (0.02) ^	-0.05 (0.02) ^	-0.05 (0.02) *	-0.11 (0.09)	-0.12 (0.08)	-0.12 (0.07) ^	-0.14 (0.08) ^	-0.11 (0.09)	-0.11 (0.06) ^
t-1	(Total maternity and parental leave available to mothers)^2							0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
t-1	Childcare leave	0.01 (0.01)	0.01 (0.01)	-0.02 (0.01)	0.01 (0.01)	0.01 (0.01)	-0.02 (0.01) *	0.01 (0.01)	0.01 (0.01)	-0.02 (0.01)	0.00 (0.01)	0.01 (0.01)	-0.02 (0.01) *
t-1	Service Sector Size	-0.08 (0.09)	-0.21 (0.07) **	-0.03 (0.07)	-0.12 (0.06) ^	-0.08 (0.09)	-0.07 (0.06)	-0.08 (0.09)	-0.20 (0.07) **	-0.03 (0.08)	-0.11 (0.06) ^	-0.07 (0.09)	-0.07 (0.06)
t-1	Public Sector Size	0.32 (0.18) ^	0.41 (0.16) *	0.19 (0.13)	0.24 (0.14)	0.31 (0.18) ^	0.24 (0.09) *	0.32 (0.17) ^	0.40 (0.15) *	0.20 (0.12)	0.25 (0.13) ^	0.32 (0.17) ^	0.23 (0.08) *
t-1	Crude birth rate	0.18 (0.20)	0.01 (0.17)	0.20 (0.14)	0.34 (0.17) ^	0.18 (0.20)	0.19 (0.15)	0.17 (0.20)	0.00 (0.18)	0.21 (0.15)	0.32 (0.17) ^	0.17 (0.20)	0.20 (0.16)
t-5	Female share of tertiary education students	-0.01 (0.08)	0.08 (0.08)	0.00 (0.05)	-0.12 (0.05) *	-0.01 (0.09)	0.00 (0.05)	-0.02 (0.09)	0.07 (0.08)	0.00 (0.05)	-0.13 (0.05) *	-0.02 (0.09)	0.00 (0.05)
t	Employment protection legislation index	-0.31 (0.52)	0.18 (0.37)	-0.65 (0.48)	-0.54 (0.55)	-0.30 (0.54)	-0.09 (0.33)	-0.41 (0.59)	0.12 (0.41)	-0.82 (0.53)	-0.69 (0.61)	-0.40 (0.61)	-0.19 (0.38)
t	Economic freedom index												
	Joint F-test on total leave available to mothers and its square (d.f)							2.43 (2, 19)	4.66 (2, 19) *	4.28 (2, 19) *	3.07 (2, 19) ^	2.35 (2, 19)	6.17 (2, 19) **
	n	486	404	397	462	482	320	486	404	397	462	482	320
	r-squared (within)	0.98	0.98	0.99	0.99	0.98	0.99	0.98	0.98	0.99	0.99	0.98	0.99

Note : * = p<0.05 ** = p<0.01 *** = p<0.001. ^ = p<0.1. The joint F-test on total maternity and parental leave available to mothers and its square tests the null that the two are jointly equal to zero.

Specifications :

1-6. See model A in table 5.4

7-12. See model D in table 5.4

Changes in results for the proportion of children aged 3-6 in public pre-primary or primary school are mixed and only small. Specifications **3** and **9** in table **F.1** show that when any LVCF/NVCB cases are removed from models **A** and **D** in table **5.3**, the small negative coefficient on the proportion of children aged 3-6 in public pre-primary or primary school moves into and out of significance at the more lenient 10% level, respectively. In all cases the estimated coefficients are tiny – the estimated effect of a 49 percentage point increase in the proportion of 3-6 year olds in public pre-primary education or school, the largest observed over the series, is at most a decrease in the gender gap of just 0.9 percentage points, all else equal – and significance at only the 10% level suggests the relation is far from conclusive. As a result, this change is considered to make little difference to substantive conclusions.

Changes in results for public expenditure on childcare are though a little more consistent and considerable in magnitude. Specification **10** in table **F.1**, for example, shows that when cases that use LVCF/NVCB to impute data on public expenditure on childcare are removed from model **D** shown in table **5.3**, the positive coefficient on public expenditure on childcare moves into significance at the 5% level, while specifications **6** in table **F.1** and **6** and **12** in **F.2** show something similar when all LVCF/NVCB cases are removed from their respective models. The consistency of this change is concerning for the results shown earlier in the main text, but the relation itself is curious – it suggests that, all else equal, an increase in public childcare spending can *increase* the gender gap in labour participation rates. It is difficult using the theory to explain how expanding childcare spending could have such a damaging effect on equal participation – in that it is not clear how an increase in childcare spending would actively *discourage* female headcount participation (see chapter 2) – but it is possible that the true relation may actually run in reverse, with an increase in childcare expenditure a response to little or no growth in female economic activity.

Elsewhere, removing cases imputed using LVCF/NVCB from models of the gender gap in labour participation does lead to changes in estimates on several other variables that do not themselves suffer missing data. This is particularly the case with regard to the estimated associations on changes in weeks of flat rate parental and childcare leave and changes in total general leave available to mothers. Specifications **6** and **12** in table **F.1**, for example, show that deleting cases imputed using LVCF/NVCB leads to the negative coefficient on changes in flat rate parental and childcare becoming highly significant, while specifications **6** and **12** in **F.2** show something similar for changes in both total general leave available to mothers and changes in childcare leave. These alternative results would,

if valid, provide stronger evidence to suggest that changes in leave policies can reduce gender gaps in labour force participation, although this would be unexpected in the case of childcare leave given that, theory-wise, these extended leaves should do little to promote female activity.

In all cases, however, these changes can be explained by the removal through listwise deletion of cases that provide important information on these variables. The shift into significance of flat rate parental and childcare leave in specifications **6** and **12** in table **F.1**, for example, can be explained entirely[157] by the loss of observations for Denmark and Sweden between 1985 and 1992 and Luxembourg in 1985. In doing so, these models miss the period before the introduction of the childcare leave in Denmark in 1992 – which coincides with an *increase* in the gender gap in labour participation – and much of the period before the introduction of a similar leave in Luxembourg in 1987, which coincides with no immediate change in gender differences in labour participation. As a result, these alternative models – with any cases imputed using LVCF/NVCB removed – lose valuable uncertainty around the estimated relations and risk producing misleading results.

Similarly, the shift of total general leave available to mothers and its square into joint significance in specification **12** in table **F.2** can be explained by the loss of observations for Portugal between 2005-10 and New Zealand between 1985-2003. Both countries changed provision of total general leave for mothers during the period in question, with in both cases little apparent immediate effect on the gender gap in labour force participation rates. Thus, the deletion of theses cases again has the effect of removing important uncertainty and counter-information from the model, and again risks producing misleading estimates and inferences.

F.2. Gender gap in labour force participation rates (25-34 year olds)

Table **F.3** shows results for models of the gender gap in labour force participation rates among the younger 25-34 year old age group when any cases imputed using LVCF/NVCB are removed. Specifications **1** and **7** are again the original models shown earlier in the main body, with **2-5** and **8-11** models with any cases imputed using LVCF/NVCB on the four affected variables removed individually, and **6** and **12** models with all cases imputed using LVCF/NVCB removed. Again, for ease of interpretation, the variable(s) with cases removed is highlighted in bold.

[157] Removing only these cases from the models produces the same results

Table F.3. Additional models of the gender gap in labour force participation rates (25-34 year olds) with any data imputed using NVCB/LVCF removed

	Dependent variable:	Gender gap in the labour force participation rate (25-34 year olds)											
	Reference model	Model **A** in table **5.5**						Model **D** in table **5.5**					
	Specification:	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
	Excluded case(s)	Original model	NVCB/LVCF cases omitted - children under 3 in public childcare	NVCB/LVCF cases omitted - children 3-6 in public pre-primary	NVCB/LVCF cases omitted - public expenditure on childcare	NVCB/LVCF cases omitted - tax support for families	All NVCB/LVCF cases removed	Original model	NVCB/LVCF cases omitted - children under 3 in public childcare	NVCB/LVCF cases omitted - children 3-6 in public pre-primary	NVCB/LVCF cases omitted - public expenditure on childcare	NVCB/LVCF cases omitted - tax support for families	All NVCB/LVCF cases removed
Lag	Variable	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE
	Dual earner-carer leave policy												
t-1	Mother-specific earnings-related leave	-0.32 (0.12) *	-0.28 (0.15) ^	-0.19 (0.12)	-0.34 (0.12) **	-0.32 (0.12) *	-0.13 (0.14)						
t	Father-specific leave	-0.05 (0.08)	-0.09 (0.06)	-0.12 (0.07)	-0.05 (0.07)	-0.05 (0.08)	-0.16 (0.05) **	0.02 (0.07)	0.00 (0.05)	-0.07 (0.06)	0.02 (0.07)	0.02 (0.07)	-0.10 (0.05) ^
t-1	Gender-neutral earnings-related parental leave	-0.09 (0.04) ^	-0.09 (0.05) ^	-0.06 (0.04)	-0.09 (0.04) ^	-0.09 (0.04) ^	-0.06 (0.04)						
	Dual earner childcare policy												
t-1	Children under 3 in public childcare	-0.21 (0.06) **	**-0.18 (0.06)** **	-0.14 (0.07) *	-0.20 (0.06) **	-0.21 (0.06) **	**-0.12 (0.04)** **	-0.22 (0.07) **	**-0.19 (0.06)** **	-0.13 (0.07) ^	-0.22 (0.06) **	-0.22 (0.07) **	**-0.11 (0.05)** *
t-1	Children 3-6 in public pre-primary care or primary school	0.01 (0.02)	0.02 (0.03)	**0.02 (0.01)** ^	0.01 (0.02)	0.01 (0.02)	**0.03 (0.01)** *	0.02 (0.02)	0.02 (0.03)	**0.03 (0.01)** ^	0.02 (0.02)	0.02 (0.02)	**0.03 (0.01)** **
t-1	Public expenditure on childcare services	0.21 (0.35)	0.18 (0.32)	0.22 (0.19)	**0.16 (0.35)**	0.22 (0.35)	**0.08 (0.16)**	0.17 (0.36)	0.11 (0.35)	0.22 (0.19)	**0.12 (0.36)**	0.17 (0.36)	**0.07 (0.18)**
	General family support policy												
t	Child benefit per month for two chlldren	-0.06 (0.06)	-0.04 (0.05)	0.07 (0.06)	-0.06 (0.07)	-0.06 (0.07)	0.06 (0.07)	-0.05 (0.07)	-0.02 (0.06)	0.07 (0.10)	-0.05 (0.07)	-0.05 (0.07)	0.09 (0.10)
t	Tax support for families	-0.08 (0.07)	-0.01 (0.09)	-0.02 (0.09)	-0.09 (0.07)	**-0.08 (0.07)**	**-0.06 (0.08)**	-0.07 (0.07)	0.02 (0.08)	-0.02 (0.08)	-0.09 (0.07)	**-0.07 (0.07)**	**-0.06 (0.07)**
t-1	Flat-rate parental leave and childcare leave	-0.01 (0.02)	-0.02 (0.02)	-0.04 (0.02) *	-0.01 (0.02)	-0.01 (0.02)	-0.05 (0.01) *						
	Alternative measures of leave policy												
t-1	Total maternity and parental leave available to mothers							-0.29 (0.11) *	-0.31 (0.10) **	-0.20 (0.12)	-0.30 (0.11) *	-0.29 (0.11) *	-0.16 (0.11)
t-1	(Total maternity and parental leave available to mothers)^2							0.00 (0.00) ^	0.00 (0.00) ^	0.00 (0.00)	0.00 (0.00) ^	0.00 (0.00) ^	0.00 (0.00)
t-1	Childcare leave							0.01 (0.02)	0.01 (0.01)	-0.01 (0.02)	0.01 (0.01)	0.01 (0.02)	0.00 (0.01)
t-1	Service Sector Size	-0.12 (0.10)	-0.24 (0.10) *	-0.03 (0.08)	-0.14 (0.10)	-0.12 (0.10)	-0.05 (0.07)	-0.10 (0.10)	-0.22 (0.08) *	-0.02 (0.07)	-0.11 (0.09)	-0.10 (0.10)	-0.07 (0.06)
t-1	Public Sector Size	0.29 (0.21)	0.37 (0.25)	0.25 (0.21)	0.27 (0.21)	0.29 (0.21)	0.27 (0.19)	0.30 (0.21)	0.42 (0.23) ^	0.28 (0.19)	0.27 (0.20)	0.30 (0.21)	0.38 (0.12) **
t-1	Crude birth rate	0.79 (0.35) *	0.64 (0.31) ^	0.65 (0.28) *	0.92 (0.34) *	0.79 (0.35) *	0.60 (0.29) ^	0.68 (0.34) ^	0.49 (0.28) ^	0.60 (0.29) ^	0.79 (0.35) *	0.68 (0.34) ^	0.51 (0.27) ^
t-5	Female share of tertiary education students	-0.11 (0.11)	-0.03 (0.09)	-0.08 (0.09)	-0.18 (0.10) ^	-0.11 (0.11)	-0.06 (0.09)	-0.13 (0.12)	-0.03 (0.08) ^	-0.08 (0.09)	-0.20 (0.11) ^	-0.13 (0.12)	-0.05 (0.09)
t	Employment protection legislation index	-0.04 (0.77)	-0.18 (0.63)	-0.12 (0.62)	-0.35 (0.80)	-0.05 (0.78)	0.22 (0.52)	0.03 (0.70)	-0.19 (0.59)	-0.24 (0.67)	-0.23 (0.71)	0.02 (0.71)	0.03 (0.50)
t	Economic freedom index												
	Joint F-test on total leave available to mothers and its square (d.f)							7.16 (2, 19) **	14.2 (2, 19) ***	6.90 (2, 19) **	6.39 (2, 19) **	7.16 (2, 19) **	20.4 (2, 19) ***
	n	485	403	396	461	481	319	485	403	396	461	481	319
	r-squared (within)	0.96	0.95	0.97	0.96	0.96	0.96	0.96	0.95	0.97	0.96	0.96	0.96

Note : * = p<0.05 ** = p<0.01 *** = p<0.001. ^ = p<0.1. The joint F-test on total maternity and parental leave available to mothers and its square tests the null that the two are jointly equal to zero.

Specifications :

1-6. See model A in table 5.5

7-12. See model D in table 5.5

Removing cases imputed using LVCF/NVCB from models of the gender gap in labour force participation rates amongst 25-34 year olds has little impact on results for those variables that suffer from missing data. Similar to the results shown above for the broader age group, specifications **3** and **9** show that removing cases imputed using LVCF/NVCB leads to the proportion of children aged 3-6 in public pre-primary or primary school moving into significance at the more lenient 10% level, although in this case the coefficient is positive – in other words, there is some admittedly still weak suggestion that increasing the proportion of children aged 3-6 in public pre-primary or primary school leads to a *increase* in the gender gap in labour participation. Again though, the coefficient is tiny – the estimated effect of a 49 week increase in the proportion of 3-6 year olds in public pre-primary or primary school is at most a 1.3 percentage point increase in the gender gap. Otherwise, those variables that suffer missing data are generally robust to the removal of cases with data imputed using LVCF/NVCB.

Like results for the gender gap in labour participation amongst 25-54 year olds shown above, removing cases imputed using LVCF/NVCB does lead to some change in estimates for variables that do not themselves suffer missing data. Specification **6**, for example, shows that once all cases imputed using LVCF/NVCB are removed, the negative coefficients on mother-specific earnings related leave and gender-neutral earnings related leave move out of significance and that on flat rate parental and childcare leave again moves into significance at the 5% level. The former can be explained by the loss of observations for Denmark and Finland between 1985 and 1992 – so that the models miss much of the period before the subsequent decreases in mother-specific and gender-neutral earnings-related leaves and the coinciding increases in gender differences in labour participation – while the latter can again be explained by the deletion of observations for Denmark and Sweden between 1985 and 1992.

Specifications **12** and particularly **6** also show that the negative coefficient on father-specific leave comes into significance once all cases imputed using LVCF/NVCB are dropped from their respective models. If valid, this would provide evidence to suggest that an expansion in paternity and other father-specific leaves can promote equal participation in general, in addition to the evidence that father-specific leaves may close gender gaps in participation among highly educated men and women (see chapter **7**). Again though, the shift into significance can be explained by the loss of cases that provide important counter-information to the suggested association – in this case, the shift can be explained by the loss of data for Finland 1985-1992, the Netherlands 2004-10, and Portugal 2005-

10, all of which provide information to suggest that an increase in father-specific leave has, to varying extents, little impact on gender differences in labour participation among 25-34 year olds.

F.3. Gender gap in usual weekly working hours (25-54 year olds)

Tables **F.4** and **F.5** show results for models of the gender gap in usual weekly working house rates when any cases imputed using LVCF/NVCB are removed. In both tables, specifications **1** and **7** are the original models shown earlier in the main body, with **2-5** and **8-11** models with any cases imputed using LVCF/NVCB on the four affected variables removed individually, and **6** and **12** models with all cases imputed using LVCF/NVCB removed. Again, for ease of interpretation, the variable(s) with cases removed is highlighted in bold.

Removing cases imputed using LVCF/NVCB from models of the gender gap in usual weekly working hours has very little impact on results for those variables that suffer from missing data. The only even slight change is in specification **12** in table **F.4**, where the positive coefficient on public expenditure on childcare services moves into significance at the 10% level once all cases imputed using LVCF/NVCB across all variables are removed. This relation is not though evident in those models where only cases that use LVCF/NVCB to impute missing data for public expenditure in childcare specifically are removed (specifications **4** and **10** in tables **F.4** and **F.5**) – suggesting that the change is driven mostly if not entirely by the deletion of observations with missing data on the other three affected variables – nor is it apparent in the other three models where all LVCF/NVCB cases are removed (specifications **6** in table **F.4** and **6** and **12** in table **F.5**).

Similarly, removing cases imputed using LVCF/NVCB makes no difference at all to results on those variables that do not suffer from missing data. Generally then, results for the gender gap in usual weekly working hours appear robust to the removal of any cases imputed using LVCF/NVCB.

Table F.4. Additional models of the gender gap in usual weekly working hours with any data imputed using NVCB/LVCF removed

	Dependent variable:	Gender gap in usual weekly working hours (25-54 year olds)											
	Reference model	Model **A** in table 5.7						Model D in table 5.7					
	Specification:	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
	Excluded case(s)	Original model	NVCB/LVCF cases omitted - children under 3 in public childcare	NVCB/LVCF cases omitted - children 3-6 in public pre-primary	NVCB/LVCF cases omitted - public expenditure on childcare	NVCB/LVCF cases omitted - tax support for families	All NVCB/LVCF cases removed	Original model	NVCB/LVCF cases omitted - children under 3 in public childcare	NVCB/LVCF cases omitted - children 3-6 in public pre-primary	NVCB/LVCF cases omitted - public expenditure on childcare	NVCB/LVCF cases omitted - tax support for families	All NVCB/LVCF cases removed
Lag	Variable	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE
	Dual earner-carer leave policy												
t-1	Mother-specific earnings-related leave	-0.04 (0.03)	-0.02 (0.04)	-0.05 (0.03) ^	-0.03 (0.03)	-0.04 (0.03)	-0.04 (0.04)	-0.04 (0.02)	-0.02 (0.03)	-0.05 (0.02) ^	-0.04 (0.03)	-0.04 (0.02)	-0.03 (0.04)
t	Father-specific leave	-0.02 (0.01)	-0.02 (0.02)	0.00 (0.02)	-0.01 (0.01)	-0.02 (0.01)	-0.01 (0.02)	0.00 (0.01)	-0.02 (0.02)	0.01 (0.01)	0.00 (0.01)	0.00 (0.01)	-0.01 (0.02)
t-1	Gender-neutral earnings-related parental leave	-0.01 (0.01)	-0.01 (0.01)	-0.02 (0.01)	-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.02)	-0.02 (0.01)	-0.01 (0.01)	-0.02 (0.01)	-0.02 (0.01) ^	-0.02 (0.01)	-0.01 (0.01)
	Dual earner childcare policy												
t-1	Children under 3 in public childcare	0.03 (0.02)	**0.02 (0.02)**	0.01 (0.02)	0.03 (0.02)	0.03 (0.02)	**0.01 (0.02)**	-0.01 (0.02)	**-0.01 (0.02)**	-0.02 (0.02)	-0.01 (0.02)	-0.01 (0.02)	**0.00 (0.02)**
t-1	Children 3-6 in public pre-primary care or primary school	-0.01 (0.01)	-0.01 (0.01)	**0.00 (0.01)**	-0.01 (0.01)	-0.01 (0.01)	**-0.01 (0.01)**	-0.01 (0.01)	-0.01 (0.01)	**-0.01 (0.01)**	-0.01 (0.01)	-0.01 (0.01)	**-0.01 (0.01)**
t-1	Public expenditure on childcare services	0.01 (0.09)	0.05 (0.07)	0.05 (0.08)	**0.01 (0.09)**	0.01 (0.09)	**0.12 (0.08)**	0.07 (0.07)	0.10 (0.08)	0.09 (0.07)	**0.08 (0.08)**	0.08 (0.08)	**0.14 (0.08)** ^
	General family support policy												
t	Child benefit per month for two chlldren	-0.02 (0.01)	-0.01 (0.01)	-0.02 (0.02)	-0.02 (0.01) ^	-0.02 (0.01)	-0.01 (0.02)	-0.02 (0.01)	-0.01 (0.01)	-0.02 (0.02)	-0.02 (0.01)	-0.02 (0.01) ^	-0.01 (0.02)
t	Tax support for families	0.01 (0.03)	0.00 (0.03)	-0.01 (0.04)	0.01 (0.03)	**0.01 (0.03)**	**-0.02 (0.04)**	0.00 (0.02)	-0.01 (0.03)	-0.02 (0.03)	-0.01 (0.03)	**-0.01 (0.02)**	**-0.02 (0.04)**
t-1	Flat-rate parental leave and childcare leave	0.00 (0.01)	0.01 (0.01)	0.01 (0.01)	0.00 (0.01)	0.00 (0.01)	0.01 (0.01)	0.00 (0.01)	0.01 (0.01)	0.01 (0.01)	0.00 (0.01)	0.00 (0.01)	0.01 (0.01)
	Alternative measures of leave policy												
t-1	Total maternity and parental leave available to mothers												
t-1	(Total maternity and parental leave available to mothers)^2												
t-1	Childcare leave												
t-1	Service Sector Size	0.09 (0.04) *	0.14 (0.02) ***	0.05 (0.03)	0.09 (0.04) *	0.09 (0.04) *	0.06 (0.02) *	0.08 (0.03) *	0.11 (0.02) **	0.06 (0.02) *	0.08 (0.03) *	0.08 (0.03) *	0.05 (0.02) *
t-1	Public Sector Size	0.05 (0.08)	0.04 (0.05)	0.06 (0.05)	0.07 (0.08)	0.05 (0.08)	0.09 (0.05) ^	0.09 (0.06)	0.10 (0.05) ^	0.09 (0.04) ^	0.10 (0.06)	0.09 (0.06)	0.11 (0.04) *
t-1	Crude birth rate	-0.04 (0.07)	-0.05 (0.07)	0.05 (0.07)	-0.05 (0.07)	-0.04 (0.07)	0.03 (0.08)	-0.05 (0.06)	-0.07 (0.08)	0.01 (0.07)	-0.06 (0.06)	-0.05 (0.06)	0.02 (0.08)
t-5	Female share of tertiary education students	0.04 (0.03)	0.02 (0.03)	-0.01 (0.02)	0.05 (0.03)	0.04 (0.03)	0.00 (0.03)	0.04 (0.03)	0.02 (0.03)	-0.01 (0.02)	0.05 (0.04)	0.04 (0.03)	0.01 (0.03)
t	Employment protection legislation index	-0.32 (0.30)	-0.74 (0.52)	-0.27 (0.27)	-0.28 (0.31)	-0.32 (0.30)	-0.76 (0.48)	-0.53 (0.28) ^	-0.74 (0.44)	-0.42 (0.25)	-0.52 (0.29) ^	-0.51 (0.28) ^	-0.75 (0.44)
t	Economic freedom index												
t-1	Female employment rate (25-54 year olds)							0.09 (0.03) **	0.08 (0.04) *	0.07 (0.02) **	0.10 (0.03) **	0.10 (0.03) **	0.05 (0.03)
	Joint F-test on total leave available to mothers and its square (d.f)												
	n	416	356	350	401	412	295	415	356	350	400	411	295
	r-squared (within)	0.90	0.90	0.90	0.90	0.90	0.90	0.91	0.91	0.90	0.91	0.91	0.90

Note: * = p<0.05 ** = p<0.01 *** = p<0.001. ^ = p<0.1.

Specifications:

1-6. See model A in table 5.7

7-12. See model D in table 5.7

Table F.5. Additional models of the gender gap in usual weekly working hours with any data imputed using NVCB/LVCF removed

	Dependent variable:	Gender gap in usual weekly working hours (25-54 year olds)											
	Reference model	Model **A** in table 5.8						Model **D** in table 5.8					
	Specification:	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
	Excluded case(s)	Original model	NVCB/LVCF cases omitted - children under 3 in public childcare	NVCB/LVCF cases omitted - children 3-6 in public pre-primary	NVCB/LVCF cases omitted - public expenditure on childcare	NVCB/LVCF cases omitted - tax support for families	All NVCB/LVCF cases removed	Original model	NVCB/LVCF cases omitted - children under 3 in public childcare	NVCB/LVCF cases omitted - children 3-6 in public pre-primary	NVCB/LVCF cases omitted - public expenditure on childcare	NVCB/LVCF cases omitted - tax support for families	All NVCB/LVCF cases removed
Lag	Variable	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE
	Dual earner-carer leave policy												
t-1	Mother-specific earnings-related leave												
t	Father-specific leave	0.00 (0.02)	-0.02 (0.02)	0.01 (0.02)	0.00 (0.02)	0.00 (0.02)	-0.02 (0.02)	0.00 (0.02)	-0.02 (0.02)	0.00 (0.01)	0.00 (0.02)	0.00 (0.02)	-0.02 (0.02)
t-1	Gender-neutral earnings-related parental leave												
	Dual earner childcare policy												
t-1	Children under 3 in public childcare	-0.01 (0.02)	**-0.01 (0.02)**	-0.01 (0.02)	-0.01 (0.02)	-0.01 (0.02)	**0.00 (0.02)**	-0.01 (0.02)	**0.00 (0.02)**	-0.01 (0.02)	-0.01 (0.02)	-0.01 (0.02)	**0.00 (0.02)**
t-1	Children 3-6 in public pre-primary care or primary school	-0.01 (0.01)	-0.01 (0.01)	**-0.01 (0.01)**	-0.01 (0.01)	-0.01 (0.01)	**-0.01 (0.01)**	-0.01 (0.01)	-0.01 (0.01)	**-0.01 (0.01)**	-0.01 (0.01)	-0.01 (0.01)	**-0.01 (0.01)**
t-1	Public expenditure on childcare services	0.07 (0.07)	0.09 (0.08)	0.08 (0.07)	**0.07 (0.07)**	0.07 (0.07)	**0.14 (0.09)**	0.07 (0.07)	0.09 (0.08)	0.09 (0.07)	**0.07 (0.07)**	0.07 (0.07)	**0.13 (0.08)**
	General family support policy												
t	Child benefit per month for two chlldren	-0.01 (0.01)	-0.01 (0.01)	-0.02 (0.02)	-0.02 (0.01)	-0.02 (0.01)	-0.01 (0.02)	-0.01 (0.01)	-0.01 (0.01)	0.00 (0.02)	-0.02 (0.01)	-0.02 (0.01)	0.00 (0.03)
t	Tax support for families	0.00 (0.03)	0.00 (0.03)	-0.01 (0.04)	0.00 (0.03)	**0.00 (0.03)**	**-0.02 (0.04)**	0.00 (0.03)	0.00 (0.03)	-0.02 (0.04)	0.00 (0.03)	**0.00 (0.03)**	**-0.02 (0.04)**
t-1	Flat-rate parental leave and childcare leave												
	Alternative measures of leave policy												
t-1	Total maternity and parental leave available to mothers	-0.01 (0.01)	0.00 (0.01)	-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)	0.01 (0.01)	-0.01 (0.04)	0.02 (0.03)	0.05 (0.03)	0.00 (0.04)	-0.01 (0.04)	0.07 (0.03) *
t-1	(Total maternity and parental leave available to mothers)^2							0.00 (0.00)	0.00 (0.00)	0.00 (0.00) ^	0.00 (0.00)	0.00 (0.00)	0.00 (0.00) ^
t-1	Childcare leave	0.00 (0.00)	0.00 (0.00)	0.00 (0.01)	0.00 (0.00)	0.00 (0.00)	0.00 (0.01)	0.00 (0.00)	0.00 (0.00)	0.00 (0.01)	0.00 (0.00)	0.00 (0.00)	0.00 (0.01)
t-1	Service Sector Size	0.08 (0.03) *	0.11 (0.02) ***	0.07 (0.03) *	0.08 (0.03) *	0.08 (0.03) *	0.06 (0.02) **	0.08 (0.03) *	0.11 (0.02) ***	0.07 (0.03) ^	0.08 (0.03) *	0.08 (0.03) *	0.06 (0.02) *
t-1	Public Sector Size	0.09 (0.06)	0.10 (0.06)	0.08 (0.05) ^	0.11 (0.06) ^	0.09 (0.06)	0.11 (0.05) *	0.09 (0.06)	0.11 (0.06)	0.09 (0.05) ^	0.11 (0.06) ^	0.09 (0.06)	0.13 (0.05) *
t-1	Crude birth rate	-0.06 (0.06)	-0.05 (0.08)	-0.01 (0.07)	-0.07 (0.06)	-0.06 (0.06)	0.03 (0.09)	-0.06 (0.06)	-0.05 (0.08)	-0.02 (0.07)	-0.07 (0.06)	-0.06 (0.06)	0.02 (0.08)
t-5	Female share of tertiary education students	0.04 (0.03)	0.02 (0.03)	-0.01 (0.02)	0.05 (0.04)	0.04 (0.03)	0.01 (0.03)	0.04 (0.03)	0.02 (0.02)	-0.01 (0.02)	0.05 (0.03)	0.04 (0.03)	0.01 (0.03)
t	Employment protection legislation index	-0.43 (0.28)	-0.69 (0.44)	-0.29 (0.23)	-0.42 (0.28)	-0.42 (0.28)	-0.63 (0.43)	-0.42 (0.31)	-0.67 (0.45)	-0.15 (0.28)	-0.41 (0.31)	-0.41 (0.30)	-0.51 (0.49)
t	Economic freedom index												
t-1	Female employment rate (25-54 year olds)	0.09 (0.03) **	0.07 (0.04) ^	0.07 (0.02) *	0.09 (0.03) **	0.09 (0.03) **	0.04 (0.03)	0.09 (0.03) **	0.07 (0.04) ^	0.07 (0.02) *	0.09 (0.03) **	0.09 (0.03) **	0.04 (0.03)
	Joint F-test on total leave available to mothers and its square (d.f)							0.66 (2, 18)	0.40 (2, 18)	1.89 (2, 18)	0.76 (2, 17)	0.65 (2, 18)	2.57 (2, 18)
	n	415	356	350	400	411	295	415	356	350	400	411	295
	r-squared (within)	0.91	0.90	0.90	0.91	0.91	0.90	0.91	0.90	0.90	0.91	0.91	0.90

Note : * = p<0.05 ** = p<0.01 *** = p<0.001. ^ = p<0.1.

Specifications :

1-6. See model A in table 5.8

7-12. See model D in table 5.8

F.4. Gender gap in the proportion of employees in 'female-type' occupations (all ages)

Table **F.6** shows results for models of the gender gap in employment in 'female type' occupations when any cases imputed using LVCF/NVCB are deleted. Specifications **1**, **7** and **13** are the original models shown earlier in the main body, with **2-5**, **8-11** and **14-17** models with any cases imputed using LVCF/NVCB on the affected variables removed individually, and **6**, **12** and **18** models with all cases imputed using LVCF/NVCB removed. It is worth noting here that, because of missing data on the dependent variable, the original models use no cases where missing data for tax support for the family are imputed using LVCF/NVCB. As a result, models **5**, **11** and **17** are left blank.

Generally, results for the proportion of employees in 'female type' occupations are robust to the removal of any cases with data imputed using LVCF/NVCB. There are no changes in results for the three variables that are affected by missing data, regardless of whether only their own LVCF/NVCB cases or all LVCF/NVCB cases are removed from the model. Similarly, there are very few changes in results on those variables that are not themselves affected by missing data. The only exception is in specification **6**, where the positive coefficient on child benefit payments shifts out of significance entirely. However, as covered in the main text, this relation was already known to be driven entirely by Australia, where in 2000 an increase in the generosity of child care benefit coincides with a jump in the proportion of women working in 'female-type' jobs (see chapter **6.4**). Appropriately, the shift in significance here can be explained entirely by the loss of observations for Australia over the years 1985-2001 due to missing data on the proportion of 3-6 year olds in public pre-primary education or primary school.

Table F.6. Additional models of the gender gap in the proportion of employees in 'female-type' occupations with any data imputed using NVCB/LVCF removed

Dependent variable: Gender gap in the proportion of employees in 'female-type' occupations

Reference model: Model **A** in table **6.3**

Lag	Variable	1 Original model (B SE)	2 NVCB/LVCF cases omitted - children under 3 in public childcare	3 NVCB/LVCF cases omitted - children 3-6 in public pre-primary	4 NVCB/LVCF cases omitted - public expenditure on childcare	5 NVCB/LVCF cases omitted - tax support for families	6 All NVCB/LVCF cases removed (B SE)
	Dual earner-carer leave policy						
t-1	Mother-specific earnings-related leave	-0.07 (0.19)	-0.09 (0.20)	-0.10 (0.17)	-0.10 (0.17)	- -	-0.28 (0.14) ^
t	Father-specific leave	0.00 (0.04)	0.01 (0.05)	0.02 (0.05)	0.02 (0.05)	- -	0.06 (0.06)
t-1	Gender-neutral earnings-related parental leave	0.02 (0.02)	0.01 (0.02)	0.03 (0.02)	0.03 (0.02)	- -	0.00 (0.02)
	Dual earner childcare policy						
t	Children under 3 in public childcare	-0.04 (0.06)	**-0.05 (0.07)**	-0.02 (0.05)	-0.02 (0.05)	- -	**-0.05 (0.06)**
t	Children 3-6 in public pre-primary care or primary school	0.01 (0.01)	0.00 (0.02)	**0.01 (0.01)**	0.01 (0.01)	- -	**0.01 (0.01)**
t	Public expenditure on childcare services	0.29 (0.25)	0.25 (0.26)	0.30 (0.21)	**0.30 (0.21)**	- -	**0.25 (0.25)**
	General family support policy						
t	Child benefit per month for two children	0.09 (0.04) *	0.03 (0.05)	0.10 (0.04) ^	0.10 (0.04) *	- -	0.00 0.058
t	Tax support for families	0.05 (0.07)	0.00 (0.06)	0.07 (0.06)	0.07 (0.06)	- -	0.08 0.067
t-1	Flat-rate parental leave and childcare leave	0.02 (0.02)	0.03 (0.02)	0.02 (0.02)	0.02 (0.02)	- -	0.01 0.03
	Alternative measures of leave policy						
t-1	Total maternity and parental leave available to mothers						
t-1	(Total maternity and parental leave available to mothers)[2]						
t-1	Childcare leave						
t	Service Sector Size	-0.14 (0.15)	-0.18 (0.17)	-0.07 (0.13)	-0.07 (0.13)	- -	0.02 (0.15)
t	Public Sector Size	0.63 (0.27) *	0.49 (0.29)	0.67 (0.24) *	0.67 (0.24) *	- -	0.45 (0.30)
t-1	Crude birth rate	-0.42 (0.28)	-0.33 (0.30)	-0.43 (0.25)	-0.43 (0.25)	- -	-0.33 (0.32)
t-5	Female share of tertiary education students	-0.15 (0.11)	-0.14 (0.14)	-0.04 (0.11)	-0.04 (0.11)	- -	-0.16 (0.13)
t	Employment protection legislation index	1.11 (0.80)	0.85 (0.91)	1.18 (0.75)	1.18 (0.75)	- -	0.77 (0.77)
	Economic freedom index						
	Joint F-test on total leave available to mothers and its square (d.f)						
	n	301	237	274	281	-	213
	r-squared (within)	0.79	0.78	0.79	0.79	-	0.81

Reference model: Model **A** in table **6.4**

Lag	Variable	7 Original model (B SE)	8 NVCB/LVCF cases omitted - children under 3 in public childcare	9 NVCB/LVCF cases omitted - children 3-6 in public pre-primary	10 NVCB/LVCF cases omitted - public expenditure on childcare	11 NVCB/LVCF cases omitted - tax support for families	12 All NVCB/LVCF cases removed (B SE)
	Dual earner-carer leave policy						
t-1	Mother-specific earnings-related leave						
t	Father-specific leave	-0.02 (0.04)	0.00 (0.05)	-0.01 (0.05)	0.01 (0.04)	- -	0.03 (0.06)
t-1	Gender-neutral earnings-related parental leave						
	Dual earner childcare policy						
t	Children under 3 in public childcare	-0.06 (0.06)	**-0.06 (0.05)**	-0.06 (0.07)	-0.03 (0.05)	- -	**-0.04 (0.06)**
t	Children 3-6 in public pre-primary care or primary school	0.01 (0.01)	0.01 (0.01)	**0.00 (0.01)**	0.01 (0.01)	- -	**0.01 (0.01)**
t	Public expenditure on childcare services	0.23 (0.26)	0.29 (0.33)	0.16 (0.26)	**0.25 (0.22)**	- -	**0.24 (0.31)**
	General family support policy						
t	Child benefit per month for two children	0.07 (0.04)	0.01 (0.05)	0.01 (0.06)	0.09 (0.04) ^	- -	-0.04 (0.06)
t	Tax support for families	0.05 (0.07)	0.05 (0.07)	0.01 (0.06)	0.07 (0.06)	- -	0.09 (0.07)
t-1	Flat-rate parental leave and childcare leave						
	Alternative measures of leave policy						
t-1	Total maternity and parental leave available to mothers	0.03 (0.02)	0.01 (0.03)	0.04 (0.02)	0.03 (0.02)	- -	0.02 (0.03)
t-1	(Total maternity and parental leave available to mothers)[2]						
t-1	Childcare leave	-0.03 (0.03)	-0.03 (0.04)	-0.03 (0.04)	-0.02 (0.03)	- -	-0.03 (0.03)
t	Service Sector Size	-0.16 (0.14)	-0.04 (0.10)	-0.19 (0.15)	-0.09 (0.12)	- -	-0.01 (0.13)
t	Public Sector Size	0.71 (0.25) *	0.70 (0.29) *	0.62 (0.28) *	0.75 (0.22) **	- -	0.58 (0.28) ^
t-1	Crude birth rate	-0.43 (0.31)	-0.51 (0.35)	-0.33 (0.36)	-0.44 (0.29)	- -	-0.30 (0.38)
t-5	Female share of tertiary education students	-0.16 (0.12)	-0.17 (0.10)	-0.15 (0.15)	-0.07 (0.11)	- -	-0.19 (0.14)
t	Employment protection legislation index	1.53 (0.56) *	1.90 (0.51) **	1.41 (0.60) *	1.67 (0.56) **	- -	1.65 (0.56) *
	Economic freedom index						
	Joint F-test on total leave available to mothers and its square (d.f)						
	n	301	237	274	281	-	213
	r-squared (within)	0.79	0.78	0.79	0.79	-	0.81

Reference model: Model **D** in table **6.4**

Lag	Variable	13 Original model (B SE)	14 NVCB/LVCF cases omitted - children under 3 in public childcare	15 NVCB/LVCF cases omitted - children 3-6 in public pre-primary	16 NVCB/LVCF cases omitted - public expenditure on childcare	17 NVCB/LVCF cases omitted - tax support for families	18 All NVCB/LVCF cases removed (B SE)
	Dual earner-carer leave policy						
t-1	Mother-specific earnings-related leave						
t	Father-specific leave	-0.01 (0.04)	0.00 (0.05)	0.01 (0.05)	0.02 (0.05)	- -	0.04 (0.07)
t-1	Gender-neutral earnings-related parental leave						
	Dual earner childcare policy						
t	Children under 3 in public childcare	-0.06 (0.06)	**-0.06 (0.05)**	-0.07 (0.07)	-0.03 (0.05)	- -	**-0.05 (0.07)**
t	Children 3-6 in public pre-primary care or primary school	0.01 (0.01)	0.01 (0.01)	**0.00 (0.02)**	0.01 (0.01)	- -	**0.00 (0.01)**
t	Public expenditure on childcare services	0.23 (0.26)	0.29 (0.33)	0.13 (0.25)	**0.25 (0.22)**	- -	**0.23 (0.30)**
	General family support policy						
t	Child benefit per month for two children	0.07 (0.05)	0.01 (0.06)	-0.02 (0.05)	0.08 (0.05) ^	- -	-0.06 (0.06)
t	Tax support for families	0.05 (0.06)	0.05 (0.07)	0.03 (0.07)	0.07 (0.06)	- -	0.10 (0.07)
t-1	Flat-rate parental leave and childcare leave						
	Alternative measures of leave policy						
t-1	Total maternity and parental leave available to mothers	0.01 (0.09)	0.01 (0.10)	-0.10 (0.09)	0.01 (0.10)	- -	-0.05 (0.11)
t-1	(Total maternity and parental leave available to mothers)[2]	0.00 (0.00)	0.00 (0.00)	0.00 (0.00) ^	0.00 (0.00)	- -	0.00 (0.00)
t-1	Childcare leave	-0.03 (0.03)	-0.03 (0.04)	-0.03 (0.04)	-0.02 (0.03)	- -	-0.03 (0.02)
t	Service Sector Size	-0.16 (0.15)	-0.04 (0.10)	-0.18 (0.16)	-0.09 (0.12)	- -	0.00 (0.14)
t	Public Sector Size	0.70 (0.26) *	0.70 (0.32) *	0.52 (0.30) ^	0.73 (0.23) **	- -	0.52 (0.32)
t-1	Crude birth rate	-0.43 (0.31)	-0.51 (0.35)	-0.32 (0.35)	-0.44 (0.29)	- -	-0.28 (0.37)
t-5	Female share of tertiary education students	-0.16 (0.12)	-0.17 (0.09) ^	-0.15 (0.14)	-0.07 (0.12)	- -	-0.18 (0.13)
t	Employment protection legislation index	1.45 (0.61) *	1.91 (0.57) **	0.95 (0.60)	1.59 (0.62)	- -	1.44 (0.62) *
	Economic freedom index						
	Joint F-test on total leave available to mothers and its square (d.f)	2.92 (2, 17) ^	0.04 (2, 16)	6.86 (2, 17) **	2.24 (2, 17)		0.65 (2, 17)
	n	301	237	274	281	-	213
	r-squared (within)	0.79	0.78	0.80	0.79	-	0.81

Note : * = p<0.05 ** = p<0.01 *** = p<0.001. ^ = p<0.1. The joint F-test on total maternity and parental leave available to mothers and its square tests the null that the two are jointly equal to zero.

Specifications :

1-6. See model A in table 6.3

7-12. See model A in table 6.4

13-18. See model D in table 6.4

F.5. Female share of managers (all ages)

Table **F.7** shows results for models of the female share of managers when any cases imputed using LVCF/NVCB are deleted. Specifications **1**, **7** and **13** are the original models shown earlier in the main body, with **2-5**, **8-11** and **14-17** models with any cases imputed using LVCF/NVCB on the affected variables removed individually, and **6**, **12** and **18** models with all cases imputed using LVCF/NVCB removed. Again, it is worth noting that because of missing data on the dependent variable, the original models use no cases where missing data for tax support for the family are imputed using LVCF/NVCB so **5, 11** and **17** are left blank.

As far as the three variables affected by missing data are concerned, removing any cases imputed using LVCF/NVCB makes almost no difference at all to results. The only exception is in specification **18**, where the negative coefficient on the proportion of 3-6 year olds in public pre-primary education or primary school shifts out of significance from the 10% level. However, it remains significant at the 10% level in models **3**, **9** and **15** – where only cases that use LVCF/NVCB to impute missing data for the proportion of 3 to 6 year olds in public pre-primary education or primary school are removed – which suggests that the shift is caused mostly by the removal of LVCF/NVCB on the other affected variables.

Removing cases imputed using LVCF/NVCB does though lead to a couple of changes in the estimated relations on variables that are not themselves affected by missing data. Specification **12**, for example, shows that the coefficient on child benefit becomes positive and significant once all cases imputed using LVCF/NVCB are removed from model **B** in table **6.6**. This change is driven entirely by the removal of observations for Australia 1985-2001, Ireland 2004-10, and New Zealand, 1985-2003, but in any case the relation itself is curious – it is difficult using the theory to explain how an increase in child benefit could lead directly to an increase in female access to managerial positions.

More importantly perhaps, specification **18** shows that the negative association between changes in total general leave available to mothers and the female share of managers falls out of significance completely once all cases imputed using LVCF/NVCB are removed from model **C** in table **6.6**. If valid, this would damage the conclusion that increases in leave may lead to a reduction in female access to managerial employment. However, this change can again be explained by the loss of cases that contain important information – more specifically, the change in result is driven entirely by the loss of observations for Canada (all years) and New Zealand 1985-2003, where in both cases an increase in total general

Table F.7. Additional models of the female share of managers with any data imputed using NVCB/LVCF removed

Dependent variable: Female share of managerial employment

Reference model: Model **A** in table **6.6**

Lag	Variable	**1** Original model (B SE)	**2** NVCB/LVCF cases omitted - children under 3 in public childcare (B SE)	**3** NVCB/LVCF cases omitted - children 3-6 in public pre-primary (B SE)	**4** NVCB/LVCF cases omitted - public expenditure on childcare (B SE)	**5** NVCB/LVCF cases omitted - tax support for families (B SE)	**6** All NVCB/LVCF cases removed (B SE)
	Dual earner-carer leave policy						
t-1	Mother-specific earnings-related leave	0.18 (0.14)	0.20 (0.22)	0.19 (0.15)	0.23 (0.18)	- -	0.22 (0.27)
t	Father-specific leave	0.14 (0.08) ^	0.19 (0.10) ^	0.11 (0.09)	0.16 (0.08)	- -	0.18 (0.09) ^
t-1	Gender-neutral earnings-related parental leave	0.03 (0.04)	0.03 (0.06)	0.07 (0.05)	0.03 (0.05)	- -	0.06 (0.05)
	Dual earner childcare policy						
t	Children under 3 in public childcare	0.10 (0.10)	**0.06 (0.12)**	0.11 (0.11)	0.11 (0.09)	- -	**0.10 (0.13)**
t	Children 3-6 in public pre-primary care or primary school	-0.08 (0.04) ^	-0.06 (0.04)	**-0.08 (0.04)** ^	-0.09 (0.04)	- -	**-0.07 (0.04)** ^
t	Public expenditure on childcare services	-0.07 (0.26)	0.01 (0.43)	-0.09 (0.29)	**-0.07 (0.32)**	- -	**0.16 (0.53)**
	General family support policy						
t	Child benefit per month for two children	0.06 (0.06)	0.12 (0.08)	0.13 (0.08)	0.06 (0.06)	- -	0.18 (0.08) ^
t	Tax support for families	0.01 (0.06)	-0.04 (0.09)	-0.03 (0.07)	0.02 (0.06)	- -	-0.03 (0.09)
t-1	Flat-rate parental leave and childcare leave	0.06 (0.07)	0.05 (0.07)	0.06 (0.06)	0.09 (0.07)	- -	0.08 (0.06)
	Alternative measures of leave policy						
t-1	Total maternity and parental leave available to mothers						
t-1	(Total maternity and parental leave available to mothers)^2						
t-1	Childcare leave						
t	Service Sector Size	0.07 (0.15)	-0.25 (0.20)	0.13 (0.15)	0.10 (0.14)	- -	-0.14 (0.15)
t	Public Sector Size	-0.30 (0.38)	-0.16 (0.32)	-0.14 (0.41)	-0.36 (0.39)	- -	-0.09 (0.38)
t-1	Crude birth rate	-0.10 (0.30)	-0.27 (0.50)	-0.15 (0.38)	-0.15 (0.31)	- -	-0.57 (0.52)
t-5	Female share of tertiary education students	0.09 (0.10)	-0.09 (0.13)	0.06 (0.11)	0.08 (0.12)	- -	-0.01 (0.13)
t	Employment protection legislation index	0.37 (1.01)	0.67 (1.45)	0.61 (0.95)	0.39 (1.12)	- -	1.25 (1.39)
t	Economic freedom index	-0.91 (1.22)	0.11 (1.69)	-1.30 (1.48)	-0.44 (1.18)		-0.27 (1.81)
	Joint F-test on total leave available to mothers and its square (d.f)						
	n	332	262	302	311	-	235
	r-squared (within)	0.69	0.58	0.68	0.69	-	0.59

Reference model: Model **B** in table **6.6**

Lag	Variable	**7** Original model (B SE)	**8** NVCB/LVCF cases omitted - children under 3 in public childcare (B SE)	**9** NVCB/LVCF cases omitted - children 3-6 in public pre-primary (B SE)	**10** NVCB/LVCF cases omitted - public expenditure on childcare (B SE)	**11** NVCB/LVCF cases omitted - tax support for families (B SE)	**12** All NVCB/LVCF cases removed (B SE)
	Dual earner-carer leave policy						
t-1	Mother-specific earnings-related leave						
t	Father-specific leave	0.11 (0.10)	0.17 (0.12)	0.07 (0.11)	0.14 (0.10)	- -	0.18 (0.10)
t-1	Gender-neutral earnings-related parental leave						
	Dual earner childcare policy						
t	Children under 3 in public childcare	0.08 (0.09)	**0.03 (0.11)**	0.08 (0.10)	0.09 (0.08)	- -	**0.08 (0.11)**
t	Children 3-6 in public pre-primary care or primary school	-0.08 (0.04) ^	-0.06 (0.04)	**-0.08 (0.04)** ^	-0.09 (0.04) ^	- -	**-0.07 (0.04)**
t	Public expenditure on childcare services	-0.16 (0.27)	-0.10 (0.48)	-0.17 (0.30)	**-0.13 (0.35)**	- -	**0.12 (0.58)**
	General family support policy						
t	Child benefit per month for two children	0.05 (0.06)	0.13 (0.08)	0.10 (0.08)	0.07 (0.06)	- -	0.18 (0.08) *
t	Tax support for families	0.03 (0.07)	-0.03 (0.09)	-0.03 (0.08)	0.05 (0.07)	- -	-0.03 (0.09)
t-1	Flat-rate parental leave and childcare leave						
	Alternative measures of leave policy						
t-1	Total maternity and parental leave available to mothers	0.08 (0.06)	0.07 (0.07)	0.10 (0.06)	0.08 (0.06)	- -	0.08 (0.07)
t-1	(Total maternity and parental leave available to mothers)^2						
t-1	Childcare leave	-0.02 (0.05)	-0.01 (0.06)	-0.04 (0.06)	0.01 (0.06)	- -	0.03 (0.07)
t	Service Sector Size	0.08 (0.15)	-0.21 (0.19)	0.13 (0.14)	0.13 (0.14)	- -	-0.12 (0.15)
t	Public Sector Size	-0.21 (0.38)	-0.09 (0.31)	0.00 (0.40)	-0.30 (0.40)	- -	-0.07 (0.35)
t-1	Crude birth rate	-0.06 (0.29)	-0.23 (0.50)	-0.08 (0.37)	-0.09 (0.32)	- -	-0.56 (0.53)
t-5	Female share of tertiary education students	0.12 (0.10)	-0.08 (0.13)	0.06 (0.11)	0.11 (0.11)	- -	-0.01 (0.12)
t	Employment protection legislation index	0.23 (0.94)	0.36 (1.31)	0.55 (0.85)	-0.04 (1.00)	- -	0.87 (1.32)
t	Economic freedom index	-0.81 (1.15)	0.15 (1.63)	-1.21 (1.39)	-0.49 (1.19)		-0.83 (1.14)
	Joint F-test on total leave available to mothers and its square (d.f)						
	n	332	262	302	311	-	235
	r-squared (within)	0.69	0.58	0.69	0.69	-	0.59

Reference model: Model **C** in table **6.6**

Lag	Variable	**13** Original model (B SE)	**14** NVCB/LVCF cases omitted - children under 3 in public childcare (B SE)	**15** NVCB/LVCF cases omitted - children 3-6 in public pre-primary (B SE)	**16** NVCB/LVCF cases omitted - public expenditure on childcare (B SE)	**17** NVCB/LVCF cases omitted - tax support for families (B SE)	**18** All NVCB/LVCF cases removed (B SE)
	Dual earner-carer leave policy						
t-1	Mother-specific earnings-related leave						
t	Father-specific leave	0.14 (0.10)	0.19 (0.12)	0.09 (0.13)	0.17 (0.10)	- -	0.19 (0.11)
t-1	Gender-neutral earnings-related parental leave						
	Dual earner childcare policy						
t	Children under 3 in public childcare	0.04 (0.09)	**0.01 (0.10)**	0.06 (0.11)	0.05 (0.08)	- -	**0.07 (0.11)**
t	Children 3-6 in public pre-primary care or primary school	-0.08 (0.04) ^	-0.07 (0.05)	**-0.08 (0.04)** ^	-0.09 (0.04) *	- -	**-0.07 (0.04)**
t	Public expenditure on childcare services	-0.22 (0.27)	-0.13 (0.53)	-0.21 (0.28)	**-0.18 (0.35)**	- -	**0.10 (0.59)**
	General family support policy						
t	Child benefit per month for two children	0.01 (0.05)	0.07 (0.07)	0.06 (0.09)	0.03 (0.05)	- -	0.15 (0.11)
t	Tax support for families	0.06 (0.07)	0.01 (0.12)	0.00 (0.10)	0.07 (0.07)	- -	-0.01 (0.13)
t-1	Flat-rate parental leave and childcare leave						
	Alternative measures of leave policy						
t-1	Total maternity and parental leave available to mothers	-0.23 (0.15)	-0.21 (0.26)	-0.06 (0.24)	-0.21 (0.16)	- -	-0.03 (0.30)
t-1	(Total maternity and parental leave available to mothers)^2	0.00 (0.00) *	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	- -	0.00 (0.00)
t-1	Childcare leave	-0.04 (0.05)	-0.02 (0.06)	-0.04 (0.05)	-0.01 (0.06)	- -	0.03 (0.07)
t	Service Sector Size	0.07 (0.14)	-0.19 (0.19)	0.12 (0.14)	0.11 (0.13)	- -	-0.11 (0.14)
t	Public Sector Size	-0.26 (0.31)	-0.25 (0.35)	-0.07 (0.41)	-0.37 (0.33)	- -	-0.14 (0.46)
t-1	Crude birth rate	0.02 (0.28)	-0.22 (0.50)	-0.05 (0.35)	-0.03 (0.31)	- -	-0.53 (0.51)
t-5	Female share of tertiary education students	0.10 (0.10)	-0.05 (0.11)	0.07 (0.11)	0.08 (0.11)	- -	0.00 (0.12)
t	Employment protection legislation index	-0.51 (0.80)	-0.29 (1.27)	0.12 (0.99)	-0.73 (0.88)	- -	0.57 (1.44)
t	Economic freedom index	-0.39 (1.12)	0.21 (1.61)	-0.91 (1.57)	-0.14 (1.16)		-0.29 (1.91)
	Joint F-test on total leave available to mothers and its square (d.f)	6.44 (2, 19) **	1.97 (2, 18)	2.55 (2, 19)	5.27 (2, 19) *		1.11 (2, 19)
	n	332	262	302	311	-	235
	r-squared (within)	0.70	0.59	0.69	0.70	-	0.59

Note : * = p<0.05 ** = p<0.01 *** = p<0.001. ^ = p<0.1. The joint F-test on total maternity and parental leave available to mothers and its square tests the null that the two are jointly equal to zero.

Specifications :

1-6. See model A in table 6.6

7-12. See model B in table 6.6

13-18. See model C in table 6.6

leave available to mothers coincide with at least a slight drop in the female share of managerial employment.

F.6. Gender gap in the proportion of employees with top-quintile annual earnings (25-54)

Table **F.8** shows results for models of the gender gap in top quintile earnings when any cases imputed using LVCF/NVCB are removed. Specifications **1**, **7** and **13** are again the original models shown earlier in the main body, with **2-5**, **8-11** and **14-17** models with any cases imputed using LVCF/NVCB on the four affected variables removed individually, and **6**, **12** and **18** models with all cases imputed using LVCF/NVCB removed. Again, for ease of interpretation, the variable(s) with cases removed is highlighted in bold.

By and large, removing cases imputed using LVCF/NVCB makes little difference to results on those variables that suffer from missing data. The only exception is in specification **4**, where deleting cases with data on public expenditure on childcare services that are imputed using LVCF/NVCB leads to the negative coefficient on public expenditure on childcare becoming large and significant at the 10% level. This association would, if valid, provide at least some evidence to suggest that increasing childcare spending could promote women's relative access to top earnings. However, it is not evident in either of the other two specifications where LVCF/NVCB cases for public expenditure on childcare are removed (specifications **8** and **16**) or those where all LVCF/NVCB cases are removed (**6**, **12** and **18**), and in any case is significant only at the more lenient 10% level.

More widely though, removing cases imputed using LVCF/NVCB does impact on results for the other included variables in as much results collapse completely once all LVCF/NVCB cases are removed. More specifically, in specifications **6**, **12** and **18** estimated relations on *all* included variables move out of significance and, moreover, the coefficients on many variables shift in size and in some cases change sign. Put a different way, removing all LVCF/NVCB cases radically changes estimates to the point where results are unrecognizable from those in the original models.

The most likely explanation here is that removing all cases imputed using LVCF/NVCB leads to the loss of many valuable cases and, perhaps more importantly, reduces the sample size to the point where there is little power left in the model. Due to measurement at five-year intervals, the sample size for models of the gender gap in top earnings was already small at 85 observations. After removing any cases imputed using LVCF/NVCB, this falls by almost a third to 58. Given that these models include at least 16 independent

Table F.8. Additional models of the gender gap in top quintile earnings with any data imputed using NVCB/LVCF removed

Dependent variable: Gender gap in the proportion of employees with top quintile earnings

Reference model: Model A in table 6.8

Lag	Variable	1 Original model	2 NVCB/LVCF cases omitted - children under 3 in public childcare	3 NVCB/LVCF cases omitted - children 3-6 in public pre-primary	4 NVCB/LVCF cases omitted - public expenditure on childcare	5 NVCB/LVCF cases omitted - tax support for families	6 All NVCB/LVCF cases removed
		B (SE)	B (SE)	B (SE)	B (SE)	B (SE)	B (SE)
	Dual earner-carer leave policy						
t	Mother-specific earnings-related leave	0.12 (0.29)	0.08 (0.35)	-0.03 (0.34)	0.21 (0.32)	0.11 (0.29)	-0.09 (0.56)
t	Father-specific leave	-0.07 (0.15)	-0.12 (0.18)	-0.06 (0.19)	-0.12 (0.16)	-0.09 (0.16)	-0.08 (0.29)
t	Gender-neutral earnings-related parental leave	0.22 (0.11) ^	0.12 (0.15)	0.30 (0.19)	0.11 (0.13)	0.24 (0.11) *	-0.30 (0.65)
	Dual earner childcare policy						
t	Children under 3 in public childcare	-0.01 (0.15)	**0.14 (0.21)**	-0.09 (0.20)	0.07 (0.18)	-0.02 (0.15)	0.39 (0.43)
t	Children 3-6 in public pre-primary care or primary school	-0.06 (0.04)	-0.06 (0.10)	**-0.09 (0.06)**	-0.02 (0.06)	-0.07 (0.05)	0.07 (0.26)
t	Public expenditure on childcare services	-0.36 (0.54)	-0.81 (0.78)	-0.63 (0.84)	**-1.21 (0.69)** ^	-0.29 (0.55)	-2.32 (1.56)
	General family support policy						
t	Child benefit per month for two children	0.23 (0.16)	0.18 (0.19)	0.55 (0.28) ^	0.15 (0.17)	0.38 (0.25)	0.27 (0.68)
t	Tax support for families	0.45 (0.20) *	0.15 (0.32)	0.57 (0.25) *	0.23 (0.25)	**0.48 (0.21)** *	-0.33 (0.92)
t	Flat-rate parental leave and childcare leave	-0.08 (0.10)	-0.15 (0.13)	-0.12 (0.13)	-0.05 (0.12)	-0.10 (0.10)	-0.25 (0.18)
	Alternative measures of leave policy						
t	Total maternity and parental leave available to mothers						
t	(Total maternity and parental leave available to mothers)^2						
t	Childcare leave						
t	Service Sector Size	-0.24 (0.24)	-0.28 (0.42)	-0.35 (0.34)	-0.01 (0.33)	-0.30 (0.26)	0.72 (1.20)
t	Public Sector Size	-0.99 (0.51) ^	-0.70 (0.63)	-1.13 (0.74)	-0.21 (0.64)	-1.11 (0.53) *	-0.02 (1.56)
t	Crude birth rate	0.06 (0.47)	1.22 (0.80)	-0.12 (0.72)	0.55 (0.62)	-0.01 (0.49)	2.40 (2.18)
t-5	Female share of tertiary education students	-0.28 (0.26)	-0.17 (0.31)	-0.44 (0.36)	-0.14 (0.34)	-0.37 (0.29)	0.02 (0.80)
t	Employment protection legislation index	1.48 (1.94)	-0.50 (3.67)	0.82 (2.42)	2.57 (2.49)	1.42 (1.96)	0.22 (4.67)
t	Economic freedom index	0.11 (1.66)	2.22 (2.50)	0.25 (1.99)	1.28 (2.15)	0.03 (1.67)	3.13 (4.16)
	Joint F-test on total leave available to mothers and its square (d.f)						
	n	85	70	76	76	84	58
	r-squared (within)	0.91	0.93	0.91	0.91	0.91	0.96

Reference model: Model A in table 6.9

Lag	Variable	7 Original model	8 NVCB/LVCF cases omitted - children under 3 in public childcare	9 NVCB/LVCF cases omitted - children 3-6 in public pre-primary	10 NVCB/LVCF cases omitted - public expenditure on childcare	11 NVCB/LVCF cases omitted - tax support for families	12 All NVCB/LVCF cases removed
		B (SE)	B (SE)	B (SE)	B (SE)	B (SE)	B (SE)
	Dual earner-carer leave policy						
t	Mother-specific earnings-related leave						
t	Father-specific leave	-0.32 (0.15) *	-0.37 (0.18) *	-0.26 (0.20)	-0.27 (0.15) ^	-0.31 (0.15) *	-0.12 (0.33)
t	Gender-neutral earnings-related parental leave						
	Dual earner childcare policy						
t	Children under 3 in public childcare	-0.12 (0.13)	**0.01 (0.18)**	-0.17 (0.19)	-0.04 (0.17)	-0.12 (0.13)	**0.27 (0.53)**
t	Children 3-6 in public pre-primary care or primary school	-0.05 (0.04)	-0.13 (0.09)	**-0.05 (0.05)**	-0.01 (0.05)	-0.05 (0.04)	**-0.02 (0.27)**
t	Public expenditure on childcare services	0.30 (0.52)	0.44 (0.87)	0.26 (0.74)	**-0.46 (0.70)**	0.29 (0.54)	**-1.45 (2.87)**
	General family support policy						
t	Child benefit per month for two children	0.17 (0.14)	0.08 (0.16)	0.23 (0.23)	0.10 (0.15)	0.16 (0.20)	0.24 (0.47)
t	Tax support for families	0.28 (0.16) ^	0.09 (0.23)	0.27 (0.19)	0.17 (0.17)	**0.28 (0.16)** ^	**-0.19 (0.36)**
t	Flat-rate parental leave and childcare leave						
	Alternative measures of leave policy						
t	Total maternity and parental leave available to mothers	0.24 (0.09) *	0.23 (0.13)	0.20 (0.14)	0.15 (0.10)	0.24 (0.09) *	-0.12 (0.54)
t	(Total maternity and parental leave available to mothers)^2						
t	Childcare leave	-0.16 (0.08) *	-0.22 (0.09) *	-0.19 (0.10) ^	-0.17 (0.09) ^	-0.16 (0.08) ^	-0.23 (0.15)
t	Service Sector Size	-0.38 (0.22) ^	-0.50 (0.37)	-0.34 (0.31)	-0.17 (0.30)	-0.38 (0.23)	0.33 (1.07)
t	Public Sector Size	-1.58 (0.51) **	-1.61 (0.68) *	-1.73 (0.72) *	-0.98 (0.66)	-1.57 (0.53) **	-0.67 (2.01)
t	Crude birth rate	0.44 (0.43)	1.17 (0.66) ^	0.63 (0.60)	1.00 (0.52) ^	0.44 (0.44)	2.09 (1.51)
t-5	Female share of tertiary education students	-0.48 (0.24) ^	-0.39 (0.28)	-0.56 (0.33)	-0.50 (0.34)	-0.48 (0.27) ^	-0.12 (0.69)
t	Employment protection legislation index	2.12 (1.56)	-0.45 (2.82)	1.43 (2.02)	2.12 (1.89)	2.12 (1.59)	-0.78 (4.11)
t	Economic freedom index	-0.97 (1.55)	-1.00 (2.63)	-0.72 (1.89)	-0.06 (2.01)	-0.97 (1.57)	1.15 (7.13)
	Joint F-test on total leave available to mothers and its square (d.f)						
	n	85	70	76	76	84	58
	r-squared (within)	0.93	0.95	0.92	0.93	0.92	0.96

Reference model: Model D in table 6.9

Lag	Variable	13 Original model	14 NVCB/LVCF cases omitted - children under 3 in public childcare	15 NVCB/LVCF cases omitted - children 3-6 in public pre-primary	16 NVCB/LVCF cases omitted - public expenditure on childcare	17 NVCB/LVCF cases omitted - tax support for families	18 All NVCB/LVCF cases removed
		B (SE)	B (SE)	B (SE)	B (SE)	B (SE)	B (SE)
	Dual earner-carer leave policy						
t	Mother-specific earnings-related leave						
t	Father-specific leave	-0.33 (0.14) *	-0.42 (0.17) *	-0.26 (0.20)	-0.30 (0.15) ^	-0.33 (0.15) *	-0.13 (0.28)
t	Gender-neutral earnings-related parental leave						
	Dual earner childcare policy						
t	Children under 3 in public childcare	-0.14 (0.13)	**-0.02 (0.17)**	-0.17 (0.19)	-0.06 (0.16)	-0.14 (0.13)	**0.24 (0.44)**
t	Children 3-6 in public pre-primary care or primary school	-0.06 (0.04)	-0.17 (0.09) ^	**-0.05 (0.05)**	-0.01 (0.05)	-0.06 (0.04)	**-0.10 (0.23)**
t	Public expenditure on childcare services	0.41 (0.52)	0.54 (0.83)	0.42 (0.76)	**-0.42 (0.68)**	0.39 (0.54)	**-0.64 (2.46)**
	General family support policy						
t	Child benefit per month for two children	0.17 (0.14)	0.08 (0.15)	0.19 (0.24)	0.11 (0.14)	0.13 (0.20)	0.07 (0.41)
t	Tax support for families	0.31 (0.16) ^	0.06 (0.22)	0.27 (0.19)	0.21 (0.17)	**0.31 (0.16)** ^	**-0.29 (0.31)**
t	Flat-rate parental leave and childcare leave						
	Alternative measures of leave policy						
t	Total maternity and parental leave available to mothers	0.58 (0.28) *	0.77 (0.34) *	0.49 (0.37)	0.54 (0.28) ^	0.59 (0.29) *	0.58 (0.59)
t	(Total maternity and parental leave available to mothers)^2	-0.01 (0.00)	-0.01 (0.00)	0.00 (0.01)	-0.01 (0.00)	-0.01 (0.00)	-0.01 (0.01)
t	Childcare leave	-0.14 (0.08) ^	-0.18 (0.09) ^	-0.17 (0.10)	-0.14 (0.09)	-0.14 (0.08) ^	-0.23 (0.13)
t	Service Sector Size	-0.40 (0.22) ^	-0.56 (0.35)	-0.32 (0.31)	-0.18 (0.29)	-0.38 (0.23)	0.30 (0.90)
t	Public Sector Size	-1.70 (0.52) **	-1.78 (0.65) *	-1.79 (0.72) *	-1.04 (0.65)	-1.68 (0.53) **	-1.29 (1.73)
t	Crude birth rate	0.50 (0.42)	1.13 (0.63) ^	0.67 (0.61)	1.03 (0.51) ^	0.53 (0.44)	2.32 (1.28)
t-5	Female share of tertiary education students	-0.40 (0.25)	-0.24 (0.28)	-0.45 (0.36)	-0.38 (0.34)	-0.36 (0.28)	-0.07 (0.58)
t	Employment protection legislation index	2.80 (1.63) ^	0.42 (2.72)	1.94 (2.11)	3.09 (1.94)	2.83 (1.66) ^	-1.20 (3.48)
t	Economic freedom index	-0.30 (1.61)	-0.19 (2.53)	-0.35 (1.95)	0.80 (2.04)	-0.26 (1.65)	1.35 (6.02)
	Joint F-test on total leave available to mothers and its square (d.f)	4.31 (2, 30) *	2.99 (2, 15) ^	1.39 (2, 22)	2.20 (2, 21)	4.22 (2, 29)	1.74 (2, 5)
	n	85	70	76	76	84	58
	r-squared (within)	0.93	0.95	0.92	0.93	0.93	0.98

Note : * = p<0.05 ** = p<0.01 *** = p<0.001. ^ = p<0.1. The joint F-test on total maternity and parental leave available to mothers and its square tests the null that the two are jointly equal to zero.

Specifications :

1-6. See model A in table 6.8

7-12. See model A in table 6.9

13-18. See model D in table 6.9

variables plus country-specific time trends and year fixed-effects, reducing the sample size to 58 observations is likely to drain the models of all statistical power, with the result few clear estimates and results that are entirely inconsistent with those from the original model. In other words, any changes in results here may be due less to the removal of the influence of any cases imputed using LVCF/NVCB and more to an insufficient number of observations.

F.7. Gender gap in labour force participation rates across levels of education (25-49 year olds)

Tables **F.9** and **F.10** show results for models of the gender gap in labour force participation rates (25-49 year olds) across men and women with low, medium and high education when any cases imputed using LVCF/NVCB are removed. In both tables, specifications **1**, **7** and **13** are the original models shown earlier in the main body, with **2-5, 8-11** and **14-17** models with any cases imputed using LVCF/NVCB on the affected variables removed individually, and **6**, **12** and **18** models with all cases imputed using LVCF/NVCB removed. It should be noted here that because of missing data on the dependent variable, the original models use no cases where missing data for both public expenditure on childcare services and tax support for the family are imputed using LVCF/NVCB. As a result, models **4, 5**, **10, 11, 16** and **17** are left blank.

Once again, removing cases imputed using LVCF/NVCB makes only very minor differences to results on the two variables that have cases imputed using LVCF/NVCB. Specification **15** in table **F.9** shows that the negative coefficient on the proportion of children aged between 3-6 in public pre-primary or primary school shifts from significance at the 10% level to significance at the 5% level once any cases imputed using LVCF/NVCB are removed. However, a similar relation was already evident in model **F** in table **7.4** (see specification **13** in table **F.10**), so this change does not radically alter broader inferences. Similarly, specification **2** in table **F.10** shows that when LVCF/NVCB cases are removed from model **D** in table **7.4**, the negative coefficient on changes in the proportion of 0-3 year olds in public or publicly funded childcare also shifts from significance at the 10% level to significance at the 5% level. Again though, a similar relation was already shown in model **A** in table **7.4** (see specification **1** in table **F.9**).

Elsewhere, removing cases imputed using LVCF/NVCB does produce a couple of changes in the estimates on variables that do not themselves suffer from missing data. In specifications **6** and **12** in table **F.9**, for example, the deletion of cases imputed using

Table F.9. Additional models of the gender gap in labour force participation rates (25-54 year olds) by level of education with any data imputed using NVCB/LVCF removed

Dependent variable: Gender gap in the labour force participation rate (25-54 year olds) by level of education

Level of education: Low — Reference model: Model **A** in table **7.4**

Lag	Variable	1 Original model	2 NVCB/LVCF cases omitted - children under 3 in public childcare	3 NVCB/LVCF cases omitted - children 3-6 in public pre-primary	4 NVCB/LVCF cases omitted - public expenditure on childcare	5 NVCB/LVCF cases omitted - tax support for families	6 All NVCB/LVCF cases removed
		B SE	B SE	B SE	B SE	B SE	B SE
	Dual earner-carer leave policy						
t-1	Mother-specific earnings-related leave	-0.12 (0.18)	-0.08 (0.25)	-0.11 (0.18)	- -	- -	-0.08 (0.25)
t	Father-specific leave	0.06 (0.06)	0.08 (0.05)	0.07 (0.05)	- -	- -	0.09 (0.05) ^
t-1	Gender-neutral earnings-related parental leave	-0.09 (0.07)	-0.11 (0.08)	-0.09 (0.07)	- -	- -	-0.11 (0.08)
	Dual earner childcare policy						
t-1	Children under 3 in public childcare	-0.16 (0.06) *	**-0.19 (0.05)** **	-0.17 (0.06) *	- -	- -	**-0.20 (0.05)** **
t-1	Children 3-6 in public pre-primary care or primary school	0.00 (0.03)	0.02 (0.04)	**0.00 (0.03)**	- -	- -	**0.02 (0.04)**
t-1	Public expenditure on childcare services	0.19 (0.29)	0.01 (0.30)	0.16 (0.29)	- -	- -	0.01 (0.33)
	General family support policy						
t	Child benefit per month for two children	-0.06 (0.12)	0.00 (0.13)	-0.10 (0.12)	- -	- -	-0.05 (0.13)
t	Tax support for families	-0.20 (0.08) *	-0.23 (0.09) *	-0.17 (0.07)	- -	- -	-0.20 (0.09) *
t-1	Flat-rate parental leave and childcare leave	-0.06 (0.03) ^	-0.08 (0.02) **	-0.06 (0.03) ^	- -	- -	-0.08 (0.02) **
	Alternative measures of leave policy						
t-1	Total maternity and parental leave available to mothers						
t-1	(Total maternity and parental leave available to mothers)^2						
t-1	Childcare leave						
t-1	Service Sector Size	-0.14 (0.15)	-0.15 (0.13)	-0.18 (0.17)	- -	- -	-0.21 (0.09) *
t-1	Public Sector Size	0.77 (0.42) ^	0.81 (0.39) ^	0.80 (0.44) ^	- -	- -	0.86 (0.38) *
t-1	Crude birth rate	0.49 (0.29)	0.53 (0.25) ^	0.42 (0.30)	- -	- -	0.47 (0.26) ^
t	Employment protection legislation index	-3.44 (0.84) ***	-1.54 (1.28)	-3.25 (0.81) **	- -	- -	-1.40 (1.24)
t	Economic freedom index						
	Joint F-test on total leave available to mothers and its square (d.f)						
	n	282	242	274	-	-	234
	r-squared (within)	0.91	0.88	0.91	-	-	0.88

Level of education: Medium — Reference model: Model **B** in table **7.4**

Lag	Variable	7 Original model	8 NVCB/LVCF cases omitted - children under 3 in public childcare	9 NVCB/LVCF cases omitted - children 3-6 in public pre-primary	10 NVCB/LVCF cases omitted - public expenditure on childcare	11 NVCB/LVCF cases omitted - tax support for families	12 All NVCB/LVCF cases removed
		B SE	B SE	B SE	B SE	B SE	B SE
	Dual earner-carer leave policy						
t-1	Mother-specific earnings-related leave	-0.08 (0.12)	-0.01 (0.17)	-0.02 (0.10)	- -	- -	0.04 (0.16)
t	Father-specific leave	0.06 (0.06)	0.05 (0.04)	0.06 (0.06)	- -	- -	0.05 (0.04)
t-1	Gender-neutral earnings-related parental leave	-0.03 (0.03)	-0.03 (0.03)	-0.02 (0.03)	- -	- -	-0.02 (0.02)
	Dual earner childcare policy						
t-1	Children under 3 in public childcare	-0.05 (0.06)	**-0.03 (0.07)**	-0.07 (0.06)	- -	- -	**-0.05 (0.08)**
t-1	Children 3-6 in public pre-primary care or primary school	-0.02 (0.02)	-0.01 (0.02)	**-0.03 (0.02)**	- -	- -	**-0.02 (0.02)**
t-1	Public expenditure on childcare services	0.01 (0.22)	-0.13 (0.25)	-0.03 (0.22)	- -	- -	-0.18 (0.25)
	General family support policy						
t	Child benefit per month for two children	-0.08 (0.08)	-0.04 (0.09)	-0.07 (0.06)	- -	- -	-0.05 (0.08)
t	Tax support for families	-0.09 (0.08)	-0.12 (0.07)	-0.05 (0.08)	- -	- -	-0.08 (0.05)
t-1	Flat-rate parental leave and childcare leave	-0.04 (0.03)	-0.06 (0.02) *	-0.06 (0.03) ^	- -	- -	-0.08 (0.02) ***
	Alternative measures of leave policy						
t-1	Total maternity and parental leave available to mothers						
t-1	(Total maternity and parental leave available to mothers)^2						
t-1	Childcare leave						
t-1	Service Sector Size	0.06 (0.14)	0.06 (0.10)	0.08 (0.17)	- -	- -	0.11 (0.10)
t-1	Public Sector Size	0.49 (0.34)	0.49 (0.30)	0.39 (0.29)	- -	- -	0.38 (0.24)
t-1	Crude birth rate	0.44 (0.39)	0.61 (0.44)	0.25 (0.37)	- -	- -	0.40 (0.45)
t	Employment protection legislation index	-3.97 (0.73) ***	-1.93 (1.03) ^	-3.62 (0.67) ***	- -	- -	-1.45 (0.82) ^
t	Economic freedom index						
	Joint F-test on total leave available to mothers and its square (d.f)						
	n	282	242	274	-	-	234
	r-squared (within)	0.90	0.88	0.91	-	-	0.89

Level of education: High — Reference model: Model **C** in table **7.4**

Lag	Variable	13 Original model	14 NVCB/LVCF cases omitted - children under 3 in public childcare	15 NVCB/LVCF cases omitted - children 3-6 in public pre-primary	16 NVCB/LVCF cases omitted - public expenditure on childcare	17 NVCB/LVCF cases omitted - tax support for families	18 All NVCB/LVCF cases removed
		B SE	B SE	B SE	B SE	B SE	B SE
	Dual earner-carer leave policy						
t-1	Mother-specific earnings-related leave	0.06 (0.04)	0.04 (0.07)	0.06 (0.05)	- -	- -	0.04 (0.07)
t	Father-specific leave	-0.14 (0.04) **	-0.16 (0.06) *	-0.13 (0.03) **	- -	- -	-0.14 (0.05) *
t-1	Gender-neutral earnings-related parental leave	0.01 (0.02)	0.02 (0.02)	0.01 (0.02)	- -	- -	0.02 (0.02)
	Dual earner childcare policy						
t-1	Children under 3 in public childcare	-0.02 (0.05)	**0.00 (0.06)**	-0.04 (0.05)	- -	- -	**-0.01 (0.06)**
t-1	Children 3-6 in public pre-primary care or primary school	-0.02 (0.01) ^	0.00 (0.01)	**-0.03 (0.01)** *	- -	- -	**0.00 (0.01)**
t-1	Public expenditure on childcare services	-0.25 (0.17)	-0.39 (0.27)	-0.27 (0.17)	- -	- -	-0.39 (0.25)
	General family support policy						
t	Child benefit per month for two children	-0.03 (0.07)	0.03 (0.07)	-0.06 (0.05)	- -	- -	-0.01 (0.05)
t	Tax support for families	-0.09 (0.06)	-0.08 (0.05)	-0.06 (0.08)	- -	- -	-0.05 (0.07)
t-1	Flat-rate parental leave and childcare leave	-0.01 (0.02)	-0.02 (0.01)	0.00 (0.02)	- -	- -	-0.01 (0.02)
	Alternative measures of leave policy						
t-1	Total maternity and parental leave available to mothers						
t-1	(Total maternity and parental leave available to mothers)^2						
t-1	Childcare leave						
t-1	Service Sector Size	-0.08 (0.09)	-0.08 (0.11)	-0.12 (0.10)	- -	- -	-0.14 (0.14)
t-1	Public Sector Size	0.22 (0.19)	0.20 (0.17)	0.27 (0.18)	- -	- -	0.26 (0.17)
t-1	Crude birth rate	0.31 (0.27)	0.34 (0.35)	0.27 (0.28)	- -	- -	0.32 (0.38)
t	Employment protection legislation index	-1.23 (0.74)	-0.28 (1.05)	-1.10 (0.79)	- -	- -	-0.33 (1.17)
t	Economic freedom index						
	Joint F-test on total leave available to mothers and its square (d.f)						
	n	282	242	274	-	-	234
	r-squared (within)	0.71	0.68	0.71	-	-	0.68

Note : * = p<0.05 ** = p<0.01 *** = p<0.001. ^ = p<0.1.

Specifications :

1-6. See model A in table 7.4

7-12. See model B in table 7.4

13-18. See model C in table 7.4

Table F.10. Additional models of the gender gap in labour force participation rates (25-54 year olds) by level of education with any data imputed using NVCB/LVCF removed

	Dependent variable:	Gender gap in the labour force participation rate (25-54 year olds) by level of education																	
	Level of education:	Low						Medium						High					
	Reference model	Model **D** in table **7.4**						Model **E** in table **7.4**						Model **F** in table **7.4**					
	Specification:	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**
	Excluded case(s)	Original model	NVCB/LVCF cases omitted - children under 3 in public childcare	NVCB/LVCF cases omitted - children 3-6 in public pre-primary	NVCB/LVCF cases omitted - public expenditure on childcare	NVCB/LVCF cases omitted - tax support for families	All NVCB/LVCF cases removed	Original model	NVCB/LVCF cases omitted - children under 3 in public childcare	NVCB/LVCF cases omitted - children 3-6 in public pre-primary	NVCB/LVCF cases omitted - public expenditure on childcare	NVCB/LVCF cases omitted - tax support for families	All NVCB/LVCF cases removed	Original model	NVCB/LVCF cases omitted - children under 3 in public childcare	NVCB/LVCF cases omitted - children 3-6 in public pre-primary	NVCB/LVCF cases omitted - public expenditure on childcare	NVCB/LVCF cases omitted - tax support for families	All NVCB/LVCF cases removed
Lag	Variable	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE
	Dual earner-carer leave policy																		
t-1	Mother-specific earnings-related leave																		
t	Father-specific leave	0.09 (0.07)	0.11 (0.06) ^	0.10 (0.07)	- -	- -	0.11 (0.06) ^	0.06 (0.06)	0.05 (0.04)	0.03 (0.05)	- -	- -	0.02 (0.04)	-0.16 (0.05) **	-0.16 (0.08)	-0.15 (0.04) **	- -	- -	-0.16 (0.06) *
t-1	Gender-neutral earnings-related parental leave																		
	Dual earner childcare policy																		
t-1	Children under 3 in public childcare	-0.15 (0.08) ^	**-0.18 (0.07)** *	-0.16 (0.08) ^	- -	- -	**-0.20 (0.07)** *	-0.07 (0.06)	**-0.05 (0.07)**	-0.13 (0.07) ^	- -	- -	**-0.13 (0.09)**	-0.04 (0.04)	**-0.01 (0.04)**	-0.07 (0.03) ^	- -	- -	**-0.04 (0.04)**
t-1	Children 3-6 in public pre-primary care or primary school	0.00 (0.04)	0.02 (0.04)	**0.00 (0.04)**	- -	- -	**0.02 (0.04)**	-0.02 (0.02)	-0.01 (0.02)	**-0.03 (0.02)**	- -	- -	**-0.03 (0.02)**	-0.03 (0.01) *	0.00 (0.01)	**-0.03 (0.01)** **	- -	- -	**-0.01 (0.01)**
t-1	Public expenditure on childcare services	0.21 (0.31)	0.05 (0.39)	0.17 (0.31)	- -	- -	0.02 (0.40)	-0.01 (0.21)	-0.13 (0.25)	-0.07 (0.20)	- -	- -	-0.24 (0.20)	-0.26 (0.19)	-0.41 (0.30)	-0.30 (0.19)	- -	- -	-0.42 (0.30)
	General family support policy																		
t	Child benefit per month for two children	-0.08 (0.12)	-0.03 (0.15)	-0.12 (0.12)	- -	- -	-0.08 (0.16)	-0.11 (0.09)	-0.08 (0.10)	-0.12 (0.08)	- -	- -	-0.11 (0.10)	-0.04 (0.07)	0.02 (0.07)	-0.08 (0.05)	- -	- -	-0.03 (0.05)
t	Tax support for families	-0.16 (0.09) ^	-0.19 (0.10) ^	-0.14 (0.09)	- -	- -	-0.17 (0.10)	-0.09 (0.09)	-0.13 (0.08)	-0.06 (0.08)	- -	- -	-0.10 (0.06)	-0.11 (0.06)	-0.11 (0.06)	-0.06 (0.08)	- -	- -	-0.07 (0.07)
t-1	Flat-rate parental leave and childcare leave																		
	Alternative measures of leave policy																		
t-1	Total maternity and parental leave available to mothers	-0.33 (0.25)	-0.31 (0.26)	-0.32 (0.25)	- -	- -	-0.27 (0.26)	-0.12 (0.14)	-0.08 (0.11)	-0.01 (0.13)	- -	- -	0.01 (0.13)	0.04 (0.07)	0.06 (0.07)	0.06 (0.07)	- -	- -	0.08 (0.09)
t-1	(Total maternity and parental leave available to mothers)^2	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	- -	- -	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	- -	- -	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	- -	- -	0.00 (0.00)
t-1	Childcare leave	-0.03 (0.03)	-0.04 (0.03)	-0.04 (0.03)	- -	- -	-0.05 (0.04)	-0.06 (0.03) ^	-0.06 (0.03)	-0.12 (0.05)	- -	- -	-0.13 (0.05) *	-0.03 (0.03)	-0.03 (0.04)	-0.04 (0.04)	- -	- -	-0.04 (0.04)
t-1	Service Sector Size	-0.12 (0.16)	-0.12 (0.14)	-0.16 (0.17)	- -	- -	-0.17 (0.09) ^	0.06 (0.14)	0.07 (0.11)	0.06 (0.18)	- -	- -	0.11 (0.12)	-0.09 (0.09)	-0.09 (0.12)	-0.14 (0.10)	- -	- -	-0.15 (0.14)
t-1	Public Sector Size	0.68 (0.37) ^	0.69 (0.37) ^	0.73 (0.39)	- -	- -	0.76 (0.36) ^	0.47 (0.36)	0.47 (0.32)	0.39 (0.30)	- -	- -	0.38 (0.26)	0.24 (0.18)	0.23 (0.16)	0.28 (0.17)	- -	- -	0.29 (0.17) ^
t-1	Crude birth rate	0.48 (0.31)	0.53 (0.32)	0.44 (0.31)	- -	- -	0.50 (0.32)	0.46 (0.40)	0.64 (0.46)	0.30 (0.37)	- -	- -	0.46 (0.44)	0.35 (0.28)	0.37 (0.39)	0.31 (0.28)	- -	- -	0.34 (0.39)
t	Employment protection legislation index	-3.96 (0.81) ***	-2.04 (1.09) ^	-3.80 (0.84) ***	- -	- -	-1.85 (1.14)	-3.97 (0.75) ***	-2.09 (0.81)	-3.36 (0.74)	- -	- -	-1.39 (0.72) ^	-1.28 (0.59) *	-0.28 (0.93)	-0.98 (0.63)	- -	- -	-0.17 (0.95)
t	Economic freedom index																		
	Joint F-test on total leave available to mothers and its square (d.f)	2.81 (2, 15) ^	3.03 (2, 15) ^	2.27 (2, 15)	-	-	2.34 (2, 15)	0.82 (2, 15)	1.34 (2, 15)	0.01 (2, 15)	-	-	0.04 (2, 15)	0.61 (2, 15)	0.32 (2, 15)	1.02 (2, 15)	-	-	0.64 (2, 15)
	n	282	242	274	-	-	234	282	242	274	-	-	234	282	242	274	-	-	234
	r-squared (within)	0.91	0.88	0.91	-	-	0.88	0.90	0.88	0.91	-	-	0.89	0.72	0.68	0.72	-	-	0.69

Note : * = p<0.05 ** = p<0.01 *** = p<0.001. ^ = p<0.1. The joint F-test on total maternity and parental leave available to mothers and its square tests the null that the two are jointly equal to zero.

Specifications :

1-6. See model D in table 7.4

7-12. See model E in table 7.4

13-18. See model F in table 7.4

LVCF/NVCB leads to the negative coefficients on flat-rate parental and childcare leave becoming highly statistically significant, while specification **12** in table **F.10** shows something similar for changes in weeks of childcare leave. The latter association in particular is curious since these extended childcare leaves are – theoretically speaking – particularly unlikely to promote female labour participation. In all cases however the shifts into significance can again be explained by the loss of the observation for Denmark 1992, which forms an important case as it precedes reductions in the Danish childcare leave and coinciding increases in the gender gaps in participation at low and medium levels of education over the mid-1990s.

F.8. Gender gap in labour force participation rates across levels of education (25-29 year olds)

Tables **F.11** and **F.12** show results for models of the gender gap in labour force participation rates (25-29 year olds) across men and women with low, medium and high education when any cases imputed using LVCF/NVCB are removed. In both tables, specifications **1**, **7** and **13** are the original models shown earlier in the main body, with **2-5, 8-11** and **14-17** models with any cases imputed using LVCF/NVCB on the affected variables removed individually, and **6**, **12** and **18** models with all cases imputed using LVCF/NVCB removed. Again, it should be noted here that because of missing data on the dependent variable, the original models use no cases where missing data for both public expenditure on childcare services and tax support for the family are imputed using LVCF/NVCB. As a result, models **4, 5**, **10, 11, 16** and **17** are left blank.

Once more, removing any cases imputed using LVCF/NVCB makes almost no difference to results on the two variables with cases imputed using LVCF/NVCB. The only exception is in specification **2** in table **F.12**, where removing any cases that use LVCF/NVCB to impute data on the proportion of children under three in public childcare leads to the coefficient on the proportion of children under three moving out of significance completely. The same variable does though remain significant in specification **2** in table **F.11,** while the estimated coefficients across models in table **F.12** continue to suggest that any beneficial effects of public childcare for very young children are likely to be most substantial for less educated women.

Elsewhere, removing LVCF/NVCB cases does again impact on estimates for those variables that *do not* suffer missing data. Specification **18** in table **F.12**, for example, shows that removing all LVCF/NVCB cases from model **F** in table **7.5** shifts to the negative coefficient

Table F.11. Additional models of the gender gap in labour force participation rates (25-29 year olds) by level of education with any data imputed using NVCB/LVCF removed

	Dependent variable:	Gender gap in the labour force participation rate (25-29 year olds) by level of education																	
	Level of education:	Low						Medium						High					
	Reference model	Model **A** in table **7.5**						Model **B** in table **7.5**						Model **C** in table **7.5**					
	Specification:	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**
	Excluded case(s)	Original model	NVCB/LVCF cases omitted - children under 3 in public childcare	NVCB/LVCF cases omitted - children 3-6 in public pre-primary	NVCB/LVCF cases omitted - public expenditure on childcare	NVCB/LVCF cases omitted - tax support for families	All NVCB/LVCF cases removed	Original model	NVCB/LVCF cases omitted - children under 3 in public childcare	NVCB/LVCF cases omitted - children 3-6 in public pre-primary	NVCB/LVCF cases omitted - public expenditure on childcare	NVCB/LVCF cases omitted - tax support for families	All NVCB/LVCF cases removed	Original model	NVCB/LVCF cases omitted - children under 3 in public childcare	NVCB/LVCF cases omitted - children 3-6 in public pre-primary	NVCB/LVCF cases omitted - public expenditure on childcare	NVCB/LVCF cases omitted - tax support for families	All NVCB/LVCF cases removed
Lag	Variable	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE
	Dual earner-carer leave policy																		
t-1	Mother-specific earnings-related leave	-0.97 (0.32) **	-0.91 (0.36) *	-0.81 (0.24) **	- -	- -	-0.76 (0.37) ^	-0.21 (0.21)	-0.23 (0.18)	-0.17 (0.17)	- -	- -	-0.21 (0.17)	0.09 (0.12)	0.22 (0.19)	0.06 (0.12)	- -	- -	0.17 (0.18)
t	Father-specific leave	0.22 (0.17)	0.21 (0.20)	0.23 (0.18)	- -	- -	0.22 (0.21)	0.04 (0.07)	0.06 (0.06)	0.05 (0.07)	- -	- -	0.08 (0.07)	-0.51 (0.21) *	-0.61 (0.21) *	-0.49 (0.20) *	- -	- -	-0.58 (0.20) *
t-1	Gender-neutral earnings-related parental leave	-0.18 (0.14)	-0.15 (0.13)	-0.16 (0.11)	- -	- -	-0.12 (0.09)	-0.04 (0.06)	-0.07 (0.05)	-0.03 (0.05)	- -	- -	-0.05 (0.03)	0.04 (0.07)	0.07 (0.07)	0.03 (0.07)	- -	- -	0.06 (0.07)
	Dual earner childcare policy																		
t-1	Children under 3 in public childcare	-0.54 (0.19) *	**-0.52 (0.23)** *	-0.61 (0.18) **	- -	- -	**-0.60 (0.22)** *	-0.04 (0.09)	**-0.04 (0.08)**	-0.08 (0.08)	- -	- -	**-0.07 (0.08)**	0.14 (0.13)	**0.23 (0.16)**	0.14 (0.14)	- -	- -	**0.23 (0.17)**
t-1	Children 3-6 in public pre-primary care or primary school	0.08 (0.07)	0.06 (0.10)	**0.05 (0.06)**	- -	- -	**0.03 (0.08)**	-0.03 (0.04)	0.01 (0.04)	**-0.03 (0.04)**	- -	- -	**0.01 (0.04)**	-0.01 (0.02)	0.01 (0.04)	**-0.01 (0.02)**	- -	- -	**0.01 (0.04)**
t-1	Public expenditure on childcare services	2.32 (0.69) **	2.51 (0.89) *	2.23 (0.75) **	- -	- -	2.42 (0.98) *	-0.79 (0.41) ^	-1.30 (0.47) *	-0.80 (0.42) ^	- -	- -	-1.29 (0.48) *	-0.69 (0.41)	-0.84 (0.56)	-0.76 (0.38) ^	- -	- -	-0.90 (0.52)
	General family support policy																		
t	Child benefit per month for two children	-0.09 (0.26)	-0.01 (0.31)	-0.12 (0.25)	- -	- -	-0.08 (0.30)	-0.07 (0.11)	0.09 (0.09)	-0.09 (0.10)	- -	- -	0.05 (0.08)	0.03 (0.13)	0.08 (0.13)	-0.03 (0.11)	- -	- -	0.02 (0.12)
t	Tax support for families	-0.55 (0.41)	-0.66 (0.43)	-0.41 (0.44)	- -	- -	-0.50 (0.47)	-0.01 (0.06)	-0.02 (0.06)	0.03 (0.06)	- -	- -	-0.01 (0.07)	0.15 (0.18)	0.19 (0.17)	0.17 (0.19)	- -	- -	0.16 (0.16)
t-1	Flat-rate parental leave and childcare leave	0.06 (0.08)	0.05 (0.08)	0.00 (0.10)	- -	- -	0.00 (0.11)	-0.05 (0.08)	-0.10 (0.07)	-0.07 (0.08)	- -	- -	-0.12 (0.07) ^	0.06 (0.06)	0.07 (0.06)	0.07 (0.06)	- -	- -	0.08 (0.06)
	Alternative measures of leave policy																		
t-1	Total maternity and parental leave available to mothers																		
t-1	(Total maternity and parental leave available to mothers)^2																		
t-1	Childcare leave																		
t-1	Service Sector Size	0.10 (0.28)	0.00 (0.39)	0.10 (0.27)	- -	- -	0.01 (0.31)	-0.14 (0.19)	-0.24 (0.22)	-0.20 (0.20)	- -	- -	-0.34 (0.21)	-0.34 (0.17) ^	-0.36 (0.22)	-0.43 (0.17) *	- -	- -	-0.48 (0.23) ^
t-1	Public Sector Size	1.54 (1.55)	1.64 (1.59)	1.27 (1.42)	- -	- -	1.39 (1.51)	1.06 (0.52)	1.20 (0.48) *	1.04 (0.42) *	- -	- -	1.22 (0.38) *	0.26 (0.23)	0.25 (0.27)	0.38 (0.23)	- -	- -	0.42 (0.22) ^
t-1	Crude birth rate	2.47 (0.75) **	2.78 (0.96) *	1.97 (0.60) **	- -	- -	2.25 (0.81) *	0.27 (0.36)	0.13 (0.34)	0.05 (0.30)	- -	- -	-0.07 (0.30)	-0.40 (0.38)	-0.31 (0.42)	-0.43 (0.40)	- -	- -	-0.32 (0.46)
t	Employment protection legislation index	-4.25 (1.44) *	-5.95 (2.32) *	-2.88 (1.12) *	- -	- -	-4.45 (1.81) *	-2.51 (1.12) *	-2.25 (1.29)	-2.03 (1.16) ^	- -	- -	-1.94 (1.40)	0.70 (0.88)	1.29 (1.44)	0.56 (0.90)	- -	- -	0.88 (1.58)
t	Economic freedom index																		
	Joint F-test on total leave available to mothers and its square (d.f)																		
	n	282	242	274	-	-	234	282	242	274	-	-	234	282	242	274	-	-	234
	r-squared (within)	0.54	0.50	0.54	-	-	0.51	0.63	0.54	0.64	-	-	0.55	0.41	0.41	0.43	-	-	0.44

Note : * = p<0.05 ** = p<0.01 *** = p<0.001. ^ = p<0.1.

Specifications :

1-6. See model A in table 7.5

7-12. See model B in table 7.5

13-18. See model C in table 7.5

Table F.12. Additional models of the gender gap in labour force participation rates (25-29 year olds) by level of education with any data imputed using NVCB/LVCF removed

	Dependent variable:	Gender gap in the labour force participation rate (25-29 year olds) by level of education																	
	Level of education:	Low						Medium						High					
	Reference model	Model **D** in table **7.5**						Model **E** in table **7.5**						Model **F** in table **7.5**					
	Specification:	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**
	Excluded case(s)	Original model	NVCB/LVCF cases omitted - children under 3 in public childcare	NVCB/LVCF cases omitted - children 3-6 in public pre-primary	NVCB/LVCF cases omitted - public expenditure on childcare	NVCB/LVCF cases omitted - tax support for families	All NVCB/LVCF cases removed	Original model	NVCB/LVCF cases omitted - children under 3 in public childcare	NVCB/LVCF cases omitted - children 3-6 in public pre-primary	NVCB/LVCF cases omitted - public expenditure on childcare	NVCB/LVCF cases omitted - tax support for families	All NVCB/LVCF cases removed	Original model	NVCB/LVCF cases omitted - children under 3 in public childcare	NVCB/LVCF cases omitted - children 3-6 in public pre-primary	NVCB/LVCF cases omitted - public expenditure on childcare	NVCB/LVCF cases omitted - tax support for families	All NVCB/LVCF cases removed
Lag	Variable	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE
	Dual earner-carer leave policy																		
t-1	Mother-specific earnings-related leave																		
t	Father-specific leave	0.41 (0.19) ^	0.31 (0.20)	0.34 (0.19) ^	- -	- -	0.26 (0.21)	0.10 (0.08)	0.11 (0.06) ^	0.08 (0.08)	- -	- -	0.10 (0.08)	-0.51 (0.24) ^	-0.60 (0.26) *	-0.49 (0.24) ^	- -	- -	-0.59 (0.25) *
t-1	Gender-neutral earnings-related parental leave																		
	Dual earner childcare policy																		
t-1	Children under 3 in public childcare	-0.45 (0.19) *	**-0.33 (0.22)**	-0.55 (0.19) *	- -	- -	**-0.47 (0.24)** ^	-0.04 (0.10)	**-0.01 (0.09)**	-0.11 (0.11)	- -	- -	**-0.07 (0.11)**	0.16 (0.13)	**0.24 (0.15)**	0.15 (0.14)	- -	- -	**0.26 (0.17)**
t-1	Children 3-6 in public pre-primary care or primary school	0.09 (0.09)	0.07 (0.12)	**0.07 (0.07)**	- -	- -	**0.04 (0.10)**	-0.02 (0.05)	0.02 (0.05)	**-0.03 (0.04)**	- -	- -	**0.01 (0.04)**	-0.01 (0.02)	0.01 (0.04)	**-0.01 (0.02)**	- -	- -	**0.02 (0.04)**
t-1	Public expenditure on childcare services	2.37 (0.79) **	2.81 (1.01) *	2.20 (0.83) *	- -	- -	2.57 (1.10) *	-0.73 (0.41)	-1.17 (0.48) *	-0.78 (0.39) ^	- -	- -	-1.21 (0.45) *	-0.69 (0.42)	-0.84 (0.58)	-0.78 (0.39) ^	- -	- -	-0.90 (0.51) ^
	General family support policy																		
t	Child benefit per month for two children	-0.06 (0.24)	0.03 (0.33)	-0.12 (0.25)	- -	- -	-0.07 (0.31)	-0.13 (0.14)	0.05 (0.11)	-0.17 (0.14)	- -	- -	0.00 (0.10)	0.06 (0.13)	0.13 (0.14)	0.00 (0.11)	- -	- -	0.08 (0.13)
t	Tax support for families	-0.37 (0.41)	-0.49 (0.40)	-0.33 (0.44)	- -	- -	-0.44 (0.45)	0.01 (0.08)	-0.02 (0.07)	0.02 (0.07)	- -	- -	-0.03 (0.07)	0.16 (0.17)	0.18 (0.16)	0.19 (0.19)	- -	- -	0.15 (0.15)
t-1	Flat-rate parental leave and childcare leave																		
	Alternative measures of leave policy																		
t-1	Total maternity and parental leave available to mothers	-0.89 (0.39) *	-0.68 (0.34) ^	-0.65 (0.35) ^	- -	- -	-0.47 (0.35)	-0.43 (0.20)	-0.34 (0.20)	-0.32 (0.21)	- -	- -	-0.20 (0.20)	0.13 (0.27)	0.21 (0.33)	0.10 (0.29)	- -	- -	0.22 (0.34)
t-1	(Total maternity and parental leave available to mothers)^2	0.01 (0.00) ^	0.01 (0.01)	0.01 (0.00)	- -	- -	0.00 (0.01)	0.01 (0.00)	0.00 (0.00)	0.00 (0.00)	- -	- -	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	- -	- -	0.00 (0.00)
t-1	Childcare leave	0.21 (0.12)	0.25 (0.13) ^	0.08 (0.17)	- -	- -	0.12 (0.19)	-0.01 (0.03)	-0.01 (0.04)	-0.07 (0.06)	- -	- -	-0.06 (0.07)	0.06 (0.06)	0.07 (0.06)	0.06 (0.07)	- -	- -	0.08 (0.07)
t-1	Service Sector Size	0.23 (0.25)	0.08 (0.35)	0.22 (0.26)	- -	- -	0.08 (0.31)	-0.12 (0.19)	-0.21 (0.23)	-0.19 (0.21)	- -	- -	-0.33 (0.23)	-0.34 (0.18) ^	-0.38 (0.24)	-0.42 (0.18) *	- -	- -	-0.51 (0.26) ^
t-1	Public Sector Size	1.19 (1.52)	1.33 (1.60)	1.04 (1.48)	- -	- -	1.24 (1.64)	0.91 (0.46)	1.06 (0.48) *	0.95 (0.40) *	- -	- -	1.17 (0.42) *	0.28 (0.22)	0.30 (0.28)	0.40 (0.22) ^	- -	- -	0.50 (0.26) ^
t-1	Crude birth rate	2.04 (0.62) **	2.49 (0.81) **	1.74 (0.55) **	- -	- -	2.18 (0.75) *	0.23 (0.40)	0.06 (0.38)	0.07 (0.36)	- -	- -	-0.08 (0.36)	-0.42 (0.38)	-0.36 (0.41)	-0.45 (0.41)	- -	- -	-0.35 (0.46)
t	Employment protection legislation index	-3.95 (2.04) ^	-4.94 (1.75) *	-2.57 (1.97)	- -	- -	-3.47 (1.69) ^	-3.09 (1.03)	-2.48 (1.02) ^	-2.39 (1.06) *	- -	- -	-1.91 (1.21)	0.75 (1.10)	1.06 (1.36)	0.66 (1.28)	- -	- -	0.85 (1.59)
t	Economic freedom index																		
	Joint F-test on total leave available to mothers and its square (d.f)	2.88 (2, 15) ^	3.59 (2, 15) ^	2.14 (2, 15)	-	-	2.24 (2, 15) ^	3.34 (2, 15) ^	4.01 (2, 15) *	1.35 (2, 15)	-	-	1.86 (2, 15)	0.12 (2, 15)	0.31 (2, 15)	0.17 (2, 15)	-	-	0.33 (2, 15)
	n	282	242	274	-	-	234	282	242	274	-	-	234	282	242	274	-	-	234
	r-squared (within)	0.54	0.51	0.54	-	-	0.51	0.64	0.55	0.64	-	-	0.55	0.41	0.41	0.43	-	-	0.44

Note : * = p<0.05 ** = p<0.01 *** = p<0.001. ^ = p<0.1. The joint F-test on total maternity and parental leave available to mothers and its square tests the null that the two are jointly equal to zero.

Specifications :

1-6. See model D in table 7.5

7-12. See model E in table 7.5

13-18. See model F in table 7.5

on father-specific from significance at the 10% level to significance at the 5% level, although again this relation was already significant in model **C** in table **7.5** (see specification **13** in table **F.11**). More importantly perhaps, removing cases imputed using LVCF/NVCB from model **A** in table **7.5** leads to the negative association between changes in mother-specific earnings-related leave and the gender gap for men and women with low education moving out of significance at the 5% level, although it remains significant at the 10% level (specification **6** in table **F.11**).

The latter result would, if valid, weaken evidence in favour of the suggestion that these dual earner-type leaves are particularly effective at promoting equal participation among less educated men and women. It can again though be explained mostly by the loss of Denmark 1992, which means that the model loses an important observation that precedes a decrease in the effective length of mother-specific earnings-related leave and an increase the gender gap in labour force participation for 25-29 year olds with low education. Moreover, estimated coefficients on mother-specific earnings-related leave continue to decline and turn positive as education increases (see specification **6, 12** and **18** in table **F.11**)**,** which implies that any beneficial effects of mother-specific earnings-related leave remain likely strongest for less education women. As a result, this change does not lead to a major revision in broad inferences regarding the effects of changes in leave on gender differences in participation across levels of education.

F.9. Gender gap in labour force participation rates across levels of education (30-34 year olds)

Tables **F.13** and **F.14** show results for models of the gender gap in labour force participation rates (30-34 year olds) across men and women with low, medium and high education when any cases imputed using LVCF/NVCB are removed. In both tables, specifications **1**, **7** and **13** are the original models shown earlier in the main body, with **2-5, 8-11** and **14-17** models with any cases imputed using LVCF/NVCB on the affected variables removed individually, and **6**, **12** and **18** models with all cases imputed using LVCF/NVCB removed. Once more, it should be noted here that because of missing data on the dependent variable, the original models use no cases where missing data for both public expenditure on childcare services and tax support for the family are imputed using LVCF/NVCB. As a result, models **4, 5**, **10, 11, 16** and **17** are left blank.

Removing cases imputed using LVCF/NVCB from models of the gender gap for 30-34 year olds across levels of education makes absolutely no difference to results on the two

Table F.13. Additional models of the gender gap in labour force participation rates (30-34 year olds) by level of education with any data imputed using NVCB/LVCF removed

	Dependent variable:	Gender gap in the labour force participation rate (30-34 year olds) by level of education																					
	Level of education:	Low						Medium								High							
	Reference model	Model **A** in table **7.6**						Model **B** in table **7.6**								Model **C** in table **7.6**							
	Specification:	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**			**13**	**14**	**15**	**16**	**17**	**18**		
	Excluded case(s):	Original model	NVCB/LVCF cases omitted - children under 3 in public childcare	NVCB/LVCF cases omitted - children 3-6 in public pre-primary	NVCB/LVCF cases omitted - public expenditure on childcare	NVCB/LVCF cases omitted - tax support for families	All NVCB/LVCF cases removed	Original model	NVCB/LVCF cases omitted - children under 3 in public childcare	NVCB/LVCF cases omitted - children 3-6 in public pre-primary	NVCB/LVCF cases omitted - public expenditure on childcare	NVCB/LVCF cases omitted - tax support for families	All NVCB/LVCF cases removed			Original model	NVCB/LVCF cases omitted - children under 3 in public childcare	NVCB/LVCF cases omitted - children 3-6 in public pre-primary	NVCB/LVCF cases omitted - public expenditure on childcare	NVCB/LVCF cases omitted - tax support for families	All NVCB/LVCF cases removed		
Lag	Variable	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE			B SE	B SE	B SE	B SE	B SE	B SE		
	Dual earner-carer leave policy																						
t-1	Mother-specific earnings-related leave	-0.15 (0.25)	-0.24 (0.38)	-0.19 (0.28)	- -	- -	-0.30 (0.40)	0.09 (0.18)	0.33 (0.25)	0.16 (0.16)	- -	- -	0.40 (0.26)			0.07 (0.10)	0.20 (0.21)	0.07 (0.08)	- -	- -	0.19 (0.17)		
t	Father-specific leave	0.00 (0.07)	0.02 (0.06)	0.02 (0.07)	- -	- -	0.04 (0.06)	0.02 (0.07)	-0.02 (0.07)	0.03 (0.06)	- -	- -	-0.02 (0.07)			0.01 (0.07)	-0.03 (0.11)	0.02 (0.07)	- -	- -	-0.01 (0.11)		
t-1	Gender-neutral earnings-related parental leave	-0.18 (0.06) *	-0.20 (0.05) **	-0.18 (0.07) *	- -	- -	-0.20 (0.05) **	-0.01 (0.04)	-0.02 (0.04)	-0.01 (0.04)	- -	- -	-0.02 (0.04)			-0.01 (0.03)	0.01 (0.04)	-0.01 (0.03)	- -	- -	0.02 (0.04)		
	Dual earner childcare policy																						
t-1	Children under 3 in public childcare	-0.28 (0.14) ^	**-0.31 (0.15)** ^	-0.26 (0.14) ^	- -	- -	**-0.28 (0.16)** ^	-0.05 (0.08)	**-0.02 (0.10)**	-0.10 (0.09)	- -	- -	**-0.06 (0.11)**			-0.17 (0.15)	**-0.12 (0.18)**	-0.19 (0.16)	- -	- -	**-0.12 (0.20)**		
t-1	Children 3-6 in public pre-primary care or primary school	-0.02 (0.02)	0.01 (0.06)	**-0.02 (0.02)**	- -	- -	**0.02 (0.06)**	0.03 (0.04)	0.03 (0.06)	**0.02 (0.03)**	- -	- -	**0.01 (0.06)**			-0.01 (0.03)	-0.01 (0.05)	**-0.01 (0.03)**	- -	- -	**-0.01 (0.04)**		
t-1	Public expenditure on childcare services	-0.29 (0.66)	-0.73 (0.85)	-0.30 (0.65)	- -	- -	-0.70 (0.87)	-0.09 (0.38)	-0.12 (0.51)	-0.14 (0.40)	- -	- -	-0.20 (0.54)			0.44 (0.28)	0.49 (0.43)	0.41 (0.30)	- -	- -	0.48 (0.45)		
	General family support policy																						
t	Child benefit per month for two chlldren	-0.28 (0.17)	-0.18 (0.22)	-0.32 (0.18) ^	- -	- -	-0.23 (0.23)	-0.29 (0.11) *	-0.23 (0.16)	-0.31 (0.10) **	- -	- -	-0.26 (0.15)			-0.14 (0.08) ^	-0.18 (0.11)	-0.19 (0.07) *	- -	- -	-0.25 (0.09) *		
t	Tax support for families	-0.12 (0.22)	-0.20 (0.21)	-0.16 (0.24)	- -	- -	-0.27 (0.23)	-0.04 (0.12)	-0.09 (0.12)	0.04 (0.12)	- -	- -	0.00 (0.12)			-0.23 (0.15)	-0.27 (0.16)	-0.20 (0.17)	- -	- -	-0.26 (0.18)		
t-1	Flat-rate parental leave and childcare leave	-0.07 (0.05)	-0.09 (0.05) ^	-0.05 (0.05)	- -	- -	-0.07 (0.05)	-0.06 (0.05)	-0.08 (0.04) ^	-0.08 (0.05) ^	- -	- -	-0.10 (0.04) *			0.00 (0.03)	0.01 (0.03)	-0.01 (0.04)	- -	- -	0.01 (0.04)		
	Alternative measures of leave policy																						
t-1	Total maternity and parental leave available to mothers																						
t-1	(Total maternity and parental leave available to mothers)^2																						
t-1	Childcare leave																						
t-1	Service Sector Size	-0.53 (0.23) *	-0.46 (0.25) ^	-0.60 (0.27) *	- -	- -	-0.59 (0.30) ^	0.02 (0.11)	-0.04 (0.13)	0.02 (0.14)	- -	- -	0.03 (0.08)			-0.13 (0.15)	-0.14 (0.20)	-0.20 (0.14)	- -	- -	-0.25 (0.16)		
t-1	Public Sector Size	0.94 (0.40) *	0.92 (0.56)	1.09 (0.45) *	- -	- -	1.13 (0.57) ^	1.00 (0.48) ^	1.24 (0.39) **	0.90 (0.38) *	- -	- -	1.09 (0.30) **			0.53 (0.26) ^	0.56 (0.26) *	0.59 (0.24) *	- -	- -	0.66 (0.27) *		
t-1	Crude birth rate	0.21 (0.59)	0.26 (0.66)	0.29 (0.64)	- -	- -	0.39 (0.72)	-0.08 (0.50)	0.18 (0.47)	-0.35 (0.49)	- -	- -	-0.13 (0.51)			0.48 (0.27) ^	0.68 (0.32) *	0.38 (0.27)	- -	- -	0.60 (0.36)		
t	Employment protection legislation index	-3.95 (1.43) *	-1.31 (2.37)	-4.16 (1.41) *	- -	- -	-1.77 (2.46)	-3.93 (1.12) **	-2.29 (1.41)	-3.36 (1.07) **	- -	- -	-1.60 (1.38)			-1.80 (0.38) ***	-0.01 (0.82)	-1.53 (0.51) **	- -	- -	0.05 (0.84)		
t	Economic freedom index																						
	Joint F-test on total leave available to mothers and its square (d.f)																						
	n	282	242	274	-	-	234	282	242	274	-	-	234			282	242	274	-	-	234		
	r-squared (within)	0.63	0.57	0.62	-	-	0.56	0.75	0.70	0.76	-	-	0.71			0.68	0.68	0.68	-	-	0.69		

Note : * = p<0.05 ** = p<0.01 *** = p<0.001. ^ = p<0.1.

Specifications :

1-6. See model A in table 7.6

7-12. See model B in table 7.6

13-18. See model C in table 7.6

Table F.14. Additional models of the gender gap in labour force participation rates (30-34 year olds) by level of education with any data imputed using NVCB/LVCF removed

	Dependent variable:	Gender gap in the labour force participation rate (30-34 year olds) by level of education																	
	Level of education:	Low						Medium						High					
	Reference model	Model **D** in table **7.6**						Model **E** in table **7.6**						Model **F** in table **7.6**					
	Specification:	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**
	Excluded case(s)	Original model	NVCB/LVCF cases omitted - children under 3 in public childcare	NVCB/LVCF cases omitted - children 3-6 in public pre-primary	NVCB/LVCF cases omitted - public expenditure on childcare	NVCB/LVCF cases omitted - tax support for families	All NVCB/LVCF cases removed	Original model	NVCB/LVCF cases omitted - children under 3 in public childcare	NVCB/LVCF cases omitted - children 3-6 in public pre-primary	NVCB/LVCF cases omitted - public expenditure on childcare	NVCB/LVCF cases omitted - tax support for families	All NVCB/LVCF cases removed	Original model	NVCB/LVCF cases omitted - children under 3 in public childcare	NVCB/LVCF cases omitted - children 3-6 in public pre-primary	NVCB/LVCF cases omitted - public expenditure on childcare	NVCB/LVCF cases omitted - tax support for families	All NVCB/LVCF cases removed
Lag	Variable	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE
	Dual earner-carer leave policy																		
t-1	Mother-specific earnings-related leave																		
t	Father-specific leave	0.00 (0.08)	0.00 (0.07)	0.04 (0.09)	- -	- -	0.02 (0.08)	0.01 (0.07)	-0.01 (0.07)	-0.03 (0.07)	- -	- -	-0.04 (0.06)	-0.02 (0.07)	-0.05 (0.09)	-0.02 (0.06)	- -	- -	-0.06 (0.08)
t-1	Gender-neutral earnings-related parental leave																		
	Dual earner childcare policy																		
t-1	Children under 3 in public childcare	-0.24 (0.17)	**-0.27 (0.18)**	-0.19 (0.18)	- -	- -	**-0.20 (0.21)**	-0.07 (0.09)	**-0.04 (0.10)**	-0.17 (0.09) ^	- -	- -	**-0.15 (0.11)**	-0.18 (0.16)	**-0.14 (0.18)**	-0.23 (0.18)	- -	- -	**-0.17 (0.22)**
t-1	Children 3-6 in public pre-primary care or primary school	-0.03 (0.02)	0.01 (0.07)	**-0.02 (0.02)**	- -	- -	**0.02 (0.07)**	0.03 (0.04)	0.03 (0.07)	**0.02 (0.03)**	- -	- -	**0.00 (0.05)**	-0.01 (0.03)	-0.01 (0.04)	**-0.01 (0.02)**	- -	- -	**-0.01 (0.03)**
t-1	Public expenditure on childcare services	-0.33 (0.65)	-0.78 (0.85)	-0.32 (0.65)	- -	- -	-0.72 (0.86)	-0.07 (0.36)	-0.13 (0.50)	-0.17 (0.32)	- -	- -	-0.29 (0.42)	0.41 (0.28)	0.43 (0.41)	0.35 (0.29)	- -	- -	0.38 (0.43)
	General family support policy																		
t	Child benefit per month for two children	-0.20 (0.19)	-0.10 (0.29)	-0.23 (0.20)	- -	- -	-0.11 (0.31)	-0.32 (0.11) *	-0.22 (0.17)	-0.36 (0.10) **	- -	- -	-0.28 (0.15) ^	-0.13 (0.08)	-0.16 (0.11)	-0.19 (0.07) *	- -	- -	-0.22 (0.10) *
t	Tax support for families	-0.06 (0.21)	-0.15 (0.21)	-0.11 (0.23)	- -	- -	-0.24 (0.24)	-0.07 (0.12)	-0.12 (0.12)	0.01 (0.12)	- -	- -	-0.04 (0.11)	-0.23 (0.15)	-0.28 (0.17)	-0.20 (0.17)	- -	- -	-0.28 (0.20)
t-1	Flat-rate parental leave and childcare leave																		
	Alternative measures of leave policy																		
t-1	Total maternity and parental leave available to mothers	-0.05 (0.35)	0.00 (0.41)	-0.10 (0.35)	- -	- -	0.01 (0.40)	-0.04 (0.16)	0.04 (0.18)	0.11 (0.17)	- -	- -	0.17 (0.19)	0.09 (0.14)	0.18 (0.18)	0.18 (0.17)	- -	- -	0.29 (0.21)
t-1	(Total maternity and parental leave available to mothers)^2	0.00 (0.00)	0.00 (0.01)	0.00 (0.00)	- -	- -	0.00 (0.01)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	- -	- -	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	- -	- -	0.00 (0.00)
t-1	Childcare leave	-0.01 (0.08)	-0.05 (0.09)	0.02 (0.07)	- -	- -	-0.01 (0.09)	-0.06 (0.06)	-0.06 (0.07)	-0.14 (0.03) **	- -	- -	-0.15 (0.04) **	-0.03 (0.05)	-0.02 (0.06)	-0.06 (0.08)	- -	- -	-0.05 (0.09)
t-1	Service Sector Size	-0.51 (0.22) *	-0.48 (0.25) ^	-0.56 (0.25) *	- -	- -	-0.60 (0.30) ^	0.01 (0.11)	-0.05 (0.13)	-0.02 (0.14)	- -	- -	-0.01 (0.08)	-0.14 (0.16)	-0.16 (0.22)	-0.21 (0.15)	- -	- -	-0.28 (0.17)
t-1	Public Sector Size	0.96 (0.45) ^	1.01 (0.62)	1.10 (0.50) *	- -	- -	1.23 (0.64) ^	1.01 (0.47) ^	1.25 (0.43) *	0.95 (0.39) *	- -	- -	1.16 (0.33) **	0.57 (0.28) ^	0.63 (0.33) ^	0.65 (0.25) *	- -	- -	0.79 (0.30) *
t-1	Crude birth rate	0.14 (0.65)	0.23 (0.73)	0.21 (0.68)	- -	- -	0.32 (0.75)	-0.02 (0.48)	0.18 (0.46)	-0.24 (0.47)	- -	- -	-0.07 (0.49)	0.52 (0.29) ^	0.71 (0.35) ^	0.41 (0.29)	- -	- -	0.62 (0.37)
t	Employment protection legislation index	-3.65 (1.47) *	-0.66 (2.36)	-4.01 (1.46) *	- -	- -	-0.97 (2.43)	-4.28 (0.98) **	-3.29 (1.28) *	-3.26 (0.95) **	- -	- -	-2.32 (1.23) ^	-1.69 (0.54) **	-0.18 (0.68)	-1.08 (0.87)	- -	- -	0.32 (0.98)
t	Economic freedom index																		
	Joint F-test on total leave available to mothers and its square (d.f)	3.38 (2, 15) ^	2.31 (2, 15)	3.13 (2, 15) ^	-	-	2.07 (2, 15)	0.06 (2, 15)	0.31 (2, 15)	0.22 (2, 15)	-	-	0.47 (2, 15)	0.26 (2, 15)	0.88 (2, 15)	0.85 (2, 15)	-	-	2.36 (2, 15)
	n	282	242	274	-	-	234	282	242	274	-	-	234	282	242	274	-	-	234
	r-squared (within)	0.63	0.56	0.62	-	-	0.56	0.75	0.69	0.76	-	-	0.71	0.68	0.68	0.69	-	-	0.70

Note : * = p<0.05 ** = p<0.01 *** = p<0.001. ^ = p<0.1. The joint F-test on total maternity and parental leave available to mothers and its square tests the null that the two are jointly equal to zero.

Specifications :

1-6. See model D in table 7.6

7-12. See model E in table 7.6

13-18. See model F in table 7.6

variables that have cases imputed using LVCF/NVCB. Across all specifications in tables **F.13** and **F.14,** neither of the two variables (the proportion of 0-2 year olds in public childcare and the proportion of 3-6 year olds in public pre-primary or primary school) move into or out of significance when LVCF/NVCB cases are removed, suggesting that results for both are robust to the omission of LVCF/NVCB cases.

Again though, there are a couple of changes in results for the remaining family policy indicators that do not themselves contain any cases imputed using LVCF/NVCB. Several of these changes revolve around estimates of the effects of changes in child benefit payments. In specification **12** in both table **F.13** and table **F.14**, for example, removing all LVCF/NVCB cases leads to the negative association between child benefit and the gender gap for men and women with moderate education moving *out* of significance, while conversely in specification **18** in both table **F.13** and table **F.14** removing LVCF/NVCB cases leads to the negative association between child benefit and the gender gap for men and women with high education moving *into* of significance at the 5% level. The former two can both be explained mostly by the loss of observations for France between 2003 and 2010 – where decreases in the generosity of childcare payments coincide to some degree with increases in the gender gap in labour participation among 30-34 year olds with moderate education – while the latter two can be explained by deletion of observations for Italy in 2009 and 2010. In all cases though a negative relation between changes in child benefit payments and the gender gap in labour force participation is a little hard to explain theoretically, particularly for highly educated men and women who are less likely to suffer from a liquidity constraint on a second earner's labour supply decision (see chapter **7.3**).

Lastly, similar to several other models of the gender gap in labour force participation (for example, the models for 25-54 year olds by levels of education shown in tables **F.9** and **F.10**), removing cases imputed using LVCF/NVCB from models of the gender gap among 30-34 year olds again leads to the negative coefficients on flat-rate parental and childcare leave (specification **12** in table **F.13**) and childcare leave (specification **12** in table **F.14**) moving into significance. As discussed earlier, the latter association in particular is curious given that childcare leaves are theoretically unlikely to close gender gaps in labour participation. Again though, both can be mostly explained by the loss of the observation for Denmark in 1992, which precedes decreases in Danish childcare leave and increases in the gender gap in participation at moderate levels of education.

F.10. Female share of managers by level of education (all ages)

Tables **F.15** and **F.16** show results for models of the female share of managers among managers with low, medium and high education when any cases imputed using LVCF/NVCB are removed. In both tables, specifications **1**, **7** and **13** are the original models shown earlier in the main body, with **2-5, 8-11** and **14-17** models with any cases imputed using LVCF/NVCB on the affected variables removed individually, and **6**, **12** and **18** models with all cases imputed using LVCF/NVCB removed. Once more, it should be noted here that because of missing data on the dependent variable, the original models use no cases where data for tax support for the family are imputed using LVCF/NVCB. As a result, models **5**, **11** and **17** are left blank.

Removing cases imputed using LVCF/NVCB makes little real difference to results for those variables that use data imputed using LVCF/NVCB. Specification **9** in table **F.16**, for example, shows that removing any cases that use LVCF/NVCB to impute data for the proportion of children aged 3-6 in public pre-primary or primary school shifts to the negative association between the variable and the female share of moderately educated managers from significance at the 10% level to significance at the 5% level. Conversely, specification **15** in table **F.16** shows that removing the same LVCF/NVCB cases has the opposite effect on the positive association between the proportion of 3-6 year olds in public pre-primary or primary school and the female share of highly educated managers, with the coefficient shifting from significant at the 5% level to significant at the 10% level. However, in both cases the same relations were already and remain significant in specifications **9** and **15** in table **F.15**, and in any case the estimated coefficients remain only fairly small – the largest estimated effect of a 49 percentage point change in the proportion of 3-6 year olds in public pre-primary education is a 2.7 percentage point decrease in the female share of managers with moderate education (specification **9** in table **F.16**). Thus, any change in results here does not lead to major differences in broader inferences regarding the influence of public care for older children on the female share of managers.

Elsewhere, deleting cases imputed using LVCF/NVCB has some impact on associations for those variables that do not themselves used any data imputed through LVCF/NVCB. Removing all such cases from model **A** in table **7.8**, for instance, shifts the negative coefficient on flat-rate parental and childcare leave into significance at the 5% level (specification **6** in table **F.15**). This would, if valid, provide stronger evidence to suggest that changes in leave policies are particularly (and only) harmful to the careers of *less*

Table F.15. Additional models of the female share of managers by level of education with any data imputed using NVCB/LVCF removed

Dependent variable: Female share of managerial employment, by levels of education

Level of education: Low — Reference model: Model **A** in table **7.8**

Lag	Variable	1 Original model (B SE)	2 NVCB/LVCF cases omitted - children under 3 in public childcare (B SE)	3 NVCB/LVCF cases omitted - children 3-6 in public pre-primary (B SE)	4 NVCB/LVCF cases omitted - public expenditure on childcare (B SE)	5 NVCB/LVCF cases omitted - tax support for families (B SE)	6 All NVCB/LVCF cases removed (B SE)
	Dual earner-carer leave policy						
t-1	Mother-specific earnings-related leave	0.07 (0.47)	0.05 (0.61)	0.03 (0.45)	0.07 (0.68)	- -	-0.10 (0.65)
t	Father-specific leave	0.66 (0.17) **	0.87 (0.17) ***	0.64 (0.19) **	0.66 (0.18) **	- -	0.84 (0.18) ***
t-1	Gender-neutral earnings-related parental leave	-0.28 (0.16)	-0.34 (0.20)	-0.28 (0.16)	-0.32 (0.19)	- -	-0.33 (0.19)
	Dual earner childcare policy						
t	Children under 3 in public childcare	0.66 (0.20) **	**0.61 (0.22)** *	0.70 (0.22) **	0.67 (0.22) **	- -	**0.67 (0.25)** *
t	Children 3-6 in public pre-primary care or primary school	-0.18 (0.11)	-0.09 (0.13)	**-0.17 (0.11)**	-0.17 (0.11)	- -	**-0.09 (0.14)**
t	Public expenditure on childcare services	-0.37 (1.01)	-0.40 (1.31)	-0.33 (1.02)	**-0.54 (1.04)**	- -	**-0.60 (1.48)**
	General family support policy						
t	Child benefit per month for two chlldren	0.05 (0.23)	0.07 (0.40)	0.04 (0.24)	0.06 (0.23)	- -	0.06 (0.41)
t	Tax support for families	-0.07 (0.27)	0.07 (0.28)	-0.08 (0.27)	-0.01 (0.26)	- -	0.05 (0.28)
t-1	Flat-rate parental leave and childcare leave	-0.25 (0.14) ^	-0.30 (0.12) *	-0.24 (0.14)	-0.23 (0.15)	- -	-0.29 (0.13) *
	Alternative measures of leave policy						
t-1	Total maternity and parental leave available to mothers						
t-1	(Total maternity and parental leave available to mothers)^2						
t-1	Childcare leave						
t	Service Sector Size	0.81 (0.39) ^	0.00 (0.34)	0.77 (0.38) ^	0.67 (0.34) ^	- -	-0.15 (0.42)
t	Public Sector Size	2.50 (1.59)	2.22 (1.71)	2.69 (1.59)	2.41 (1.58)	- -	2.35 (1.61)
t-1	Crude birth rate	-0.07 (1.09)	-0.54 (0.84)	-0.15 (1.06)	-0.12 (1.09)	- -	-0.58 (0.88)
t	Employment protection legislation index	1.83 (2.75)	4.07 (4.75)	2.21 (2.98)	1.87 (4.16)	- -	3.71 (4.88)
t	Economic freedom index	-1.19 (3.06)	0.29 (4.85)	-2.15 (3.56)	-0.91 (3.33)	- -	-0.53 (5.37)
	v						
	n	256	210	251	244	-	201
	r-squared (within)	0.45	0.47	0.46	0.45	-	0.48

Level of education: Medium — Reference model: Model **B** in table **7.8**

Lag	Variable	7 Original model (B SE)	8 NVCB/LVCF cases omitted - children under 3 in public childcare (B SE)	9 NVCB/LVCF cases omitted - children 3-6 in public pre-primary (B SE)	10 NVCB/LVCF cases omitted - public expenditure on childcare (B SE)	11 NVCB/LVCF cases omitted - tax support for families (B SE)	12 All NVCB/LVCF cases removed (B SE)
	Dual earner-carer leave policy						
t-1	Mother-specific earnings-related leave	0.41 (0.20) ^	0.37 (0.27)	0.41 (0.20) ^	0.35 (0.28)	- -	0.40 (0.30)
t	Father-specific leave	0.24 (0.17)	0.29 (0.15) ^	0.25 (0.18)	0.26 (0.16)	- -	0.32 (0.14) *
t-1	Gender-neutral earnings-related parental leave	0.01 (0.03)	0.02 (0.03)	0.00 (0.04)	0.03 (0.04)	- -	0.03 (0.03)
	Dual earner childcare policy						
t	Children under 3 in public childcare	-0.15 (0.13)	**-0.16 (0.11)**	-0.17 (0.14)	-0.14 (0.13)	- -	**-0.18 (0.10)** ^
t	Children 3-6 in public pre-primary care or primary school	-0.05 (0.02) *	-0.07 (0.04) ^	**-0.06 (0.02)** *	-0.06 (0.02) *	- -	**-0.07 (0.04)** ^
t	Public expenditure on childcare services	-0.55 (0.37)	-0.62 (0.61)	-0.51 (0.36)	**-0.56 (0.33)**	- -	**-0.45 (0.62)**
	General family support policy						
t	Child benefit per month for two chlldren	0.13 (0.13)	0.03 (0.20)	0.13 (0.13)	0.20 (0.13)	- -	0.07 (0.21)
t	Tax support for families	-0.07 (0.20)	-0.09 (0.19)	-0.05 (0.21)	-0.06 (0.21)	- -	-0.07 (0.20)
t-1	Flat-rate parental leave and childcare leave	-0.08 (0.05)	-0.09 (0.06)	-0.08 (0.05)	-0.05 (0.05)	- -	-0.06 (0.06)
	Alternative measures of leave policy						
t-1	Total maternity and parental leave available to mothers						
t-1	(Total maternity and parental leave available to mothers)^2						
t-1	Childcare leave						
t	Service Sector Size	0.09 (0.26)	0.02 (0.35)	0.07 (0.27)	0.17 (0.25)	- -	0.13 (0.37)
t	Public Sector Size	0.99 (0.39) *	0.84 (0.31) *	1.01 (0.36) *	0.93 (0.35) *	- -	0.78 (0.35) *
t-1	Crude birth rate	0.48 (0.41)	0.36 (0.59)	0.45 (0.39)	0.37 (0.41)	- -	0.24 (0.57)
t	Employment protection legislation index	1.20 (0.92)	0.63 (1.58)	1.38 (0.92)	1.08 (1.34)	- -	1.09 (1.52)
t	Economic freedom index	1.14 (1.61)	2.07 (1.77)	0.82 (1.74)	1.47 (1.60)	- -	1.91 (1.97)
	v						
	n	267	221	262	254	-	211
	r-squared (within)	0.49	0.39	0.49	0.50	-	0.41

Level of education: High — Reference model: Model **C** in table **7.8**

Lag	Variable	13 Original model (B SE)	14 NVCB/LVCF cases omitted - children under 3 in public childcare (B SE)	15 NVCB/LVCF cases omitted - children 3-6 in public pre-primary (B SE)	16 NVCB/LVCF cases omitted - public expenditure on childcare (B SE)	17 NVCB/LVCF cases omitted - tax support for families (B SE)	18 All NVCB/LVCF cases removed (B SE)
	Dual earner-carer leave policy						
t-1	Mother-specific earnings-related leave	-0.03 (0.17)	0.11 (0.30)	-0.03 (0.18)	0.11 (0.32)	- -	0.15 (0.32)
t	Father-specific leave	-0.15 (0.11)	-0.29 (0.10) *	-0.13 (0.11)	-0.17 (0.12)	- -	-0.25 (0.10) *
t-1	Gender-neutral earnings-related parental leave	0.08 (0.10)	0.11 (0.11)	0.08 (0.10)	0.10 (0.10)	- -	0.12 (0.11)
	Dual earner childcare policy						
t	Children under 3 in public childcare	0.22 (0.08) *	**0.29 (0.11)** *	0.22 (0.10) *	0.25 (0.08) *	- -	**0.28 (0.12)** *
t	Children 3-6 in public pre-primary care or primary school	0.05 (0.01) **	0.01 (0.03)	**0.05 (0.01)** **	0.04 (0.01) **	- -	**-0.01 (0.03)**
t	Public expenditure on childcare services	-0.03 (0.52)	-0.03 (0.69)	-0.11 (0.52)	**0.03 (0.56)**	- -	**0.03 (0.74)**
	General family support policy						
t	Child benefit per month for two chlldren	0.22 (0.16)	0.06 (0.24)	0.20 (0.17)	0.20 (0.18)	- -	0.06 (0.27)
t	Tax support for families	-0.08 (0.12)	-0.15 (0.17)	-0.08 (0.13)	-0.11 (0.14)	- -	-0.14 (0.17)
t-1	Flat-rate parental leave and childcare leave	-0.05 (0.08)	-0.01 (0.08)	-0.05 (0.08)	-0.02 (0.08)	- -	0.01 (0.08)
	Alternative measures of leave policy						
t-1	Total maternity and parental leave available to mothers						
t-1	(Total maternity and parental leave available to mothers)^2						
t-1	Childcare leave						
t	Service Sector Size	-0.12 (0.15)	0.22 (0.22)	-0.15 (0.15)	0.00 (0.15)	- -	0.26 (0.18)
t	Public Sector Size	-0.70 (0.49)	-0.67 (0.43)	-0.70 (0.52)	-0.73 (0.48)	- -	-0.66 (0.43)
t-1	Crude birth rate	-0.44 (0.47)	-0.24 (0.68)	-0.44 (0.43)	-0.39 (0.49)	- -	-0.35 (0.69)
t	Employment protection legislation index	0.86 (0.82)	0.69 (1.54)	0.59 (0.76)	1.18 (1.14)	- -	0.73 (1.69)
t	Economic freedom index	-0.10 (1.38)	0.42 (1.45)	-0.04 (1.48)	0.71 (1.29)	- -	0.68 (1.85)
	v						
	n	266	220	261	253	-	210
	r-squared (within)	0.82	0.75	0.82	0.81	-	0.75

Note : * = p<0.05 ** = p<0.01 *** = p<0.001. ^ = p<0.1.

Specifications :

1-6. See model A in table 7.8

7-12. See model B in table 7.8

13-18. See model C in table 7.8

Table F.16. Additional models of the female share of managers by level of education with any data imputed using NVCB/LVCF removed

	Dependent variable:	Female share of managerial employment, by levels of education																	
	Level of education:	Low						Medium						High					
	Reference model	Model **D** in table **7.8**						Model **E** in table **7.8**						Model **F** in table **7.8**					
	Specification:	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**
	Excluded case(s)	Original model	NVCB/LVCF cases omitted - children under 3 in public childcare	NVCB/LVCF cases omitted - children 3-6 in public pre-primary	NVCB/LVCF cases omitted - public expenditure on childcare	NVCB/LVCF cases omitted - tax support for families	All NVCB/LVCF cases removed	Original model	NVCB/LVCF cases omitted - children under 3 in public childcare	NVCB/LVCF cases omitted - children 3-6 in public pre-primary	NVCB/LVCF cases omitted - public expenditure on childcare	NVCB/LVCF cases omitted - tax support for families	All NVCB/LVCF cases removed	Original model	NVCB/LVCF cases omitted - children under 3 in public childcare	NVCB/LVCF cases omitted - children 3-6 in public pre-primary	NVCB/LVCF cases omitted - public expenditure on childcare	NVCB/LVCF cases omitted - tax support for families	All NVCB/LVCF cases removed
Lag	Variable	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE	B SE
	Dual earner-carer leave policy																		
t-1	Mother-specific earnings-related leave																		
t	Father-specific leave	0.65 (0.22) *	0.95 (0.19) ***	0.62 (0.24) *	0.70 (0.19) **	- -	0.91 (0.19) ***	0.21 (0.22)	0.36 (0.15) *	0.20 (0.24)	0.28 (0.18)	- -	0.38 (0.15) *	-0.22 (0.11) ^	-0.36 (0.09) *	-0.22 (0.10) ^	-0.24 (0.11) *	- -	-0.32 (0.09) **
t-1	Gender-neutral earnings-related parental leave																		
	Dual earner childcare policy																		
t	Children under 3 in public childcare	0.61 (0.19) **	**0.51 (0.22)** *	0.65 (0.22) **	0.61 (0.21) **	- -	**0.61 (0.26)** *	-0.14 (0.16)	**-0.19 (0.12)**	-0.16 (0.17)	-0.14 (0.14)	- -	**-0.20 (0.11)** ^	0.19 (0.09) ^	**0.26 (0.13)** ^	0.18 (0.10)	0.24 (0.09) *	- -	**0.26 (0.12)** *
t	Children 3-6 in public pre-primary care or primary school	-0.17 (0.13)	-0.09 (0.15)	**-0.17 (0.12)**	-0.18 (0.12)	- -	**-0.09 (0.15)**	-0.05 (0.03) ^	-0.06 (0.04)	**-0.05 (0.02)** *	-0.06 (0.02) *	- -	**-0.07 (0.03)** ^	0.06 (0.02) *	0.02 (0.03)	**0.05 (0.03)** ^	0.06 (0.02) *	- -	**0.01 (0.03)**
t	Public expenditure on childcare services	-0.41 (0.95)	-0.49 (1.31)	-0.41 (0.95)	**-0.56 (0.99)**	- -	**-0.65 (1.42)**	-0.41 (0.34)	-0.46 (0.62)	-0.39 (0.33)	**-0.43 (0.31)**	- -	**-0.33 (0.62)**	0.02 (0.52)	0.00 (0.57)	-0.06 (0.52)	**0.06 (0.57)**	- -	**0.08 (0.62)**
	General family support policy																		
t	Child benefit per month for two children	-0.01 (0.21)	0.08 (0.38)	-0.03 (0.22)	0.03 (0.21)	- -	0.07 (0.41)	0.12 (0.15)	0.02 (0.22)	0.12 (0.14)	0.19 (0.14)	- -	0.05 (0.21)	0.22 (0.15)	0.07 (0.23)	0.19 (0.16)	0.22 (0.16)	- -	0.04 (0.26)
t	Tax support for families	0.01 (0.25)	0.19 (0.23)	-0.01 (0.26)	0.10 (0.24)	- -	0.16 (0.24)	-0.12 (0.22)	-0.15 (0.20)	-0.11 (0.22)	-0.10 (0.22)	- -	-0.12 (0.23)	-0.23 (0.11) ^	-0.35 (0.15) *	-0.23 (0.12) ^	-0.26 (0.12) *	- -	-0.31 (0.16) ^
t-1	Flat-rate parental leave and childcare leave																		
	Alternative measures of leave policy																		
t-1	Total maternity and parental leave available to mothers	-0.87 (0.69)	-1.29 (0.69) ^	-0.79 (0.68)	-0.89 (0.68)	- -	-1.14 (0.64) ^	0.07 (0.25)	0.05 (0.29)	0.11 (0.27)	0.07 (0.26)	- -	0.11 (0.31)	0.62 (0.32) ^	0.83 (0.37) *	0.62 (0.32) ^	0.73 (0.31) *	- -	0.87 (0.35) *
t-1	(Total maternity and parental leave available to mothers)^2	0.01 (0.01)	0.02 (0.01)	0.01 (0.01)	0.01 (0.01)	- -	0.01 (0.01)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	- -	0.00 (0.00)	-0.01 (0.00) ^	-0.01 (0.01) ^	-0.01 (0.00) ^	-0.01 (0.00) *	- -	-0.01 (0.01) *
t-1	Childcare leave	-0.22 (0.18)	-0.19 (0.19)	-0.23 (0.18)	-0.18 (0.20)	- -	-0.16 (0.20)	-0.03 (0.05)	-0.02 (0.06)	-0.05 (0.05)	0.01 (0.06)	- -	0.02 (0.07)	-0.13 (0.03) **	-0.11 (0.05) ^	-0.14 (0.03) **	-0.09 (0.04) *	- -	-0.10 (0.06)
t	Service Sector Size	0.83 (0.40) ^	0.07 (0.40)	0.79 (0.39) ^	0.69 (0.34) ^	- -	-0.09 (0.45)	0.05 (0.24)	0.01 (0.36)	0.04 (0.25)	0.13 (0.22)	- -	0.13 (0.36)	-0.11 (0.15)	0.24 (0.22)	-0.15 (0.15)	0.00 (0.14)	- -	0.26 (0.18)
t	Public Sector Size	2.32 (1.24) ^	1.68 (1.29)	2.56 (1.34) ^	2.14 (1.29)	- -	1.87 (1.38)	1.00 (0.38) *	0.74 (0.27) *	1.09 (0.40) *	0.85 (0.34) *	- -	0.67 (0.36) ^	-0.26 (0.44)	-0.03 (0.46)	-0.20 (0.46)	-0.28 (0.44)	- -	-0.04 (0.44)
t-1	Crude birth rate	0.22 (1.02)	-0.54 (0.88)	0.11 (1.01)	0.09 (1.01)	- -	-0.60 (0.93)	0.61 (0.46)	0.24 (0.64)	0.58 (0.44)	0.42 (0.45)	- -	0.12 (0.62)	-0.57 (0.40)	-0.28 (0.53)	-0.58 (0.36)	-0.48 (0.41)	- -	-0.37 (0.54)
t	Employment protection legislation index	-0.18 (3.09)	1.13 (4.72)	0.49 (3.38)	-0.61 (3.47)	- -	1.50 (4.94)	0.14 (1.22)	-0.55 (1.46)	0.56 (1.31)	-0.14 (1.09)	- -	0.05 (1.40)	2.35 (0.98) *	2.19 (1.41)	2.29 (1.02) *	2.50 (0.92) *	- -	2.18 (1.41)
t	Economic freedom index	-0.92 (2.88)	0.15 (4.74)	-1.92 (3.72)	-0.84 (3.34)	- -	-0.18 (5.39)	1.10 (1.66)	1.39 (1.80)	0.53 (1.84)	1.28 (1.68)	- -	1.22 (2.29)	-0.40 (1.27)	0.20 (1.33)	-0.65 (1.37)	0.36 (1.16)	- -	-0.22 (1.63)
	Joint F-test on total leave available to mothers and its square (d.f)	1.33 (2, 15)	2.78 (2, 15) ^	1.27 (2, 15)	1.81 (2, 15)	- -	3.59 (2, 15) ^	0.15 (2, 15)	0.37 (2, 15)	0.20 (2, 15)	0.11 (2, 15)	- -	0.26 (2, 15)	1.96 (2, 15)	3.59 (2, 15) ^	1.92 (2, 15)	3.14 (2, 15) ^	- -	4.77 (2, 15) *
	n	256	210	251	244	-	201	267	221	262	254	-	211	266	220	261	253	-	210
	r-squared (within)	0.45	0.48	0.46	0.46	-	0.48	0.47	0.38	0.47	0.49	-	0.40	0.83	0.77	0.83	0.82	-	0.77

Note : * = p<0.05 ** = p<0.01 *** = p<0.001. ^ = p<0.1. The joint F-test on total maternity and parental leave available to mothers and its square tests the null that the two are jointly equal to zero.

Specifications :

1-6. See model D in table 7.8

7-12. See model E in table 7.8

13-18. See model F in table 7.8

educated women. It is, however, driven entirely by the deletion of observations for Portugal between 2005-2010, where a substantial decrease in the female share of less educated managers coincides with no change in flat-rate parental and childcare leave. Thus, removing these cases also removes important uncertainty and counter-information from the model.

Specification **18** in table **F.16**, meanwhile, shows that the positive association between changes in total general leave available to mothers and the female share of highly educated managers moves into significance once any cases imputed using LVCF/NVCB are removed from model **F** in table **7.8**. This would if correct provide stronger evidence to suggest that increasing leave actually *promotes*, not constrains, the career attainment of *highly educated* women. It can though be explained mostly by the loss of cases for Ireland between 2004 and 2010 and Portugal between 2005 and 2010, where in both cases the female share of managers with high education increases without help from major changes in the total length of general leave available to mothers.

Lastly, several specifications across tables **F.15** and **F.16** show that removing any cases imputed using LVCF/NVCB leads to changes in associations on father-specific leave. More specifically, specification **12** in both table **F.15** and table **F.16** show that when LVCF/NVCB cases are removed from models of the female share of moderately educated managers, the positive coefficient on father-specific leave moves into significance, while specification 18 in both table **F.15** and table **F.16** suggests the opposite is true for the female share of highly educated managers – when LVCF/NVCB cases are removed from these models, the *negative* coefficient on father-specific leave moves into significance. The latter relation make little theoretical sense – it is difficult to see how an increase in paternity and other father-specific leaves could damage highly educated women's relative access to managerial positions. In all cases though, the changes can again be explained entirely by the deletion of observations for Ireland between 2004 and 2010 – where increases in the female share of managers with both moderate and high education coincides with no change in father-specific leave – and for Portugal between 2005 and 2010, where an increase in father-specific leave coincides with fluctuations in the female share of moderately educated managers and importantly increases in the female share of highly education managers. Thus, again, deleting these cases risks removing important uncertainty and producing misleading results.

F.11. Gender gap in the proportion of employees with top-quintile annual earnings by level of education (25-54)

Lastly, table **F.17** and **F.18** shows results for models of the gender gap in top quintile earnings by levels of education when any cases imputed using LVCF/NVCB are removed. Specifications **1**, **7** and **13** are again the original models shown earlier in the main body, with **2-5**, **8-11** and **14-17** models with any cases imputed using LVCF/NVCB on the four affected variables removed individually, and **6**, **12** and **18** models with all cases imputed using LVCF/NVCB removed. Again, for ease of interpretation, the variable(s) with cases removed is highlighted in bold.

Removing cases imputed through LVCF/NVCB from models of the gender gap in top quintile earnings leads to a couple of changes in results for those variables that contain data imputed using LVCF/NVCB. More specifically, in specifications **2** and **14** in table **F.17**, removing any cases imputed using LVCF/NVCB for the proportion of 0-2 year olds in public or public-funded childcare leads to the negative coefficients on the variable dropping out of significance at the 10% level, while specification **14** in table **F.18** shows something similar, albeit with the coefficient in question moving out of significance from the stronger 5% level. In all three cases, these alternative results weaken the suggestion put forward in the main body that increasing public childcare for very young children may help promote female career attainment. Importantly though, this suggestion was only cautious, and was made in conjunction with similar and stronger associations from models of the female share of managers across levels of education. Notably, results shown earlier in tables **F.15** and **F.16** suggest that changes in the proportion of 0-2 year olds in public childcare continue to share a significant positive association with changes in the female share of managers with low and high education even after cases imputed using LVCF/NVCB are removed from the analysis. Thus, although the changes shown in tables **F.17** and **F.18** are slightly concerning, there remains substantial evidence to suggest that increasing public childcare for very young children may help promote female career attainment.

Finally, similar to the models for the overall gender gap in top quintile earnings shown earlier in table **F.8**, removing all LVCF/NVCB cases from models of gender gaps in top earnings across levels of education does impact on results for those variables that do not suffer from missing data in as much as it again causes the model to collapse almost completely (specifications **6, 12** and **18** in both table **F.17** and **F.18**). Almost all significant

Table F.17. Additional models of the gender gap in top quintile earnings by level of education with any data imputed using NVCB/LVCF removed

Dependent variable: Gender gap in the proportion of employees with top quintile earnings, by levels of education

Level of education: Low — Reference model: Model **A** in table **7.10**

Lag	Variable	1 Original model	2 NVCB/LVCF cases omitted - children under 3 in public childcare	3 NVCB/LVCF cases omitted - children 3-6 in public pre-primary	4 NVCB/LVCF cases omitted - public expenditure on childcare	5 NVCB/LVCF cases omitted - tax support for families	6 All NVCB/LVCF cases removed
		B SE	B SE	B SE	B SE	B SE	B SE
	Dual earner-carer leave policy						
t	Mother-specific earnings-related leave	0.16 (0.65)	0.11 (1.20)	-0.31 (0.77)	0.12 (0.85)	0.16 (0.64)	-1.25 (1.63)
t	Father-specific leave	0.29 (0.49)	0.44 (0.65)	0.62 (0.59)	0.45 (0.56)	0.29 (0.49)	1.16 (0.88)
t	Gender-neutral earnings-related parental leave	0.11 (0.23)	-0.40 (0.54)	-0.12 (0.32)	-0.13 (0.35)	0.11 (0.23)	0.12 (1.15)
	Dual earner childcare policy						
t	Children under 3 in public childcare	-0.49 (0.28) ^	**-0.64 (0.54)**	-0.75 (0.42) ^	-0.34 (0.47)	-0.49 (0.28) ^	-1.43 (1.40)
t	Children 3-6 in public pre-primary care or primary school	-0.02 (0.07)	0.25 (0.28)	**-0.01 (0.09)**	0.07 (0.11)	-0.02 (0.07)	0.12 (0.63)
t	Public expenditure on childcare services	-0.18 (0.85)	-0.18 (1.56)	0.79 (1.08)	**-0.70 (1.48)**	-0.18 (0.85)	0.94 (3.48)
	General family support policy						
t	Child benefit per month for two children	-0.40 (0.59)	-0.55 (1.01)	-0.66 (0.60)	-0.73 (0.83)	-0.40 (0.59)	-0.31 (1.98)
t	Tax support for families	-0.19 (0.45)	-0.77 (0.95)	-0.35 (0.47)	-0.70 (0.73)	**-0.19 (0.44)**	0.17 (1.90)
t	Flat-rate parental leave and childcare leave	0.15 (0.28)	0.24 (0.53)	0.10 (0.32)	0.20 (0.35)	0.15 (0.28)	0.04 (0.75)
	Alternative measures of leave policy						
t	Total maternity and parental leave available to mothers						
t	(Total maternity and parental leave available to mothers)^2						
t	Childcare leave						
t	Service Sector Size	-0.51 (0.40)	0.40 (0.89)	-0.64 (0.78)	0.08 (0.67)		-2.75 (4.00)
t	Public Sector Size	0.11 (1.18)	1.22 (2.01)	-0.66 (1.64)	0.73 (1.71)		-2.77 (6.69)
t	Crude birth rate	0.08 (0.90)	0.31 (2.14)	0.86 (1.25)	0.88 (1.30)		0.27 (4.85)
t	Employment protection legislation index	4.91 (3.02)	11.85 (5.91) ^	2.95 (4.01)	5.06 (4.66)		4.57 (18.4)
t	Economic freedom index	-1.08 (3.38)	0.83 (6.52)	0.71 (3.44)	-1.37 (5.63)		-1.21 (14.4)
	Joint F-test on total leave available to mothers and its square (d.f)						
	n	80	65	73	70	79	54
	r-squared (within)	0.91	0.91	0.92	0.91	0.90	0.95

Level of education: Medium — Reference model: Model **B** in table **7.10**

Lag	Variable	7 Original model	8 NVCB/LVCF cases omitted - children under 3 in public childcare	9 NVCB/LVCF cases omitted - children 3-6 in public pre-primary	10 NVCB/LVCF cases omitted - public expenditure on childcare	11 NVCB/LVCF cases omitted - tax support for families	12 All NVCB/LVCF cases removed
		B SE	B SE	B SE	B SE	B SE	B SE
	Dual earner-carer leave policy						
t	Mother-specific earnings-related leave	-0.73 (0.42) ^	-0.69 (0.72)	-0.30 (0.45)	-0.30 (0.52)	-0.73 (0.42) ^	-0.22 (0.80)
t	Father-specific leave	-0.12 (0.26)	-0.15 (0.28)	-0.54 (0.25) *	-0.25 (0.29)	-0.12 (0.26)	-0.41 (0.29)
t	Gender-neutral earnings-related parental leave	0.11 (0.13)	0.39 (0.35)	0.11 (0.21)	0.35 (0.25)	0.11 (0.13)	0.10 (0.56)
	Dual earner childcare policy						
t	Children under 3 in public childcare	0.19 (0.19)	**0.18 (0.33)**	0.65 (0.29) *	0.03 (0.27)	0.19 (0.19)	0.70 (0.38)
t	Children 3-6 in public pre-primary care or primary school	-0.02 (0.07)	-0.14 (0.17)	**0.05 (0.08)**	-0.02 (0.12)	-0.02 (0.07)	-0.02 (0.27)
t	Public expenditure on childcare services	0.05 (0.66)	0.17 (1.12)	-0.39 (0.94)	**-0.59 (1.24)**	0.05 (0.65)	-0.60 (1.09)
	General family support policy						
t	Child benefit per month for two children	0.30 (0.46)	0.82 (0.53)	0.36 (0.47)	0.57 (0.62)	0.30 (0.46)	1.17 (0.69)
t	Tax support for families	0.34 (0.21)	0.77 (0.50)	0.36 (0.23)	0.67 (0.43)	**0.34 (0.21)**	0.61 (0.99)
t	Flat-rate parental leave and childcare leave	-0.15 (0.17)	-0.34 (0.22)	-0.11 (0.15)	-0.05 (0.22)	-0.15 (0.17)	-0.35 (0.40)
	Alternative measures of leave policy						
t	Total maternity and parental leave available to mothers						
t	(Total maternity and parental leave available to mothers)^2						
t	Childcare leave						
t	Service Sector Size	0.08 (0.47)	-0.87 (0.64)	0.67 (0.66)	-0.06 (0.69)	0.08 (0.47)	0.14 (1.85)
t	Public Sector Size	0.62 (1.08)	-0.78 (1.18)	2.09 (1.12) ^	0.31 (1.42)	0.62 (1.07)	-0.42 (3.65)
t	Crude birth rate	-0.34 (0.66)	0.05 (1.40)	-0.37 (0.83)	-0.90 (1.18)	-0.34 (0.65)	0.89 (2.02)
t	Employment protection legislation index	-0.96 (1.87)	-4.91 (4.18)	0.95 (2.23)	3.63 (3.16)	-0.96 (1.85)	-2.60 (7.70)
t	Economic freedom index	0.71 (1.75)	-0.16 (2.84)	-0.36 (1.84)	1.90 (3.22)	0.71 (1.74)	1.35 (3.64)
	Joint F-test on total leave available to mothers and its square (d.f)						
	n	81	66	73	71	80	54
	r-squared (within)	0.96	0.98	0.96	0.96	0.96	1.00

Level of education: High — Reference model: Model **C** in table **7.10**

Lag	Variable	13 Original model	14 NVCB/LVCF cases omitted - children under 3 in public childcare	15 NVCB/LVCF cases omitted - children 3-6 in public pre-primary	16 NVCB/LVCF cases omitted - public expenditure on childcare	17 NVCB/LVCF cases omitted - tax support for families	18 All NVCB/LVCF cases removed
		B SE	B SE	B SE	B SE	B SE	B SE
	Dual earner-carer leave policy						
t	Mother-specific earnings-related leave	-0.89 (0.63)	-1.17 (0.77)	-1.32 (0.61) *	-0.79 (0.69)	-0.92 (0.66)	-0.45 (0.59)
t	Father-specific leave	0.82 (0.43) ^	0.77 (0.52)	1.03 (0.26) **	0.83 (0.48) ^	0.91 (0.46) ^	1.03 (0.36) ^
t	Gender-neutral earnings-related parental leave	0.20 (0.28)	0.22 (0.58)	0.19 (0.28)	0.19 (0.48)	0.14 (0.29)	-0.61 (0.53)
	Dual earner childcare policy						
t	Children under 3 in public childcare	-0.87 (0.43) ^	**-0.38 (0.76)**	-1.33 (0.28) ***	-0.82 (0.66)	-0.92 (0.47) ^	-1.02 (0.40) ^
t	Children 3-6 in public pre-primary care or primary school	0.01 (0.10)	-0.22 (0.26)	**0.07 (0.10)**	-0.09 (0.15)	0.03 (0.10)	0.10 (0.28)
t	Public expenditure on childcare services	-0.66 (1.20)	0.67 (2.03)	-1.19 (1.29)	**0.74 (1.54)**	-0.59 (1.20)	0.32 (2.13)
	General family support policy						
t	Child benefit per month for two children	-0.53 (0.31) ^	-0.58 (0.44)	-0.90 (0.38) *	-0.44 (0.33)	-0.86 (0.51)	-1.36 (0.90)
t	Tax support for families	1.49 (0.52) **	2.09 (1.15) ^	1.18 (0.38) **	1.62 (0.89) ^	**1.40 (0.53)** *	-0.04 (0.97)
t	Flat-rate parental leave and childcare leave	-0.43 (0.24) ^	-0.80 (0.40) ^	-0.48 (0.21) *	-0.59 (0.27) *	-0.41 (0.23) ^	-0.38 (0.30)
	Alternative measures of leave policy						
t	Total maternity and parental leave available to mothers						
t	(Total maternity and parental leave available to mothers)^2						
t	Childcare leave						
t	Service Sector Size	-0.83 (0.68)	-1.51 (1.27)	-0.10 (0.57)	-1.34 (1.03)	-0.73 (0.66)	2.46 (1.94)
t	Public Sector Size	-2.00 (2.26)	-2.94 (3.54)	-0.28 (1.38)	-3.07 (2.70)	-2.04 (2.24)	2.43 (3.23)
t	Crude birth rate	-0.55 (1.06)	1.11 (2.46)	-1.03 (0.99)	-0.46 (1.55)	-0.37 (1.10)	-1.44 (1.72)
t	Employment protection legislation index	-4.95 (4.09)	-15.27 (8.03) ^	-5.51 (3.19) ^	-6.73 (5.67)	-5.20 (4.09)	-0.94 (7.64)
t	Economic freedom index	4.21 (3.44)	4.96 (5.83)	2.09 (3.22)	5.03 (4.47)	4.26 (3.33)	0.50 (7.11)
	Joint F-test on total leave available to mothers and its square (d.f)						
	n	82	67	74	72	81	55
	r-squared (within)	0.97	0.97	0.99	0.98	0.97	1.00

Note : * = p<0.05 ** = p<0.01 *** = p<0.001. ^ = p<0.1.

Specifications :

1-6. See model A in table 7.10

7-12. See model B in table 7.10

13-18. See model C in table 7.10

Table F.18. Additional models of the gender gap in top quintile earnings by level of education with any data imputed using NVCB/LVCF removed

Dependent variable: Gender gap in the proportion of employees with top quintile earnings, by levels of education

	Level of education:	Low					
	Reference model	Model **D** in table **7.10**					
	Specification:	**1**	**2**	**3**	**4**	**5**	**6**
	Excluded case(s)	Original model	NVCB/LVCF cases omitted - children under 3 in public childcare	NVCB/LVCF cases omitted - children 3-6 in public pre-primary	NVCB/LVCF cases omitted - public expenditure on childcare	NVCB/LVCF cases omitted - tax support for families	All NVCB/LVCF cases removed
Lag	Variable	B SE	B SE	B SE	B SE	B SE	B SE
	Dual earner-carer leave policy						
t	Mother-specific earnings-related leave						
t	Father-specific leave	0.33 (0.44)	0.79 (0.56)	0.57 (0.55)	0.51 (0.51)	0.33 (0.44)	0.60 (1.23)
t	Gender-neutral earnings-related parental leave						
	Dual earner childcare policy						
t	Children under 3 in public childcare	-0.43 (0.32)	**-0.45 (0.58)**	-0.68 (0.43)	-0.31 (0.54)	-0.43 (0.32)	-1.89 (1.96)
t	Children 3-6 in public pre-primary care or primary school	-0.02 (0.07)	0.28 (0.28)	**-0.03 (0.09)**	0.04 (0.10)	-0.02 (0.07)	-0.24 (0.79)
t	Public expenditure on childcare services	0.20 (1.07)	-1.21 (1.84)	0.64 (1.42)	**-0.44 (1.50)**	0.20 (1.07)	3.50 (7.68)
	General family support policy						
t	Child benefit per month for two chlldren	-0.32 (0.54)	0.29 (0.74)	-0.42 (0.52)	-0.38 (0.69)	-0.32 (0.53)	-0.58 (1.90)
t	Tax support for families	-0.18 (0.41)	-0.41 (0.70)	-0.19 (0.48)	-0.34 (0.62)	**-0.18 (0.40)**	0.36 (1.41)
t	Flat-rate parental leave and childcare leave						
	Alternative measures of leave policy						
t	Total maternity and parental leave available to mothers	0.64 (0.45)	0.52 (0.88)	0.54 (0.50)	0.55 (0.66)	0.64 (0.45)	0.58 (1.92)
t	(Total maternity and parental leave available to mothers)^2	-0.01 (0.01)	-0.02 (0.02)	-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)	0.01 (0.03)
t	Childcare leave	0.15 (0.23)	0.34 (0.40)	0.14 (0.25)	0.18 (0.29)	0.15 (0.23)	0.03 (0.66)
t	Service Sector Size	-0.44 (0.47)	0.32 (0.99)	-0.67 (0.83)	-0.03 (0.77)	-0.44 (0.47)	-3.46 (4.90)
t	Public Sector Size	0.23 (1.21)	2.09 (2.29)	-0.31 (1.52)	0.63 (1.65)	0.23 (1.20)	-3.74 (8.97)
t	Crude birth rate	0.13 (1.00)	0.10 (1.96)	0.42 (1.40)	0.51 (1.30)	0.13 (1.00)	-2.55 (6.03)
t	Employment protection legislation index	5.31 (2.31) *	11.13 (4.27) *	5.06 (3.11)	5.66 (3.88)	5.31 (2.29) *	10.2 (18.4)
t	Economic freedom index	-0.10 (3.20)	5.91 (6.88)	1.18 (3.55)	-0.29 (5.22)	-0.10 (3.18)	-12.4 (16.1)
	Joint F-test on total leave available to mothers and its square (d.f)	1.06 (2, 27)	0.69 (2, 12)	0.62 (2, 21)	0.35 (2, 17)	1.07 (2, 27)	0.16 (2, 3)
	n	80	65	73	70	79	54
	r-squared (within)	0.91	0.92	0.92	0.91	0.91	0.94

	Level of education:	Medium					
	Reference model	Model **E** in table **7.10**					
	Specification:	**7**	**8**	**9**	**10**	**11**	**12**
	Excluded case(s)	Original model	NVCB/LVCF cases omitted - children under 3 in public childcare	NVCB/LVCF cases omitted - children 3-6 in public pre-primary	NVCB/LVCF cases omitted - public expenditure on childcare	NVCB/LVCF cases omitted - tax support for families	All NVCB/LVCF cases removed
Lag	Variable	B SE	B SE	B SE	B SE	B SE	B SE
	Dual earner-carer leave policy						
t	Mother-specific earnings-related leave						
t	Father-specific leave	-0.33 (0.23)	-0.57 (0.23) *	-0.72 (0.18) **	-0.41 (0.25)	-0.33 (0.23)	-0.45 (0.37)
t	Gender-neutral earnings-related parental leave						
	Dual earner childcare policy						
t	Children under 3 in public childcare	0.09 (0.23)	**-0.04 (0.34)**	0.63 (0.29) *	0.02 (0.32)	0.09 (0.23)	0.88 (0.73)
t	Children 3-6 in public pre-primary care or primary school	0.00 (0.09)	-0.17 (0.17)	**0.07 (0.09)**	0.04 (0.11)	0.00 (0.08)	0.17 (0.45)
t	Public expenditure on childcare services	0.14 (0.68)	1.13 (1.10)	-0.05 (0.76)	**-0.64 (1.17)**	0.14 (0.67)	-1.44 (4.57)
	General family support policy						
t	Child benefit per month for two chlldren	0.15 (0.37)	0.09 (0.44)	0.19 (0.34)	0.19 (0.40)	0.15 (0.37)	0.79 (0.88)
t	Tax support for families	0.13 (0.19)	0.21 (0.34)	0.21 (0.15)	0.28 (0.29)	**0.13 (0.19)**	0.08 (0.50)
t	Flat-rate parental leave and childcare leave						
	Alternative measures of leave policy						
t	Total maternity and parental leave available to mothers	0.12 (0.40)	0.06 (0.51)	0.21 (0.37)	0.28 (0.54)	0.12 (0.40)	-0.53 (1.02)
t	(Total maternity and parental leave available to mothers)^2	0.00 (0.01)	0.01 (0.01)	0.00 (0.01)	0.00 (0.01)	0.00 (0.01)	0.00 (0.01)
t	Childcare leave	-0.12 (0.15)	-0.32 (0.22)	-0.11 (0.11)	-0.06 (0.20)	-0.12 (0.15)	-0.21 (0.25)
t	Service Sector Size	0.00 (0.45)	-0.81 (0.54)	0.66 (0.57)	0.05 (0.66)	0.00 (0.45)	1.07 (1.79)
t	Public Sector Size	0.49 (1.11)	-1.16 (1.56)	1.85 (1.05) *	0.43 (1.50)	0.49 (1.10)	1.03 (3.28)
t	Crude birth rate	-0.18 (0.67)	0.00 (1.24)	-0.07 (0.63)	-0.17 (0.96)	-0.18 (0.66)	1.65 (2.46)
t	Employment protection legislation index	1.73 (1.84)	-1.53 (3.56)	2.53 (1.65)	5.00 (2.99)	1.73 (1.83)	-1.19 (4.42)
t	Economic freedom index	-0.06 (2.22)	-4.74 (4.83)	-1.02 (2.24)	1.71 (4.39)	-0.06 (2.21)	2.89 (11.9)
	Joint F-test on total leave available to mothers and its square (d.f)	0.22 (2, 27)	0.99 (2, 12)	0.31 (3, 21)	0.47 (2, 17)	0.23 (2, 27)	0.14 (2, 3)
	n	81	66	73	71	80	54
	r-squared (within)	0.95	0.98	0.96	0.96	0.95	0.99

	Level of education:	High					
	Reference model	Model **F** in table **7.10**					
	Specification:	**13**	**14**	**15**	**16**	**17**	**18**
	Excluded case(s)	Original model	NVCB/LVCF cases omitted - children under 3 in public childcare	NVCB/LVCF cases omitted - children 3-6 in public pre-primary	NVCB/LVCF cases omitted - public expenditure on childcare	NVCB/LVCF cases omitted - tax support for families	All NVCB/LVCF cases removed
Lag	Variable	B SE	B SE	B SE	B SE	B SE	B SE
	Dual earner-carer leave policy						
t	Mother-specific earnings-related leave						
t	Father-specific leave	0.43 (0.51)	0.73 (0.95)	0.57 (0.41)	0.53 (0.66)	0.58 (0.49)	0.93 (0.50)
t	Gender-neutral earnings-related parental leave						
	Dual earner childcare policy						
t	Children under 3 in public childcare	-0.87 (0.39) *	**-0.31 (0.70)**	-1.28 (0.33) **	-0.65 (0.50)	-1.05 (0.45) *	-1.34 (0.73)
t	Children 3-6 in public pre-primary care or primary school	0.04 (0.12)	0.11 (0.39)	**0.14 (0.12)**	-0.01 (0.14)	0.06 (0.12)	-0.21 (0.41)
t	Public expenditure on childcare services	-0.24 (1.49)	0.22 (2.91)	-0.76 (1.16)	**0.59 (1.92)**	-0.23 (1.51)	2.62 (3.29)
	General family support policy						
t	Child benefit per month for two chlldren	-0.71 (0.41) ^	-0.71 (0.53)	-1.39 (0.44) **	-0.71 (0.52)	-1.24 (0.53) *	-1.46 (0.99)
t	Tax support for families	1.02 (0.38) *	1.02 (0.74)	0.67 (0.28) *	0.88 (0.51)	**0.98 (0.38)** *	0.36 (0.47)
t	Flat-rate parental leave and childcare leave						
	Alternative measures of leave policy						
t	Total maternity and parental leave available to mothers	0.00 (0.78)	-0.18 (0.96)	-0.19 (0.69)	-0.28 (0.83)	-0.02 (0.76)	0.24 (0.79)
t	(Total maternity and parental leave available to mothers)^2	0.00 (0.01)	-0.01 (0.01)	0.00 (0.01)	0.00 (0.01)	0.00 (0.01)	0.00 (0.01)
t	Childcare leave	-0.28 (0.20)	-0.24 (0.38)	-0.34 (0.16) *	-0.35 (0.24)	-0.33 (0.22)	-0.39 (0.23)
t	Service Sector Size	-0.87 (0.73)	-0.40 (1.92)	0.07 (0.71)	-1.03 (1.07)	-0.81 (0.70)	1.35 (1.66)
t	Public Sector Size	-1.58 (2.47)	0.30 (4.35)	0.11 (1.45)	-1.91 (2.81)	-2.31 (2.50)	0.10 (4.02)
t	Crude birth rate	-0.42 (1.26)	0.89 (2.93)	-0.53 (1.15)	0.19 (1.71)	0.06 (1.35)	-2.23 (1.69)
t	Employment protection legislation index	-1.75 (3.82)	-7.78 (8.72)	-1.25 (3.24)	-5.30 (5.86)	-2.11 (3.41)	-2.77 (4.66)
t	Economic freedom index	3.44 (3.72)	8.34 (8.91)	0.21 (3.09)	5.03 (4.73)	2.98 (3.67)	-4.47 (9.26)
	Joint F-test on total leave available to mothers and its square (d.f)	0.01 (2, 28)	0.21 (2, 13)	0.08 (2, 21)	0.09 (2, 18)	0.04 (2, 27)	0.15 (2, 3)
	n	82	67	74	72	81	55
	r-squared (within)	0.96	0.96	0.98	0.97	0.97	1.00

Note : * = p<0.05 ** = p<0.01 *** = p<0.001. ^ = p<0.1. The joint F-test on total maternity and parental leave available to mothers and its square tests the null that the two are jointly equal to zero.

Specifications :

1-6. See model D in table 7.10

7-12. See model E in table 7.10

13-18. See model F in table 7.10

variables move out of significance even at the 10% level, and many coefficients change radically in size and even switch sign. As discussed earlier in section **F.6**, the most likely explanation here is that the deletion of all cases imputed using LVCF/NVCB reduces the sample size to a point where there is little statistical power left in the model, in addition to deleting valuable cases. In any case, it is clear that removing these cases radically changes estimates to the extent that the final models in specifications in specifications **6, 12** and **18** in both table **F.17** and **F.18** are unrecognizable from those presented in the main text.

References

Abendroth, A., Maas, I. and Van der Lippe, T. (2011). Human capital and the gender gap in authority in European countries. *European Sociological Review*, 29(2), 261-273.

Abrahamson, P. (2010). Continuity and consensus: governing families in Denmark. *Journal of European Social Policy*, 20(5), 399-409.

Achen, C. (2000). *Why lagged dependent variables can suppress the explanatory power of other variables.* Unpublished paper presented at the Annual Meeting of the Political Methodology Section of the American Political Science Association. 20-22 July 2000. UCLA, Los Angeles

Adema, W., Fron, P. and Ladaique, M. (2011). Is the European welfare state really more expensive? Indicators on social spending, 1980-2012; and a manual to the OECD social expenditure database (SOCX). *OECD Social, Employment and Migration Working Papers,* no. 124. Paris: Organisation for Economic Co-operation and Development.

Akgunduz, Y.E. and Plantenga, J. (2012). Labour market effects of parental leave in Europe. *Cambridge Journal of Economics*, 27(4), 854-962.

Anderson, L.M., Shinn, C., Fullilove, M.T., Scrimshaw, S.C., Fielding, J.E., Normand, J. and Carande-Kulis, V.G. (2003). The effectiveness of early childhood development programs: a systematic review. *American Journal of Preventive Medicine*, 24(3), 32-46.

Angrist, J.D. and Pischke, J.S. (2009). *Mostly harmless econometrics: an empiricist's companion.* Princeton: Princeton University Press.

Angrist, J.D. and Krueger, A.B. (2001). Instrumental variables and the search for identification: from supply and demand to natural experiments. *The Journal of Economic Perspectives*, 15(4), 69-85.

Anker, R. (2001). Theories of occupational segregation by sex: An overview. In M.F. Loufti, (Ed.). *Women, gender and work: what is equality and how do we get there?* Geneva: International Labour Organization.

Bäckman, O. and Ferrarini, T. (2009). Combating child poverty? A multilevel assessment of family policy institutions and child poverty in 21 old and new welfare states. *Journal of Social Policy,* 39(2), 275-296.

Baker, M. and Milligan, K. (2008). How does job-protected maternity leave affect mothers' employment? *Journal of Labor Economics*, 26(4), 655-691.

Bainbridge, J., Meyers, M.K. and Waldfogel, J. (2003). Child care policy reform and the employment of single mothers. *Social Science Quarterly,* 84(4), 771-791.

Baltagi, B.H. (2001). *Econometric analysis of panel data*. 2nd ed. Chichester: John Wiley & Sons.

Baltagi, B.H. and Griffin, J.M. (1984). Short and long run effects in pooled models. *International Economic Review*, 25(3), 631-645.

Bambra, C. (2004). The worlds of welfare: illusory and gender blind? *Social Policy and Society*, 3(3), 201-211.

Bambra, C. (2007). Defamilisation and welfare state regimes: a cluster analysis. *International Journal of Social Welfare,* 16(4), 326-338.

Bartels, B.L. (2008). *Beyond 'fixed versus random effects': a framework for improving substantive and statistical analysis of panel, time-series cross-sectional and multilevel data*. Unpublished paper presented at the Political Methodology Conference of the Society for Political Methodology. 9-12 July 2008. Ann Arbor, Mississippi.

Baum, C.F. (2001). Residual diagnostics for cross-section time series regression models. *The Stata Journal*, 1(1), 101-104.

Baum, C.F. (2003). The effects of maternity leave legislation on mothers' labor supply after childbirth. *Southern Economic Journal*, 69(4), 772-799.

Baum, C.F. (2006). *An introduction to modern econometrics using Stata*. College Station Stata Press.

Baum, C.F., Nichols, A. and Shaffer, M.E. (2010). *Evaluating one-way and two-way cluster-robust covariance matrix estimators*. Unpublished paper presented to the BOS'10 Stata Conference. 15-16 July 2010. Boston.

Baum, C.F., Shaffer, M.E. and Stillman, S. (2003). Instrumental variables and GMM: estimation and testing. *The Stata Journal*, 3(1), 1-31.

Beck, N. (2001). Time-series-cross-section data: what have we learned in the past few years? *Annual Review of Political Science*, 4(1), 271-293.

Beck, N. (2008). Time-series-cross-section methods. In J.M. Box-Steffensmeier, H.E. Brady, and D. Collier, (Eds.). *The Oxford handbook of political methodology*. Oxford: Oxford University Press.

Beck, N. and Katz, J.N. (1995). What to do (and not to do) with time-series cross-section data. *American Political Science Review*, 89(3), 634-647.

Beck, N. and Katz, J.N. (2007). Random coefficients models for time-series-cross-section data: Monte Carlo experiments. *Political Analysis*, 15(2), 182-195.

Beck, N. and Katz, J.N. (2011). Modelling dynamics in time-series-cross-section political economy data. *Annual Review of Political Science,* 14, 331-352.

Becker, G.S. (1993). *Human capital: a theoretical and empirical analysis, with special reference to education.* 3rd ed. Chicago: Chicago University Press.

Berger, L.M., Hill, J. and Waldfogel, J. (2005). Maternity leave, early maternal employment and child health and development in the US. *The Economic Journal*, 115(501), F29-F47.

Berlinski, S., Galiani, S., & Gertler, P. (2009). The effect of pre-primary education on primary school performance. *Journal of Public Economics*, *93*(1), 219-234.

Bettio, F. and Verashchagina, A. (2009). Gender segregation in the labour market: root causes, implications and policy responses in the EU. Luxembourg: Publications office of the European Union.

Bianchi, S.M., Milkie, M.A., Sayer, L.C. & Robingson, J.P. (2000). Is anyone doing the housework? Trends in the gender division of household labour. *Social Forces*, 79(1), 191-

228.

Blau, D. and Currie, J. (2003). Preschool, day care, and after school care: who's minding the kids? *NBER Working Papers,* no. 10670. Cambridge: National Bureau of Economic Research.

Blau, F.D. and Kahn, L.M. (1997). Swimming upstream: trends in the gender wage differential in the 1980s. *Journal of Labor Economics*, 15(1), 1-42.

Blau, F.D. and Kahn, L.M. (2003). Understanding international differences in the gender pay gap. *Journal of Labor Economics,* 21(1), 106-144.

Blau, F.D., Ferber, M.A. and Winkler, A.E. (2001). *The economics of women, men and work.* 4th ed. Upper Saddle River: Prentice Hall.

Bloom, D. E., Canning, D., Fink, G., & Finlay, J. E. (2009). Fertility, female labor force participation, and the demographic dividend. *Journal of Economic Growth*, *14*(2), 79-101.

Blossfeld, H.P. and Drobnič, S. (Eds.). (2001). *Careers of couples in contemporary societies: from male breadwinner to dual-earner families*. Oxford: Oxford University Press.

Bock, G. and James, C. (1992). *Beyond equality and difference: citizenship, feminist politics, and female subjectivity*. London: Routledge.

Borjas, G.J. (2012). *Labor economics.* 3rd ed. Boston: McGraw-Hill Higher Education.

Bradshaw, J. and Finch, N. (2002). A comparison of child benefit packages in 22 countries. *Department for Work and Pensions Research Report,* no. 174. Leeds: Corporate Document Service.

Brady, D., Fullerton, A.S. and Moren Cross, J. (2010). More than just nickels and dimes: A cross-national analysis of working poverty in affluent democracies. *Social Problems*, 57(4), 559-585.

Bratti, M. (2003). Labour force participation and marital fertility of Italian women: the role of education. *Journal of Population Economics*, 16(3), 525-554.

Brennan, D. (2007). Babies, budgets and birthrates: work/family policy in Australia 1996–2006. *Social Politics: International Studies in Gender, State and Society*, 14(1), 31-57.

Campbell, K. and Mínguez-Vera, A. (2008). Gender diversity in the boardroom and firm financial performance. *Journal of Business Ethics*, *83*(3), 435-451.

Carter, D.A., D'Souza, F., Simkins, B.J., Simpson, W.G. (2007). The diversity of corporate board committees and financial performance. *Oklahoma State University Working Paper Series.* [Online]. Available at: http://www.fma.org/Prague/Papers/ TheDiversityofCorporateBoardCommittees1-28-2008_UNC_.pdf [Accessed 14th July 2012].

Castellacci, F. and Natera, J.M. (2011). A new panel dataset for cross-country analyses of national systems, growth and development (CANA). *Innovation and Development*, 1(2), 205-266.

Cerny, P. and Evans, M. (2003). Globalization and social policy. In N. Ellision, and C. Pierson, (Eds.). *Developments in British social policy 2*. Basingstoke: Palgrave Macmillan

Press.

Charles, M. (1992). Cross-national variation in occupational sex segregation. *American Sociological Review*, 57(4), 483-502.

Charles, M., Buchmann, M., Halebsky, S., Powers, J.M. and Smith, M.M. (2001). The context of women's market careers: a cross-national study. *Work and Occupations*, 28(3), 371-396.

Choi, I. (2001). Unit root tests for panel data. *Journal of International Money and Finance*, 20(2), 249-272.

Chung, H., and Tijdens, K. (2013). Working time flexibility components and working time regimes in Europe: using company-level data across 21 countries. *The International Journal of Human Resource Management*, *24*(7), 1418-1434.

Coltrane, S. (2000). Research on household labor: modeling and measuring the social embeddedness of routine family work. *Journal of Marriage and Family*, 62(4), 1208-1233.

Cook, R.D. and Weisberg, S. (1982). *Residuals and influence in regression*. New York: Chapman and Hall.

Crompton, R. and Lyonette, C. (2005). The new gender essentialism: domestic and family 'choices' and their relation to attitudes. *The British Journal of Sociology*, *56*(4), 601-620.

Cunningham, M. (2007). Influences of women's employment on the gendered division of household labour over the life course: evidence from a 31-year panel study. *Journal of Family Issues*, 28(3), 422-444.

Daly, M. (2000). A fine balance? Women's labour market participation patterns in international comparison. In F. Scharpf and V. Schmidt, (Eds.). *From vulnerability to competitiveness: welfare and work in the open economy: vol. II*. Oxford: Oxford University Press.

Date-Bah, E. (1997). *Promoting gender equality at work: turning vision into reality for the twenty-first century*. London: Zed Books.

De Hoyos, R.E. and Sarafidis, V. (2006). Testing for cross-sectional dependence in panel-data models. *The Stata Journal*, 6(4): 482-496.

Den Dulk, L., van Doorne-Huiskes, A., Schippers, J. (1996). Work-family arrangements and gender inequality in Europe. *Women in Management Review*, 11(5), 25-35.

Dezso, C.L. and Ross, D.G. (2008). 'Girl power': female participation in top management and firm performance. *Robert H. Smith School of Business Working Paper,* no. RHS-06-104. College Pak: Robert H. Smith School of Business.

Dijkstra, A.G. (2000). A larger pie through a fair share? Gender equality and economic performance. *Institute of Social Studies Working Paper,* no. 315. Den Haag: Institute of Social Studies.

Dougherty, C. (2006). *Introduction to econometrics.* 3rd edn. Oxford: Oxford University Press.

Drobnič, S. and Blossfeld, H. (2001). Careers of couples and trends in inequality. In H. Blossfeld, and S. Drobnič, (Eds.). *Careers of couples in contemporary societies: from male*

breadwinner to dual-earner families. Oxford: Oxford University Press.

Ellingsæter, A.L. (2009). Leave policy in the Nordic welfare states: a 'recipe' for high employment/high fertility? *Community, Work and Family,* 12(1), 1-19.

Elson, D. (1999). Labour markets as gendered institutions: equality, efficiency and empowerment issues. *World Development Review*, 27(3), 611-627.

England, P., Gornick, J. and Fitzgibbons Shafer, E. (2012). Women's employment, education and the gender gap in 17 countries. *Monthly Labor Review*, 145(4), 3-12.

England, P., Farkas, G., Kilbourne, B.S. and Dou, T. (1988). Explaining occupational sex segregation and wages: findings from a model with fixed effects. *American Sociological Review*, 53(4), 544-558.

Englehardt, H., Kögel, T. and Prskawetz, A. (2004). Fertility and women's employment reconsidered: a macro-level time-series analysis for developed countries, 1960-2000. *Population Studies,* 58(1), 109-120.

Engster, D. and Olofsdotter Stensöta, H. (2011). Do family policy regimes matter for children's well-being? *Social Politics*, 18(1), 82-124.

Esping-Andersen, G. (1990). *The three worlds of welfare capitalism*. Cambridge: Polity Press.

Esping-Andersen, G. (1999). *Social foundations of postindustrial economies*. New York: Oxford University Press.

Esping-Andersen, G. (2002). *Why we need a new welfare state.* Oxford: Oxford University Press.

Eurostat. (2006). *Basic concepts and definitions.* [Online]. Luxembourg: Eurostat. Available at: http://circa.europa.eu/irc/dsis/employment/info/data/eu_lfs/lfs_main/lfs/lfs_concepts_and_definitions.htm [Accessed: 7 Nov 2012].

Eurostat. (2008). *Statistics in focus: employment gender gap in the EU is narrowing.* [Online]. Luxembourg: Eurostat. Available at: http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-SF-08-099/EN/KS-SF-08-099-EN.PDF [Accessed: 1 Nov 2013].

Eurostat. (2013). *Eurostat Labour Market Statistics.* [Online]. Luxembourg: Eurostat. Available at: http://epp.eurostat.ec.europa.eu/portal/page/portal/labour_market/introduction [Accessed: 21st July 2014].

Eurostat. (2014). *Eurostat Statistics Database.* [Online]. Luxembourg: Eurostat. Available at http://epp.eurostat.ec.europa.eu [Accessed 19th July 2014].

Evertsson, M., England, P., Mooi-Reci, I., Hermsen, J., de Bruijn, J. and Cotter, D. (2009). Is gender inequality greater at lower or higher educational levels? Common patterns in the Netherlands, Sweden, and the United States. *Social Politics*, 16(2), 210-241.

Eydal, G.B. and Rostgaard, T. (2011). Gender equality revisited: changes in Nordic childcare policies in the 2000s. *Social Policy and Administration*, 45(2): 161-179.

Fairbrother, M. (2014). Two multilevel modeling techniques for analyzing comparative longitudinal survey datasets. *Political Science Research and Methods*, *2*(1), 119-140.

Federal Social Insurance Office (FSIO). (2009). *Features of Swiss family policy.* [Online]. Berne: Federal Social Insurance Office. Available at: http://www.bsv.admin.ch/themen/zulagen/00058/index.html?lang=en [Accessed 18th Dec 2012].

Ferrarini, T. (2006). *Families, states and labour markets: institutions, causes and consequences of family policy in post-war welfare states*. Cheltenham: Edward Elgar.

Ferragina, E., Seeleib-Kaiser, M. and Tomlinson, M. (2013). Unemployment protection and family policy at the turn of the 21st century: a dynamic approach to welfare regime theory. *Social Policy and Administration*, 47(7), 783-805.

Field, A. (2009). *Discovering statistics using SPSS*. 3rd ed. London: Sage.

Field, A. (2013). *Discovering statistics using IBM SPSS statistics*. 4th ed. London: Sage.

Finch, N. (2006). Childcare and parental leave. In Bradshaw, J. and Hatland, A. (Eds.). *Social policy, employment and family change in comparative perspective*. Cheltenham: Edward Elgar.

Fortin, N.M. (2005). Gender role attitudes and the labour market outcomes of women across OECD countries. *Oxford Review Economic Policy*, 21(3), 416–438.

Fraser, N. (1987). Women, welfare, and the politics of need interpretation. *Hypatia: A Journal of Feminist Philosophy*, 2(1), 103-131.

Fraser, N. (1994). After the family wage: gender equality and the welfare state. *Political Theory*, 22(4), 591–618.

Frees, E.W. (2004). *Longitudinal and panel data: analysis and applications in the social sciences*. Cambridge: Cambridge University Press.

Gauther, A.H. (2002). Family policies in industrialized countries: is there convergence? *Population,* 57(3), 447-474.

Gauthier, A.H. (2011a). *Comparative family policy database, version III.* [Computer file]. Rostock: Netherlands Interdisciplinary Demographic Institute and Max Planck Institute for Demographic Research (distributors). Available at: www.demogr.mpg.de. [Accessed 21st July 2014].

Gauthier, A.H. (2011b). *A brief history of maternity, parental and childcare leave schemes in OECD countries.* [Online]. Rostock: Netherlands Interdisciplinary Demographic Institute and Max Planck Institute for Demographic Research (distributors). Available at: www.demogr.mpg.de. [Accessed 21st July 2014].

Gauthier, A.H. (2011c). *Documentation for the comparative family benefits database 1960-2008.* [Online]. Rostock: Netherlands Interdisciplinary Demographic Institute and Max Planck Institute for Demographic Research (distributors). Available at: www.demogr.mpg.de. [Accessed 21st July 2014].

Goldin, C. (1990). *Understanding the gender gap*. Oxford: Oxford University Press.

Goldin, C. (1994). The U-shaped female labour force function in economic development and economic history. *NBER Working Paper,* no. 4707. Cambridge: National Bureau of Economic Research.

Gornick, J.C. (1999a). Gender equality in the labour market. In D. Sainsbury, (Ed.). *Gender and welfare state regimes*. Oxford: Oxford University Press.

Gornick, J.C. (1999b). Gender equality in the labour market: women's employment and earnings. *Luxembourg Income Study Working Paper,* no. 206. Luxembourg: Luxembourg Income Study.

Gornick, J.C. and Jäntti, M. (2010a). Child poverty in upper-income countries: lessons from the Luxembourg Income Study. In S.B. Kamerman, S. Phipps, and A. Ben-Arieh, (Eds.). *From child welfare to child well-being*. New York: Springer.

Gornick, J.C. and Jäntti, M. (2010b). Women, poverty, and social policy regimes: a cross-national analysis. *Luxembourg Income Study Working Paper,* no. 534. Luxembourg: Luxembourg Income Study.

Gornick, J.C. and Jäntti, M. (2012). Child poverty in cross-national perspective: lessons from the Luxembourg Income Study. *Children and Youth Services Review*, *34*(3), 558-568.

Gornick, J.C. and Meyers, M.K. (2003). *Families that work: policies for reconciling parenthood and employment*. New York: Russell Sage Foundation.

Gornick, J.C., Meyers, M.K. and Ross, K.E. (1997). Supporting the employment of mothers: policy variation across fourteen welfare states. *Journal of European Social Policy*, 7(1), 45-70.

Gornick, J.C., Meyers, M.K. and Ross, K.E. (1998). Public policies and the employment of mothers: a cross-national study. *Social Science Quarterly*, 79(1), 35 –53.

Gustafsson, S.S., Wetzels, C.M.M.P., Vlasblom, J.D. and Dex, S. (1996). Women's labor force transitions in connection with childbirth: a panel data comparison between Germany, Sweden and Great Britain. *Journal of Population Economics*, 9(3), 223-246.

Gutiérrez-Domènech, M. (2005). Employment after motherhood: a European comparison. *Labour Economics*, 12(1), 99-123.

Gwartney, J., Lawson, R. and Hall, J. (2013). *Economic freedom of the World: 2013 annual report*. Vancouver: Fraser Institute.

Haas, L. (2003). Parental leave and gender equality: lessons from the European Union. *Review of Policy Research*, *20*(1), 89-114.

Haas, L. and Rostgaard, T. (2011). Fathers' rights to paid parental leave in the Nordic countries: consequences for the gendered division of leave. *Community, Work and Family*, 14(2), 177-195.

Haataja, A. (2009). Fathers' use of paternity and parental leave in the Nordic countries. *The Social Insurance Institution of Finland (KELA) Research Department online working papers,* no. 2/2009*.* Helsinki: The Social Insurance Institution of Finland.

Hanratty, M. and Trzcinski, E. (2009). Who benefits from paid family leave? Impact of expansions in Canadian paid family leave on maternal employment and transfer income. *Journal of Population Economics*, 22(3), 693-711.

Hantrais, L. (2004). *Family policy matters*. Bristol: Policy Press.

Hantrais, L. (2009). *International comparative research: theory, methods and practice*. Palgrave MacMillan: Basingstoke.

Hartmann, H.I. (1976). Capitalism, patriarchy and job segregation by sex. *Signs: Journal of Women in Culture and Society*, 1(3:2), 137-69.

Hegewisch, A. and Gornick, J.C. (2011). The impact of work-family policies on women's employment: a review of research from OECD countries. *Community, Work and Family*, 14(2), 119-138.

Held, D., McGrew, A., Goldblatt, D. and Perraton, J. (1999). *Global transformations: concepts, evidence and arguments*. Bristol: Polity Press.

Hernes, H. (1987). *Welfare state and woman power*. Oslo: Norway University Press.

Hobson, B. (2005). Feminist theorizing and feminisms in political sociology. In T. Janoski, R.R Alford, A.M. Hicks, and M.A. Schwartz, (Eds.). *The handbook of political sociology: states, civil societies and globalization*. Cambridge: Cambridge University Press.

Honaker, J. and King, G. (2010). What to do about missing values in time-series cross-section data. *American Journal of Political Science*, 54(2), 561-581.

Horsfall, D. (2011). *From competition state to competition states? An empirical exploration*. Unpublished: University of York. PhD.

Hsiao, C. (2003). *Analysis of panel data*. Cambridge: Cambridge University Press.

Huber, E. and Stephens, J.D. (2000). Partisan governance, women's employment, and the social democratic service state. *American Sociological Review*, 65(3), 323-342.

Huber, J. and Spitze, G. (1981). Wives' employment, household behaviors, and sex-role attitudes. *Social Forces*, 60(1), 150-169.

Im, K.S., Peseran, M.H. and Shin, Y. (2003). Testing for unit roots in heterogeneous panels. *Journal of Econometrics*, 115(1), 54-74.

International Labour Organization (ILO). (2011). *Key Indicators of the labour market (KILM).* 7th edn*.* Geneva: International Labour Organization.

International Labour Organization (ILO). (2014). *LABORSTA database.* [Online]. Geneva: International Labour Organization. Available at: http://laborsta.ilo.org/applv8/data/c1e.html [Accessed 28th April 2014].

Jacobs, R., Smith, P. and Goddard, M. (2004). Measuring performance: an examination of composite performance indicators. *Centre for Health Economics Technical Paper Series 29*. York: Centre for Health Economics.

Jacobsen, J.P. (1998). *The economics of gender.* 2nd ed. Oxford: Blackwell

Jaumotte, F. (2003). Female labour force participation: past trends and main determinants in OECD countries. *OECD Economics Working Papers,* no. 376. Paris: Organisation for Economic Co-operation and Development.

Jo, N.K. (2011). Between the cultural foundations of welfare and welfare attitudes: the

possibility of an in-between level conception of culture for the cultural analysis of welfare. *Journal of European Social Policy,* 21(1), 5-19.

Joesch, J.M. (1997). Paid leave and the timing of women's employment before and after birth. *Journal of Marriage and Family*, 59(4), 1008-1021.

Joshi, H. and Newell, M-L. (1987). Pay differences between men and women: longitudinal evidence from the 1946 birth cohort. *C.E.P.R Discussion Paper,* no. DP156. London: Centre for Economic Policy Research.

Kahn, L.M. (2005). The impact of employment protection mandates on demographic temporary employment patterns: international microeconomic evidence. *IZA Discussion paper series,* no. 1548. Bonn, IZA.

Karamessini, M., & Rubery, J. (Eds.). (2013). *Women and austerity: the economic crisis and the future for gender equality*. London: Routledge.

Karemessini, M., Lehto, A.M., Mairhuber, I., Smith, M. and Figueiredo, H. (2002). Indicators of gender equality in employment and unemployment. In J. Rubery, C. Fagan, D. Grimshaw, H. Figueiredo, and M. Smith, (Eds.). *Indicators on gender equality in the European employment strategy.* [Online]. Available: https://research.mbs.ac.uk/ european-employment/Portals/0/docs/gendersocial/Indicators2001%28final%29.pdf [Accessed 28th Feb 2012].

Kasza, G.J. (2002). The illusion of welfare 'regimes'. *Journal of Social Policy*, 31(2), 271-287.

Keck, W. and Saraceno, C. (2011). Towards an integrated approach for the analysis of gender equity in policies supporting paid work and care responsibilities. *Demographic Research,* 25(11), 371-406.

Kennet, P. (2001). *Comparative social policy: theory and research*. Buckingham: Open University Press.

Kenworthy, L. (2007). Toward improved use of regression in macro-comparative analysis. *Comparative Social Research*, 24(1), 343-350.

King, G., Honaker, J., Joseph, A., and Scheve, K. (1998). List-wise deletion is evil: what to do about missing data in political science. *Annual Meeting of the American Political Science Association 1998,* Boston.

King, G., Keohane, R.O. and Verba, S. (1994). *Designing social inquiry: scientific inference in qualitative research*. Princeton: Princeton University Press.

Kittel, B. and Winner, H. (2005). How reliable is pooled analysis in political economy? The globalization-welfare state nexus revisited. *European Journal of Political Research*, 44(2), 269-293.

Klasen, S. (1999). Does gender inequality reduce growth and development? Evidence from cross-country regressions. *World Bank Gender and Development Working Paper Series*, no. 7. Washington: World Bank.

Knijn, T. and Saraceno, C. (2010). Changes in the regulation of responsibilities towards childcare needs in Italy and the Netherlands: different timing, increasingly different approaches. *Journal of European Social Policy*, 20(5), 444-455.

Korpi, W. (2000). Faces of inequality: gender, class and patterns of inequalities in different types of welfare states. *Social Politics: International Studies in Gender, State and Society*, 7(3), 127-191.

Korpi, W. (2010). Class and gender inequalities in different types of welfare states: the Social Citizenship Indicator Program (SCIP). *International Journal of Social Welfare*, *19*(s1), S14-S24.

Korpi, W. and Palme, I. (2003). New politics and class politics in the context of austerity and globalization: welfare state regress in 18 countries, 1975-95. *American Political Science Review*, 97(3), 425-446.

Korpi, W., Ferrarini, T. and Englund, S. (2013). Women's opportunities under different family policies constellations: gender, class and inequality tradeoffs in Western countries re-examined. *Social Politics: International Studies in Gender, State and Society*, 20(1), 1-40.

Lachance-Grzela, M. and Bouchard, G. (2010). Why do women do the lion's share of housework? A decade of research. *Sex Roles*, 63(11-12), 767-780.

Landman, T. (2000). *Issues and methods in comparative politics: an introduction*. London: Routledge.

Lefebvre, P. and Merrigan, P. (2008). Child-care policy and the labor supply of mothers with young children: a natural experiment from Canada. *Journal of Labor Economics*, 26(3), 519-548.

Leira, A. (1992). *Welfare states and working mothers: the Scandinavian experience*. New York: Cambridge University Press.

Leitner, S. (2003). Varieties of familialism. The caring function of the family in comparative perspective*. European societies*, 5(4), 353-375.

Leitner, S. (2010). Germany outpaces Austria in childcare policy: the historical contingencies of 'conservative' childcare policy. *Journal of European Social Policy*, 20(5), 444-455.

León, A. (2004). The effect of education on fertility: evidence from compulsory schooling laws. [Online]. Department of Economics, University of Pittsburgh, Pittsburgh, PA. Available at: http://core.kmi.open.ac.uk/download/pdf/6388153.pdf [Accessed 27th Jun 2014].

Lewis, J. (1992). Gender and development of welfare regimes. *Journal of European Social Policy*, 2(3), 159-173.

Lewis, J. (2009). *Work-family balance, gender and policy*. Cheltenham: Edward Elgar.

Lewis, J. and Campbell, M. (2007). Work/family balance policies in the UK since 1997: a new departure? *Journal of Social Policy*, 36(3), 365-381.

Lewis, J., Knijn, T., Martin, C. and Ostner, I. (2008). Patterns of development in work/family reconciliation policies for parents in France, Germany, the Netherlands, and the UK in the 2000s. *Social Politics: International Studies in Gender, State and Society*, 15(3): 261-286.

Lijphart, A. (1971). Comparative politics and the comparative method. *American Political Science Review*, 65(3), 682-93.

Lips, H.M. (2013). The gender pay gap: challenging the rationalizations. Perceived equity, discrimination and the limits of human capital models. *Sex Roles*, 68(3-4), 169-185.

Lister, R. (1997). *Citizenship: feminist perspectives*. London: MacMillan Press

Little, R. J. (1992). Regression with missing X's: a review. *Journal of the American Statistical Association*, *87*(420), 1227-1237.

Lohmann, H. (2011). *Assessing family policies in a comparative perspective*. Paper presented at the Expert Group Meeting 'Assessing family policies: confronting family poverty and social exclusion & ensuring work family balance'. 1-3 June 2011. United Nations Department of Economic and Social Affairs, Division for Social Policy and Development, New York.

Lohmann, H., Peter, F.H., Rostgaard, T. and Spiess, K. (2009). Towards a framework for assessing family policies in the EU. *OECD Social, Employment and Migration Working Papers,* no. 88. Paris: OECD.

Loufti, M.F. (2001). Women, gender and work: an overview. In M.F. Loufti, (Ed.). *Women, gender and work: what is equality and how do we get there?* Geneva: International Labour Organization.

Lunding, D., Mörk, E. and Öckert, B. (2008). How far can reduced childcare prices push female labour supply? *Labour Economics*, 15(4), 647-659.

Luxembourg Income Study Database (LIS). (2014). *Luxembourg Income Study Database* (multiple countries; 1985-2010). [Online]. Luxembourg: Luxembourg Income Study. Available at: www.lisdatacenter.org [Accessed 16th May 2014].

MacKinnon, C.A. (1989). *Toward a feminist theory of the state*. Cambridge: Harvard University Press.

MacIntosh, M. (1978). The state and the oppression of women. In A. Kuhn, and A. Wolpe, (Eds.). *Feminism and materialism: women and modes of production*. London: Routledge.

Macran, S., Joshi, H. and Dex, S. (1996). Employment after childbearing: a survival analysis. *Work, Employment and Society*, 10(2), 273-296.

Maldonado, L. C. and Nieuwenhuis, R. (2014). Family policies and single parent poverty in 18 OECD countries, 1978-2008. *Luxembourg Income Study Working Paper Series,* no. 622. Luxembourg: Luxembourg Income Study.

Mandel, H. (2009). Configurations of gender inequality: the consequences of ideology and public policy. *The British Journal of Sociology*, 60(4), 693-719.

Mandel, H. (2011). Rethinking the paradox: tradeoffs in work-family policies and patterns of gender inequality. *Community, Work and Family*, 14(2), 159-176.

Mandel, H. (2012). Winners and losers: the consequences of welfare state policies for gender wage inequality. *European Sociological Review,* 28(2), 241-262.

Mandel, H. and Semyonov, M. (2005). Family policies, wage structures, and gender gaps: sources of earnings inequality in 20 countries. *American Sociological Review*, 70(6), 949-967.

Mandel, H. and Semyonov, M. (2006). A welfare state paradox: state interventions and women's employment in 22 countries. *American Journal of Sociology*, 111(6), 1910-1949.

Mandel, H. and Shalev, M. (2009). How welfare states shape the gender pay gap: a theoretical and comparative analysis. *Social Forces*, 87(4), 1873-1911.

Marinetto, M. (2007). *Social theory, the state and modern society: the state in contemporary social thought*. Maidenhead: Open University Press.

Marinova, J., Plantenga, J., & Remery, C. (2010). Gender diversity and firm performance: Evidence from Dutch and Danish boardrooms. *Tjalling C. Koopmans Institute Discussion Paper Series*, *10*(03), 1-28.

Mathews, T.J. and Ventura, S.J. (1997). Birth and fertility rates by educational attainment: United States, 1994. *Monthly Vital Statistics Report*, 45(10), 1-20.

Mätzke, M. and Ostner, I. (2010). Introduction: change and continuity in recent family policies. *Journal of European Social Policy*, 20(5): 387-398.

McMahon, A. M. (2011). Does workplace diversity matter? A survey of empirical studies on diversity and firm performance, 2000-09. *Journal of Diversity Management (JDM)*, *5*(2).

Melhuish, E.C. (2004). *A literature review of the impact of early years provision on young children, with emphasis given to children from disadvantaged backgrounds*. London: Institute for the Study of Children, Families and Social Issues.

Mincer, J. (1962). Labour force participation of married women. In National Bureau of Economic Research (NBER), (Eds.). *Aspects of labor economics*. Princeton: Princeton University Press.

Mincer, J. (1984). Inter-country comparisons of labour force trends and of related developments: an overview. *NBER Working Paper Series,* no. 1438. Cambridge: National Bureau of Economic Research.

Mincer, J. and Polachek, S.W. (1974). Family investments in human capital: earnings of women. *Journal of Political Economy*, 82(2), 76-108.

Mischke, M. (2011). Types of public family support: a cluster analysis of 15 European countries. *Journal of Comparative Policy Analysis*, 13(4), 443-456.

Misra, J., Budig, M. and Böckmann, I. (2008). *Work-family policies and the wage penalty to mothers.* Working paper prepared for the RC19 Network meeting. September 2008. Stockholm, Sweden.

Misra, J., Budig, M. and Böckmann, I. (2011). Work-family policies and the effects of children on women's employment hours and wages. *Community, Work and Family*, 14(2), 139-157.

Misra, J., Budig, M and Moller, S. (2006). Reconciliation policies and the effects of motherhood on employment, earnings and poverty. *Luxembourg Income Study Working Paper Series,* no. 429*.* Luxembourg: Luxembourg Income Study.

Moller, S. and Misra, J. (2005). Familialism and welfare regimes: poverty, employment and family policies. *Luxembourg Income Study Working Paper Series,* no. 399*.* Luxembourg:

Luxembourg Income Study.

Moss, P. and Wall, K. (eds.). (2007). International review of leave policies and related research 2007. *Employment Relations Research Series*, no. 80. London: Department for Business, Enterprise and Regulatory Reform.

Moss, P. (ed.). (2010). International review of leave policies and related research 2010. *Employment Relations Research Series*, no. 115. London: Department for Business, Innovation and Skills.

Mutual Information System on Social Protection (MISSOC). (2013). *MISSOC Comparative Tables.* [Online]. Brussels: European Commission. Available at: http://www.missoc.org/MISSOC/INFORMATIONBASE/COMPARATIVETABLES/MISSOCDATABASE/comparativeTableSearch.jsp [Accessed 16th Dec 2013].

Myles, J. and Quadagno, J. (2002). Political theories of the welfare state. *Social Service Review*, 70(1), 34-57.

Naldini, M., & Saraceno, C. (2008). Social and family policies in Italy: not totally frozen but far from structural reforms. *Social Policy and Administration*, *42*(7), 733-748.

Nardo, M., Saisana, M, Saltelli, A, Tarantola, S. Hoffman, A, and Giovanni, E. (2005). Handbook on constructing composite indicators: methodology and user guide. *OECD Statistics Working Papers,* no. 2005:3. Paris: OECD.

Naumann, I., McLean, C., Koslowski, A., Tisdall, K. (2013). *Early childhood education and care provision: international review of policy, delivery and funding: final report*. Centre for Research of Families and Relationships: The University of Edinburgh.

Naz, G. (2004). The impact of cash-benefit reform on parents' labour force participation. *Journal of Population Economics*, 17(2): 369-383.

Nelson, B. (1990). The origins of the two-channel welfare state: workmen's compensation and mothers' aid. In L. Gordon, (Ed.). *Women, the state, and welfare*. London: University of Wisconsin Press.

Nepomnyaschy, L. and Waldfogel, J. (2007). Paternity leave and fathers' involvement with their young children. *Community, Work and Family*, 10(4), 427-453.

Nermo, M. (2000). Models of cross-national variation in occupational sex segregation. *European Societies*, 2(3), 295-333.

Nieuwenhuis, R. (2014). *Family policy outcomes: combining institutional and demographic explanations of women's employment and earnings inequality in OECD countries, 1975-2005*. Unpublished: University of Twente. PhD.

Nieuwenhuis, R., Need, A. and van der Kolk, H. (2012). Institutional and demographic explanations of women's employment in 18 OECD countries, 1975 – 1999. *Journal of Marriage and Family*, 74(3), 614-630.

O'Connor, J. (1993). Gender, class and citizenship in comparative analysis of welfare state regimes: theoretical and methodological issues. *British Journal of Sociology*, 44(3), 501–518.

O'Connor, J. (1996). From women in the welfare state to gendering welfare state regimes.

Current Sociology, 44(2), 1-124.

Okin, S.M. (1989). *Justice, gender and the family*. New York: Basic Books.

Olivetti, C. and Petrongolo, B. (2008). Unequal pay or unequal employment? A cross-country analysis of gender gaps. *Journal of Labor Economics*, 26(4), 621-654.

Organisation for Economic Co-operation and Development (OECD). (1998). *Benefit systems and work incentives 1998*. Paris: OECD.

Organisation for Economic Co-operation and Development (OECD). (2004). *OECD handbook for internationally comparative educational statistics: concepts, standards, definitions and classifications*. Paris: OECD.

Organisation for Economic Co-operation and Development (OECD). (2005*). Employment outlook 2005.* Paris: OECD

Organisation for Economic Co-operation and Development (OECD). (2007). *Babies and bosses: reconciling work and family life: a synthesis of findings for OECD countries*. Paris: OECD.

Organisation for Economic Co-operation and Development (OECD). (2012a). *OECD Online Education Database.* [Online]. Paris: OECD. Available at: http://www.oecd.org/edu/database.htm [Accessed: 27th Feb 2012].

Organisation for Economic Co-operation and Development (OECD). (2012b). *OECD Social Expenditure Database*. 2012 Edition. [Online]. Paris: OECD. Available at: http://www.oecd.org/social/expenditure.htm [Accessed: 27th February 2012].

Organisation for Economic Co-operation and Development (OECD). (2013a). *OECD Employment Database*. [Online]. Paris: OECD. Available at: http://www.oecd.org/els/emp/onlineoecdemploymentdatabase.htm [Accessed: 22nd November 2013].

Organisation for Economic Co-operation and Development (OECD). (2013c). *OECD Family Database.* [Online]. Paris: OECD. Available at: http://www.oecd.org/social/soc/oecdfamilydatabase.htm [Accessed: 21st November 2013].

Organisation for Economic Co-operation and Development (OECD). (2013d). *OECD Statistics Extracts*. [Online]. Paris: OECD. Available at: http://stats.oecd.org/ [Accessed: 25th Nov 2013].

Organisation for Economic Co-operation and Development (OECD). (2013e). *Taxing Wages: Comparative Tables.* [Online]. Paris: OECD. Available at: http://www.oecd.org/ctp/tax-policy/taxing-wages-comparative-tax-burden-indicators.htm [Accessed 27th Nov 2013].

Organisation for Economic Co-operation and Development (OECD). (2013f). *Glossary of statistical terms.* [Online]. Paris: OECD. Available at: http://stats.oecd.org/glossary/detail.asp?ID=730 [Accessed 21st Oct 2013].

Organisation for Economic Co-operation and Development (OECD). (2013g). *Benefits and wages: country specific information* [Online]. Paris: OECD. Available at: http://www.oecd.org/els/soc/ benefitsandwagescountryspecificinformation.htm

[Accessed 27st Nov 2013].

Orloff, A.S. (1993). Gender and social rights of citizenship: the comparative analysis of gender relations and welfare states citizenship in the welfare state. *American Sociological Review*, 58(3), 303-328.

Orloff, A.S. (1996). Gender in the welfare state*. Annual Review of Sociology,* 22, 51-78.

Orloff, A.S. (2002). Women's employment and welfare regimes: globalization, export orientation and social policy in Europe and North America. *United Nations Research Institute Social Policy and Development Programme (UNRISD) Paper,* no. 12*.* Geneva: UNRISD.

Osborne, J. W. (2013). *Best practices in data cleaning: a complete guide to everything you need to do before and after collecting your data*. London: Sage.

Ostner, I. (2010). Farewell to the family as we know it: family policy change in Germany. *German Policy Studies*, 6(1), 211-244.

Ostner, I. and Lewis, J. (1995). Gender and the evolution of European social policies. In S. Leibfried and P. Pierson, (Eds.). *European social policy*. Washington: The Brookings Institution.

Oxley, H., Dang, T., Forster, M. and Pellizzari, M. (1999). Income inequalities and poverty among children and households with children in selected OECD countries. In K. Vleminckz and T. Smeeding, (Eds.). *Child well-being, child poverty and child policy in modern nations*. Bristol: Policy Press.

Pampel, F.C. and Tanaka, K. (1986). Economic development and female labour force participation: a reconsideration. *Social Forces*, 64(3), 599-619.

Park, H. (2008). Public policy and the effect of sibship size on educational achievement: a comparative study of 20 countries. *Social Science Research*, 37(3), 874-887.

Parkman, A.M. (2004). Bargaining over housework: the frustrating situation of secondary wage earners. *The American Journal of Economics and Sociology*, 63(4), 765-794.

Parulo, P., Saisana, M. and Saltelli, A. (2013). Ratings and rankings: voodoo or science? *Journal of the Royal Statistics Society: Series A (Statistics in Society)*, 176(3), 609-634.

Pennings, P., Keman, H. and Kleinnijenhuis, J. (1999). *Doing research in political science: an introduction to comparative methods and statistics*. London: Sage.

Perrons, D. (1995). Economic strategies, welfare regimes and gender inequality in employment in the European Union. *European Union and Regional Studies*, 2(2), 99–120.

Pesaran, M. and Smith, R. (1995). Estimating long-run relationships from dynamic heterogeneous panels. *Journal of Econometrics*, 68(1), 79-113.

Pettit, B. and Hook, J.L. (2005). The structure of women's employment in comparative perspective. *Social Forces*, 84(2), 779-801.

Pettit, B. and Hook, J.L. (2009). *Gendered trade-offs: family, social policy and economic inequality in twenty-one countries*. New York: Russell Sage Foundation.

Pfau-Effinger, B. (1998). Gender culture and the gender arrangement: a theoretical framework for cross-national research. *Innovation: The European Journal of Social Sciences,* 11(2), 147–166.

Pfau-Effinger, B. (2004). *Development of culture, welfare states and women's employment in Europe*. Aldershot: Ashgate.

Plantenga, J. (1995). Labour market participation of women in the EU. In A. Van Doorne-Huiskes, S. Van Hoof and E. Roelofs, (Eds.). *Women and the European labour market*. London: Paul Chapman Publishing.

Plantenga, J. and Remery, C. (2005). *Reconciliation of work and private life: a comparative review of thirty European countries*. Luxembourg: Office for Official Publications of the European Communities.

Plantenga, J., Figueiredo, H., Remery, C. and Smith, M. (2003). *Towards an EU gender equality index: feasibility study commissioned by and presented to the European commission.* [Online]. Utrecht School of Economics, Utrecht. Available at: https://research.mbs.ac.uk/european-employment/Portals/0/docs/gendersocial/EU%20index%20final%20report%20December%202003.pdf [Accessed 26th Nov 2014].

Plantenga, J. and Tijdens, K. (1995). Segregation in the EU: developments in the 1980s. In A. Van Doorne-Huiskes, S. Van Hoof, and E. Roelofs, (Eds.). *Women and the European labour market*. London: Paul Chapman Publishing.

Plümper, T., and Troeger, V. E. (2007). Efficient estimation of time-invariant and rarely changing variables in finite sample panel analyses with unit fixed effects. *Political Analysis*, *15*(2), 124-139.

Plümper, T., Troeger, V.E. and Manow, P. (2005). Panel data analysis in comparative politics: linking method to theory. *European Journal of Political Research*, 44(2), 327-354.

Polachek, S.W. (1981). Occupational self-selection: a human capital approach to sex differences in occupational structure. *Review of Economics and Statistics*, 63(1), 60-69.

Polachek, S.W. (1995). Human capital and the gender earnings gap: a response to feminist critiques. In E. Kuiper, and J. Sap, (Eds.). *Out of the margin: feminist perspectives on economics*. London: Routledge.

Polachek, S.W. (2004). How the human capital model explains why the gender wage gap narrowed. *IZA discussion paper series,* no. 1102. Bonn: IZA.

Pontusson, J. (2007). Methods in comparative political economy. *Comparative Social Research*, 24, 325-333.

Pressman, S. (2011). Policies to reduce child poverty: child allowances versus tax exemptions for children. *Luxembourg Income Study Working Paper Series,* no. 558. Luxembourg: Luxembourg Income Study.

Pronzato, C. (2007). Return to work after childbirth: does parental leave matter in Europe? *Institute for Social and Economic Research Working Paper Series,* no. 2007-30. Colchester: Institute for Social and Economic Research.

Rabe-Hesketh, S. and Skrondal, A. (2012). *Multilevel and longitudinal modeling using Stata*. 3rd ed. College Station: STATA press.

Ragin, C. C. (1987). *The comparative method: moving beyond qualitative and quantitative strategies.* Berkeley: University of California Press.

Randall, V. (2000). Childcare policy in the European states: limits to convergence. *Journal of European Public Policy*, 7(3), 346-368.

Reskin, B.F. and Bielby, D.D. (2005). A sociological perspective on gender and career outcomes. *Journal of Economic Perspectives*, 19(1), 71-86.

Riedmann, A., Bielenski, H., Szczurowska, T., and Wagner, A. (2006). *Working time and work–life balance in European companies: establishment survey on working time 2004-2005*. Luxembourg: Office for Official Publications of the European Communities.

Rogers, W. (1993). Regression standard errors in cluster samples. *Stata Technical Bulletin*, 13, 19-23.

Rønsen, M. and Sundström, M. (1996). Maternal employment in Scandinavia: a comparison of the after-birth employment activity of Norwegian and Swedish women. *Journal of Population Economics*, 9(3), 267-285.

Rønsen, M. and Sundström, M. (2002). Family policy and after-birth employment among new mothers: a comparison of Finland, Norway and Sweden. *European Journal of Population*, 18(2), 121-152.

Rossin, M. (2011). The effects of maternity leave on children's birth and infant health outcomes in the United States. *Journal of Health Economics*, *30*(2), 221-239.

Rubery, J., Fagan, C., Grimshaw, D., Figueiredo, H. and Smith, M. (2002). *Indicators on gender equality in the European employment strategy.* [Online]. European Commission's expert group on gender and employment. Available: http://research.mbs.ac.uk/ european-employment/Portals/0/docs/gendersocial /Indicators2001(final).pdf [Accessed: 17th Aug 2011].

Rubery, J., Humphries, J., Fagan, C., Grimshaw, D. and Smith, D. (2003). Equality as a productive factor. In B. Bruchell, S. Deakin, M. Michie, and J. Rubery, (Eds.). *Systems of production: markets, organisations and performance*. London: Routledge.

Rubinson, C. and Ragin, C.C. (2007). New methods for comparative research? *Comparative Social Research*, 24, 373-389.

Ruhm, C.J. (1998). The economic consequences of parental leave mandates: lessons from Europe. *The Quarterly Journal of Economics*, 113(1), 285-317.

Ruuskanen, O. (2006). Time use during the parental leave and the return to employment. *The Research Institute of the Finnish Economy Discussion Papers,* no. 1060. Helsinki: The Research Institute of the Finnish Economy.

Sainsbury, D. (1996). *Gender, equality and welfare states*. Cambridge: Cambridge University Press.

Sainsbury, D. (1999). Introduction. In D. Sainsbury, (Ed.). *Gender and welfare state regimes*. Oxford: Oxford University Press.

Saul, J.M. (2003). *Feminism: issues and arguments*. Oxford: Oxford University Press.

Saxonberg, S. (2013). From defamilialization to degenderization: toward a new welfare typology. *Social Policy and Administration*, 47(1), 26-49.

Schafer, J. L., and Graham, J. W. (2002). Missing data: our view of the state of the art. *Psychological methods*, *7*(2), 147.

Schönberg, U. and Ludstech, J. (2007). Maternity leave legislation, female labor supply, and the family wage gap. *IZA Discussion Papers,* no. 2699. Bonn, IZA.

Schultz, T. (1960). Investment in human capital. *American Economic Review*, 51(1), 1-17.

Schutz, H., Speckesser, S. and Schmid, G. (1998). Benchmarking labour market performance and labour market policies: theoretical foundations and application*. WZB Discussion Paper,* no. FS I 98–205. Berlin: WZB Berlin Social Science Centre.

Schütz, G. (2009). Does the quality of pre-primary education pay off in secondary school? An international comparison using PISA 2003. *IFO Working Paper*, no. 68. Munich: Leibniz Institute for Economic Research.

Scott, J., Dex, S., Joshi, H, Purcell, K. and Elias, P. (2008). Introduction: changing lives and new challenges. In J. Scott, S. Dex, H. Joshi, (Eds.). *Women and employment: changing lives and new challenges*. Cheltenham: Edward Elgar.

Seleeib-Kaiser, M. and Toivonen, T. (2011). Between reforms and birth rates: Germany, Japan, and family policy discourse. *Social Politics,* 18(3), 1-30.

Shalev, M. (2007a). Limits and alternatives to multiple regression in comparative research. *Comparative Social Research*, 24, 261-308.

Shalev, M. (2007b). Rejoinder: affirming limits and defending alternatives to multiple regression, *Comparative Social Research*, 24, 391-409.

Shalev, M. (2008). Class divisions among women, *Politics and Society*, 36(3), 421-444.

Siaroff, A. (1994). Work, welfare and gender equality: a new typology. In D. Sainsbury, (Ed.). *Gendering welfare states*. London: SAGE.

Smith, M. and Bettio, F. (2008). *Analysis note: the economic case for gender equality.* [Online]. European Commission's network of experts on employment and gender equality issues. Available at: http://www.arifl.regione.lombardia.it/shared/ccurl/ 1010/263/ECO-CASE-final_gender_equality,0.pdf [Accessed 27th April 2013].

Starke, P. (2006). The politics of welfare state retrenchment: a literature review. *Social Policy and Administration*, 40(1), 104-120.

Stevens, J.P. (1984). Outliers and influential data points in regression analysis. *Psychological Bulletin*, *95*(2), 334.

Stier, H., Lewin-Epstein, N. and Braun, M. (2001). Welfare regimes, family-supportive policies, and women's employment along the life-course. *American Journal of Sociology*, 106(5), 1731–1760.

Stock, J. H. and Watson, M.W. (2007). *Introduction to econometrics.* 2nd ed. Boston: Pearson Education.

Tanaka, S. and Waldfogel, J. (2007). Effects of parental leave and work hours on fathers' involvement with their babies. *Community, Work and Family*, 10(4), 409-426.

Thévenon, O. (2011). Family policies in OECD countries: a comparative analysis. *Population and Development Review,* 37(1), 57-87.

Thévenon, O. (2013). Drivers of female labour force participation in the OECD. *OECD Social, Employment and Migration Working Papers,* no. 145. Paris: OECD

Thévenon, O. and Solaz, A. (2013). Labour market effects of parental leave policies in OECD countries. *OECD Social, Employment and Migration Working Papers,* no. 141. Paris: OECD.

Thévenon, O., Ali, N., Adema, W., Salvi del Pero, A. (2012). Effects of reducing gender gaps in education and labour force participation on economic growth in the OECD. *OECD Social, Employment and Migration Working Papers,* no. 138. Paris: OECD.

Thornton, A. and Young-DeMarco, L. (2001). Four decades in trends in attitudes toward family issues in the United States: the 1960s through the 1990s. *Journal of Marriage and Family*, 63(4), 1009-1037.

Tranby, E. (2010). *Family policies or labour markets? Women's employment inequality in 14 welfare states from 1960 to 2008*. Unpublished: University of Minnesota. PhD.

Tzannatos, Z. (1999). Women and labour market changes in the global economy: growth helps, inequalities hurt and public policy matters. *World Development Review*, 27(3), 551-569.

United Nations (UN). (2015). *ISIC Rev. 3: detailed structure and explanatory notes* [Online] Available at: http://unstats.un.org/unsd/cr/registry/regcst.asp?Cl=2&Lg=1 [Accessed 30th May 2015]

United Nations Educational, Scientific and Cultural Organisation (UNSECO). (2006). *International standard classification of education: ISCED 1997*. Montreal: UNSECO Institute for Statistics.

Uunk, W., Kalmijn, M. and Muffels, R. (2005). The impact of young children on women's labour supply: a reassessment of institutional effects. *Acta Sociologica*, 48(1), 41-62.

Van Dijk, L. (2001). Macro changes in public childcare provision, parental leave and women's employment: an international comparison. In T. Van der Lippe, and L. Van Dijk, (Eds.). *Women's employment in a comparative perspective*. New York: Aldine de Gruyter.

Van der Lippe, T. and Van Dijk, L. (2002). Comparative research on women's employment. *Annual Review of Sociology*, 28, 221–41.

Van der Meer, T., Te Grotenhuis, M. and Pelzer, B. (2010). Influential cases in multilevel modeling: a methodological comment. *American Sociological Review*, *75*(1), 173-178.

Walby, S. (1990). *Theorizing patriarchy*. Oxford: Blackwell.

Waldfogel, J. (1999). The impact of the family and medical leave act. *Journal of Policy Analysis and Management*, 18(2), 281-302.

Waldfogel, J., Higuchi, Y. and Abe, M. (1999). Family leave policies and women's retention after childbirth: evidence from the United States, Britain, and Japan. *Journal of Population Economics*, 12(4), 523-545.

Warren, T. (2007). Conceptualizing breadwinning work. *Work, Employment and Society,* 21(2), 317-336.

Wawro, G.J, Samii, C. and Kristensen, I.P. (2011). *On the use of fixed effects estimators for time-series cross-section data.* Unpublished paper: Columbia University.

West, C. and Zimmerman, D.H. (1987). Doing gender. *Gender and Society*, 1(2): 125-151.

Wetterberg, C.C. and Melby, K. (2008). The claim of economic citizenship: the concept of equality in a historical context. In K. Melby, A.B. Ravn, and C.C. Wetterberg, (Eds.). *Gender equality and welfare politics in Scandinavia: the limits of political ambition?* Bristol: Policy Press.

Wilson, E. (1977). *Women and the welfare state*. London: Tavistock.

Wilson, S.E. and Butler, D.M. (2007). A lot more to do: the sensitivity of time-series cross-section analyses to simple alternative specifications. *Political Analysis,* 15(2), 101-123.

Winegarden, C.R. and Bracy, P.M. (1995). Demographic consequences of maternal leave programs in industrial countries: evidence from fixed-effects models. *Southern Economic Journal,* 61(4), 1020-1035.

Wooldridge, J.M. (2002). *Econometric analysis of cross-section and panel data*. London: MIT Press.

Wooldridge, J.M. (2009). *Introductory econometrics: a modern approach.* 4th ed. Mason: South-Western Cengage Learning.

Wooldridge, J.M. (2010). *Econometric analysis of cross-section and panel data.* 2nd ed. London: MIT Press.

World Bank (2012). *World development report 2012: gender equality and development*. Washington DC: World Bank.

Wright, R.E. and Ermisch, J.F. (1991). Gender discrimination in the British labour market: a reassessment. *The Economic Journal*, 101(406), 508-522.

Young, G., Fort, L. and Danner, M. (1994). Moving from 'the status of women' to 'gender inequality': conceptualisation, social indicators and an empirical application. *International Sociology,* 9(1), 55–85.

Zhou, P., Ang, B.W., and Poh, K.L. (2005). Comparing aggregating methods for constructing the composite environmental index: an objective measure. *Ecological Economics*, 59(3), 305–311.

Zveglich, J.E. and van der Meulen Rodgers, Y. (2003). The impact of protective measures for female workers. *Journal of Labor Economics*, 21(3), 533-555.

Zweimüller, M., Winter-Ebmer, R. and Weichselbaumer, D. (2007). Market orientation and gender wage gaps: an international study. *IZA Discussion Paper,* no. 2918. Bonn: IZA.

Data Sources

Indicators of family policy

Indicator 1. Total effective mother-specific earnings-related leave, in weeks

Deven, F. and Moss, P. (2002). Leave arrangements for parents: overview and future outlook. *Community, Work and Family*, 5(3), 237-255.

Deven, F. and Moss, P. (2005). Leave policies and research: reviews and country notes. *CBGS Working Paper*, no. 2005/3. Brussels: CBGS.

Ditch, J., Barnes, H., Bradshaw, J., Commaille, J. and Eardley, T. (1995). *A synthesis of national family policies 1994*. York: Social Policy Research Unit.

Dumon, W. et al. (1991). *National family policies in EC-countries in 1991*, *vol. 1.* Brussels: Commission of the European Communities.

Ellis, E. (1993). Protection of pregnancy and maternity. *Industrial Law Journal*, 22(1), 63-67.

Eriksson, R. (2005). Parental leave in Sweden: the effects of the second daddy month. *SOFI Working Paper,* no. 9/2005. Stockholm: Swedish Institute for Social Research.

Eydal, G.B. and Rostgaard, T. (2011). Gender equality revisited - changes in Nordic childcare policies in the 2000s. *Social Policy and Administration*, 45(2), 161-179.

Gauthier, A.H. (2011a). *Comparative family policy database, version III.* [Computer file]. Netherlands Interdisciplinary Demographic Institute and Max Planck Institute for Demographic Research (distributors). Retrieved from: www.demogr.mpg.de.

Karamessini, M. (2003). *The costs of non gender equality legislation: the Greek report.* [Online]. European Commission Expert Group on Gender and Employment. Available at: http://research.mbs.ac.uk/european-employment/Portals/0/docs/gendersocial/CNE_Greece.pdf [Accessed 8th February 2012].

Knijn, T. and Saraceno, C. (2010). Changes in the regulation of responsibilities towards childcare needs in Italy and the Netherlands: different timing, increasingly different approaches. *Journal of European Social Policy*, 20(5), 444-455.

Moss, P. (Ed). (2009). International review of leave policies and related research 2009. *Employment Relations Research Series*, no. 102. London: Department for Business, Innovation and Skills.

Moss, P. (Ed.). (2010). International review of leave policies and related research 2010. *Employment Relations Research Series,* no. 115. London: Department for Business, Innovation and Skills.

Moss, P. and Korintus, M. (Eds.). (2008). International review of leave policies and related research 2008. *Employment Relations Research Series,* no. 100. London: Department for Business, Enterprise and Regulatory Reform.

Moss, P. and O'Brien, M. (Eds.). (2006). International review of leave policies and related research 2006. *Employment Relations Research Series*, no. 57. London: Department for

Trade and Industry.

Moss, P. and Wall, K. (Eds.). (2007). International review of leave policies and related research 2007. *Employment Relations Research Series*, no. 80. London: Department for Business, Enterprise and Regulatory Reform.

Mutual Information System on Social Protection in the Community (MISSOC). (1994) *Social protection in the member states of the Community: situation on July 1st 1993 and evolution*. Cologne: Commission of the European Communities.

Mutual Information System on Social Protection (MISSOC). (1996). *Social protection in the member states of the European Union: situation on July 1st 1995 and evolution*. Brussels: Commission of the European Communities.

Mutual Information System on Social Protection (MISSOC). (1997). *Social protection in the member states of the European Union: situation on July 1st 1996 and evolution*. Luxembourg: Office for Official Publications of the European Communities.

Mutual Information System on Social Protection (MISSOC). (1999). *Social protection in the member states of the European Community: situation on 1st January 1998 and evolution*. Luxembourg: Office for Official Publications of the European Communities.

Mutual Information System on Social Protection (MISSOC). (2000). *Social protection in the member states of the European Union and the European Economic Area: situation on 1st January 2000.* Luxembourg: Office for the Official Publications of the European.

Mutual Information System on Social Protection (MISSOC). (2001). *Social protection in the member states of the European Union and the European Economic Area: situation on 1st January 2001*. Luxembourg: Office for Official Publications of the European Communities.

Mutual Information System on Social Protection (MISSOC). (2002). *Social protection in the member states of the European Union, of the European Economic Area and in Switzerland: situation on 1st January 2002*. Luxembourg: Office for Official Publications of the European Communities.

Mutual Information System on Social Protection (MISSOC). (2003). *Social protection in the member states of the European Union, of the European Economic Area and in Switzerland: situation on 1st January 2003*. Luxembourg: Office for Official Publications of the European Communities.

Mutual Information System on Social Protection (MISSOC). (2004). *Social protection in the member states of the European Union, of the European Economic Area and in Switzerland: situation on 1st January 2004*. Luxembourg: Office for Official Publications of the European Communities.

Mutual Information System on Social Protection (MISSOC). (2013). *MISSOC Comparative Tables.* [Online]. Brussels: European Commission. Available at: http://www.missoc.org/MISSOC/INFORMATIONBASE/COMPARATIVETABLES/MISSOCDATABASE/comparativeTableSearch.jsp [Accessed 16th Dec 2013].

Nordic Social Statistical Committee (NOSOCO). (1997). *Social protection in the Nordic countries 1995*. Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (1998). *Social protection in the Nordic countries 1996*. Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (1999). *Social protection in the Nordic countries 1997*. Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2000). *Social protection in the Nordic countries 1998*. Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2001). *Social protection in the Nordic countries 1999.* Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2002). *Social protection in the Nordic countries 2000*. Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2003). *Social protection in the Nordic countries 2001*. Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2004). *Social protection in the Nordic countries 2002.* Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2005). *Social protection in the Nordic countries 2003*. Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2006). *Social protection in the Nordic countries 2004.* Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2007). *Social protection in the Nordic countries 2005.* Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2008). *Social protection in the Nordic countries 2006/7*. Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2009a). *Social protection in the Nordic countries 2007/8*. Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2009b). *Social protection in the Nordic countries 2008/9*. Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2011). *Social protection in the Nordic countries 2009/10.* Copenhagen: Nordic Social Statistical Committee.

Nyberg, A. (2004). Parental leave, public childcare and the dual earner/dual carer-model in Sweden. *Swedish National Institute for Working Life Discussion Paper.* Stockholm: NIWL.

Organisation for Economic Co-operation and Development (OECD). (2013c). *OECD Family Database.* [Online]. Paris: OECD. Available at: http://www.oecd.org/social/soc/oecdfamilydatabase.htm [Accessed: 21st November 2013].

Plantenga, J. and Remery, C. (2005). *Reconciliation of work and family life: a comparative review of thirty European countries.* Luxembourg: Office for Official Publication of the European Communities.

Ray, R. (2008). A detailed look at parental leave policies in 21 OECD countries. *Center for Economic and Policy Research Briefing Paper*. Washington, DC: Center for Economic and Policy Research.

Rønsen, M. and Sündstrom, M. (2002). Family policy and after-birth employment among new mothers: a comparison of Finland, Norway and Sweden. *European Journal of Population*, 18(2), 121-152.

Sündstrom, M. and Stafford, F.P. (1992). Female labour force participation, fertility and public policy in Sweden. *European Journal of Population*, 8(3), 199-215.

Indicator 2. Total effective father-specific leave, in weeks

Anxo, D. and Boulin, J.Y. (2005). *Working time options over the life-course: changing social security structures*. Dublin: European Foundation for the Improvement of Living and Working Conditions.

Clarke, L. and Henwood, M. (1997). Great Britain: the lone parent as the new norm? In F. Kaufmann, A. Kuijsten, H. Schulze, and K. Strohmeier, (Eds.). *Family life and family policies in Europe volume 1: structures and trends in the 1980s*. Oxford: Clarendon Press.

Clearinghouse International (2004) *Comparative child, youth and family policy tables* [Online]. New York: Clearinghouse International. Available at: http://www.childpolicyintl.org/ [Acccessed 11th February 2012].

De Henau, J., Meulders, D. and O'Dorchai, S. (2007a). Parents care and careers: comparing parental leave policies. In D. Del Boca, and C. Wetzels, (Eds.). *Social policies, labour markets and motherhood: a comparative analysis of European countries*. Cambridge: Cambridge University Press.

Den Dulk, L. van Doorne-Huiskes, A. and Schippers, J. (1996). Work-family arrangements and gender equality in Europe. *Women in Management Review*, 11(5), 25-35.

Deven, F. and Moss, P. (2002). Leave arrangements for parents: overview and future outlook. *Community, Work and Family*, 5(3), 237-255.

Deven, F. and Moss, P. (2005). Leave policies and research: reviews and country notes. *CBGS Working Paper*, no. 2005/3. Brussels: CBGS.

Ditch, J., Barnes, H., Bradshaw, J., Commaille, J. and Eardley, T. (1995). *A synthesis of national family policies 1994*. York: Social Policy Research Unit.

Duvander, A.Z. and Lammi-Taskula, J. (2011). *Comparing leave systems in the Nordic countries*. [Online]. Unpublished. Available at: http://www.leavenetwork.org/fileadmin/Leavenetwork/Seminars/2011/2011_Lammi_Taskula_Duvander.pdf [Accessed 11th Sept 2013].

European Commission Network on Childcare. (1996). *A review of services for young children in the European Union, 1990-1995*. London: European Commission Network on Childcare.

Eydal, G.B. and Rostgaard, T. (2011). Gender equality revisited - changes in Nordic childcare policies in the 2000s. *Social Policy and Administration*, 45(2), 161-179.

Fagnani, J. (2007). Family policies in France and Germany: sisters or distant cousins. *Community, Work and Family*, 10(1), 39-56.

Forbes, K. (2009). Paid parental leave under (New) Labour. *Social Policy Journal of New*

Zealand, 34, 12-24.

Gauthier, A.H. (2011a). *Comparative family policy database, version III.* [Computer file]. Rostock: Netherlands Interdisciplinary Demographic Institute and Max Planck Institute for Demographic Research (distributors). Available at: www.demogr.mpg.de. [Accessed 21st July 2014].

Gauthier, A.H. (2011b). *A brief history of maternity, parental and childcare leave schemes in OECD countries.* [Online]. Rostock: Netherlands Interdisciplinary Demographic Institute and Max Planck Institute for Demographic Research (distributors). Available at: www.demogr.mpg.de. [Accessed 21st July 2014].

Haataja, A. (2005). Outcomes of the two 1990s family policy reforms at the turn of the 2000s in Finland. In I. Soderling, S. Koskinen, and K. Pitkanen, (Eds.). *Yearbook of population research in Finland*. Helsinki: Väestöliitto.

Kammerman, S.B. (2000). Early childhood education and care: an overview of developments in the OECD countries. *International Journal of Education Research*, 33(1), 7-29.

Kammerman, S.B. (2002). Parental leave policies: an essential ingredient in early childhood education and care. *Social Policy Report*, 14(2), 3-15.

Knudsen, L.B. (1997). Denmark: the land of the vanishing housewife. In F. Kaufmann, A. Kuijsten, H. Schulze, and K. Strohmeier, (Eds.). *Family life and family policies in Europe volume 1: structures and trends in the 1980s*. Oxford: Clarendon Press.

Kreimer, M. (2004). *Austria: parental insurance and childcare: statements and comments*. [Online]. Unpublished. Available at: http://pdf.mutual-learning-employment.net/pdf/sweden04/autSWE04.pdf. [Accessed 14th February 2012].

Lalive, R., Schlosser, A., Steinhauer, A. and Zweimuller, J. (2011). Parental leave and mothers' careers: the relative importance of job protection and cash benefits. *IZA Discussion Paper,* no. 5792. Bonn: IZA.

Legilux (2012) *Espace legislative*. [Online]. Luxembourg: Le Gouvernment du Grand Duché de Luxembourg. Available at: http://www.legilux.public.lu [Accessed 26th April 2012].

Leira, A. (1993). Mothers, markets and the state: a Scandanavian 'model'? *Journal of Social Policy*, 22(3), 329-347.

Lewis, J. (2009). *Work-family balance, gender and policy*. Cheltenham: Edward Elgar.

Melhuish, E. and Moss, P. (1991). *Day care for young children: international perspectives*. London: Routledge.

Moss, P. (Ed). (2009). International review of leave policies and related research 2009. *Employment Relations Research Series*, no. 102. London: Department for Business, Innovation and Skills.

Moss, P. (Ed.). (2010). International review of leave policies and related research 2010. *Employment Relations Research Series,* no. 115. London: Department for Business, Innovation and Skills.

Moss, P. and Korintus, M. (Eds.). (2008). International review of leave policies and related

research 2008. *Employment Relations Research Series,* no. 100. London: Department for Business, Enterprise and Regulatory Reform.

Moss, P. and O'Brien, M. (Eds.). (2006). International review of leave policies and related research 2006. *Employment Relations Research Series*, no. 57. London: Department for Trade and Industry.

Moss, P. and Wall, K. (Eds.). (2007). International review of leave policies and related research 2007. *Employment Relations Research Series*, no. 80. London: Department for Business, Enterprise and Regulatory Reform.

Mutual Information System on Social Protection in the Community (MISSOC). (1994) *Social protection in the member states of the Community: situation on July 1st 1993 and evolution*. Cologne: Commission of the European Communities.

Mutual Information System on Social Protection (MISSOC). (1996). *Social protection in the member states of the European Union: situation on July 1st 1995 and evolution*. Brussels: Commission of the European Communities.

Mutual Information System on Social Protection (MISSOC). (1997). *Social protection in the member states of the European Union: situation on July 1st 1996 and evolution*. Luxembourg: Office for Official Publications of the European Communities.

Mutual Information System on Social Protection (MISSOC). (1999). *Social protection in the member states of the European Community: situation on 1st January 1998 and evolution*. Luxembourg: Office for Official Publications of the European Communities.

Mutual Information System on Social Protection (MISSOC). (2000). *Social protection in the member states of the European Union and the European Economic Area: situation on 1st January 2000.* Luxembourg: Office for the Official Publications of the European.

Mutual Information System on Social Protection (MISSOC). (2001). *Social protection in the member states of the European Union and the European Economic Area: situation on 1st January 2001*. Luxembourg: Office for Official Publications of the European Communities.

Mutual Information System on Social Protection (MISSOC). (2002). *Social protection in the member states of the European Union, of the European Economic Area and in Switzerland: situation on 1st January 2002*. Luxembourg: Office for Official Publications of the European Communities.

Mutual Information System on Social Protection (MISSOC). (2003). *Social protection in the member states of the European Union, of the European Economic Area and in Switzerland: situation on 1st January 2003*. Luxembourg: Office for Official Publications of the European Communities.

Mutual Information System on Social Protection (MISSOC). (2004). *Social protection in the member states of the European Union, of the European Economic Area and in Switzerland: situation on 1st January 2004*. Luxembourg: Office for Official Publications of the European Communities.

Mutual Information System on Social Protection (MISSOC). (2013). *MISSOC Comparative Tables.* [Online]. Brussels: European Commission. Available at: http://www.missoc.org/MISSOC/INFORMATIONBASE/COMPARATIVETABLES/MISSOCDATABASE/comparativeTableSearch.jsp [Accessed 16th Dec 2013].

Nordic Social Statistical Committee (NOSOCO). (1997). *Social protection in the Nordic countries 1995*. Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (1998). *Social protection in the Nordic countries 1996*. Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (1999). *Social protection in the Nordic countries 1997*. Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2000). *Social protection in the Nordic countries 1998*. Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2001). *Social protection in the Nordic countries 1999.* Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2002). *Social protection in the Nordic countries 2000*. Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2003). *Social protection in the Nordic countries 2001*. Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2004). *Social protection in the Nordic countries 2002.* Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2005). *Social protection in the Nordic countries 2003*. Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2006). *Social protection in the Nordic countries 2004.* Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2007). *Social protection in the Nordic countries 2005.* Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2008). *Social protection in the Nordic countries 2006/7*. Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2009a). *Social protection in the Nordic countries 2007/8*. Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2009b). *Social protection in the Nordic countries 2008/9*. Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2011). *Social protection in the Nordic countries 2009/10.* Copenhagen: Nordic Social Statistical Committee.

Nyberg, A. (2004). Parental leave, public childcare and the dual earner/dual carer-model in Sweden. *Swedish National Institute for Working Life Discussion Paper.* Stockholm: NIWL.

Organisation for Economic Co-operation and Development (OECD). (2013c). *OECD Family Database.* [Online]. Paris: OECD. Available at: http://www.oecd.org/social/soc/oecdfamilydatabase.htm [Accessed: 21st November 2013].

Papadopoulos, T. (2002). *Family policy in Greece: national informant's questionnaire*. York: Social Policy Research Unit.

Rostgaard, T. (2002). Caring for children and older people in Europe - a comparison of European policies and practice. *Policy Studies*, 23(1), 51-68.

Skevik, A. and Hatland, A. (2008). Family policies in Norway. In I. Ostner, and C. Schmitt, (Eds.). *Family policies in the context of family change: the Nordic countries in comparative perspective.* Wiesbaden: Verlag fur Sozialwissenschafen.

Social Security Administration. (2002). *Social security programs throughout the World: Europe, 2002*. Washington D.C.: Social Security Administration.

Social Security Administration. (2004). *Social security programs throughout the World: Europe, 2004*. Washington D.C.: Social Security Administration.

Stancanelli, E. (2003). *Do fathers care?* [Online]. Unpublished. Available at: http://www.vub.ac.be/TOR/iatur/abstracts/doc/paper-83.pdf [Accessed 21st July 2014].

Thévenon, O. and Solaz, A. (2013). Labour market effects of parental leave policies in OECD countries. *OECD Social, Employment and Migration Working Papers,* no. 141. Paris: OECD.

Wall, K. (2007). *The situation of families in Portugal in the late 1980s*. [Online]. Unpublished. Available at: http://195.23.38.178/conciliar/files/concilia-sit.%20familia.pdf [Accessed 14th Februrary 2012].

Wall, K. and Escobedo, A. (2009). Portugal and Spain: two pathways in Southern Europe. In S.B. Kammerman, and P. Moss, (Eds.). *The politics of parental leave: children, parenting, gender and the labour market*. Bristol: The Policy Press.

Würtz, A. (2007). The long-term effect on children of increasing the length of parents birth-related leave. *Aarhus School of Business, Department of Economics Working Paper*, no. 07-11. Aarhus: University of Aarhus.

Indicator 3. Total effective gender-neutral earnings-related parental leave, in weeks

Deven, F. and Moss, P. (2005). Leave policies and research: reviews and country notes. *CBGS Working Paper*, no. 2005/3. Brussels: CBGS.

Ditch, J., Barnes, H., Bradshaw, J., Commaille, J. and Eardley, T. (1995). *A synthesis of national family policies 1994*. York: Social Policy Research Unit.

Dumon, W. et al. (1991). *National family policies in EC-countries in 1991*, *vol. 1.* Brussels: Commission of the European Communities.

Ellingsæter, A.L. (2009). Leave policy in the Nordic welfare states: a 'recipe' for high employment / high fertility? *Community, Work and Family,* 12(1), 1-19.

Eriksson, R. (2005). Parental leave in Sweden: the effects of the second daddy month. *SOFI Working Paper,* no. 9/2005. Stockholm: Swedish Institute for Social Research.

Eydal, G.B. and Rostgaard, T. (2011). Gender equality revisited - changes in Nordic childcare policies in the 2000s. *Social Policy and Administration*, 45(2), 161-179.

Forbes, K. (2009). Paid parental leave under (New) Labour. *Social Policy Journal of New Zealand*, 34, 12-24.

Gauthier, A.H. (2011a). *Comparative family policy database, version III.* [Computer file]. Rostock: Netherlands Interdisciplinary Demographic Institute and Max Planck Institute for Demographic Research (distributors). Available at: www.demogr.mpg.de. [Accessed 21st July 2014].

Gauthier, A.H. (2011b). *A brief history of maternity, parental and childcare leave schemes in OECD countries.* [Online]. Rostock: Netherlands Interdisciplinary Demographic Institute and Max Planck Institute for Demographic Research (distributors). Available at: www.demogr.mpg.de. [Accessed 21st July 2014].

Haas, L. (2003). Parental leave and gender equality: lessons from the European Union. *Review of Policy Research*, 20(1), 89-114.

Kammerman, S.B. and Kahn, A.K. (1997). *Family change and family policies in Great Britain, Canada, New Zealand and the United States.* Oxford: Oxford University Press.

Knijn, T. and Saraceno, C. (2010). Changes in the regulation of responsibilities towards childcare needs in Italy and the Netherlands: different timing, increasingly different approaches. *Journal of European Social Policy*, 20(5), 444-455.

Kreimer, M. (2004). *Austria: parental insurance and childcare: statements and comments*. [Online]. Unpublished. Available at: http://pdf.mutual-learning-employment.net/pdf/sweden04/autSWE04.pdf. [Accessed 14th February 2012].

Lalive, R., Schlosser, A., Steinhauer, A. and Zweimuller, J. (2011). Parental leave and mothers' careers: the relative importance of job protection and cash benefits. *IZA Discussion Paper,* no. 5792. Bonn: IZA.

Moss, P. (Ed). (2009). International review of leave policies and related research 2009. *Employment Relations Research Series*, no. 102. London: Department for Business, Innovation and Skills.

Moss, P. (Ed.). (2010). International review of leave policies and related research 2010. *Employment Relations Research Series,* no. 115. London: Department for Business, Innovation and Skills.

Moss, P. and Korintus, M. (Eds.). (2008). International review of leave policies and related research 2008. *Employment Relations Research Series,* no. 100. London: Department for Business, Enterprise and Regulatory Reform.

Moss, P. and O'Brien, M. (Eds.). (2006). International review of leave policies and related research 2006. *Employment Relations Research Series*, no. 57. London: Department for Trade and Industry.

Moss, P. and Wall, K. (Eds.). (2007). International review of leave policies and related research 2007. *Employment Relations Research Series*, no. 80. London: Department for Business, Enterprise and Regulatory Reform.

Mutual Information System on Social Protection in the Community (MISSOC). (1994) *Social protection in the member states of the Community: situation on July 1st 1993 and evolution*. Cologne: Commission of the European Communities.

Mutual Information System on Social Protection (MISSOC). (1996). *Social protection in the member states of the European Union: situation on July 1st 1995 and evolution*. Brussels:

Commission of the European Communities.

Mutual Information System on Social Protection (MISSOC). (1997). *Social protection in the member states of the European Union: situation on July 1st 1996 and evolution*. Luxembourg: Office for Official Publications of the European Communities.

Mutual Information System on Social Protection (MISSOC). (1999). *Social protection in the member states of the European Community: situation on 1st January 1998 and evolution*. Luxembourg: Office for Official Publications of the European Communities.

Mutual Information System on Social Protection (MISSOC). (2000). *Social protection in the member states of the European Union and the European Economic Area: situation on 1st January 2000.* Luxembourg: Office for the Official Publications of the European.

Mutual Information System on Social Protection (MISSOC). (2001). *Social protection in the member states of the European Union and the European Economic Area: situation on 1st January 2001*. Luxembourg: Office for Official Publications of the European Communities.

Mutual Information System on Social Protection (MISSOC). (2002). *Social protection in the member states of the European Union, of the European Economic Area and in Switzerland: situation on 1st January 2002*. Luxembourg: Office for Official Publications of the European Communities.

Mutual Information System on Social Protection (MISSOC). (2003). *Social protection in the member states of the European Union, of the European Economic Area and in Switzerland: situation on 1st January 2003*. Luxembourg: Office for Official Publications of the European Communities.

Mutual Information System on Social Protection (MISSOC). (2004). *Social protection in the member states of the European Union, of the European Economic Area and in Switzerland: situation on 1st January 2004*. Luxembourg: Office for Official Publications of the European Communities.

Mutual Information System on Social Protection (MISSOC). (2013). *MISSOC Comparative Tables.* [Online]. Brussels: European Commission. Available at: http://www.missoc.org/MISSOC/INFORMATIONBASE/COMPARATIVETABLES/MISSOCDATABASE/comparativeTableSearch.jsp [Accessed 16th Dec 2013].

Nordic Social Statistical Committee (NOSOCO). (1997). *Social protection in the Nordic countries 1995*. Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (1998). *Social protection in the Nordic countries 1996*. Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (1999). *Social protection in the Nordic countries 1997*. Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2000). *Social protection in the Nordic countries 1998*. Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2001). *Social protection in the Nordic countries 1999.* Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2002). *Social protection in the Nordic countries 2000*. Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2003). *Social protection in the Nordic countries 2001*. Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2004). *Social protection in the Nordic countries 2002.* Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2005). *Social protection in the Nordic countries 2003*. Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2006). *Social protection in the Nordic countries 2004.* Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2007). *Social protection in the Nordic countries 2005.* Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2008). *Social protection in the Nordic countries 2006/7*. Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2009a). *Social protection in the Nordic countries 2007/8*. Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2009b). *Social protection in the Nordic countries 2008/9*. Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2011). *Social protection in the Nordic countries 2009/10.* Copenhagen: Nordic Social Statistical Committee.

Nyberg, A. (2004). Parental leave, public childcare and the dual earner/dual carer-model in Sweden. *Swedish National Institute for Working Life Discussion Paper.* Stockholm: NIWL.

Organisation for Economic Co-operation and Development (OECD). (1998). *Benefit systems and work incentives 1998*. Paris: OECD.

Organisation for Economic Co-operation and Development (OECD). (1999). *Benefit systems and work incentives 1999*. Paris: OECD.

Organisation for Economic Co-operation and Development (OECD). (2013c). *OECD Family Database.* [Online]. Paris: OECD. Available at: http://www.oecd.org/social/soc/oecdfamilydatabase.htm [Accessed: 21st November 2013].

Plantenga, J. and Remery, C. (2005). *Reconciliation of work and family life: a comparative review of thirty European countries.* Luxembourg: Office for Official Publication of the European Communities.

Robson, J. (2010). *A comparative literature review of parental leave policies.* [Online]. Unpublished. Available at: http://www.srdc.org/uploads/Parental_leave_report.pdf [7th February 2012].

Rønsen, M. and Sündstrom, M. (2002). Family policy and after-birth employment among new mothers: a comparison of Finland, Norway and Sweden. *European Journal of Population*, 18(2), 121-152.

Skevik, A. and Hatland, A. (2008). Family policies in Norway. In I. Ostner, and C. Schmitt,

(Eds.). *Family policies in the context of family change: the Nordic countries in comparative perspective.* Wiesbaden: Verlag fur Sozialwissenschafen.

Sündstrom, M. and Stafford, F.P. (1992). Female labour force participation, fertility and public policy in Sweden. *European Journal of Population*, 8(3), 199-215.

Waldfogel, J. (2001). International policies toward parental leave and child care. *The Future of Children*, 11(1), 98-111.

Indicator 4. Proportion of children between zero and three in public or publicly supported childcare

Böckmann, I., Budig, M. and Misra, J. (2012). *The Work-Family Policy Indicators.* [Online]. Luxembourg: Luxembourg Income Study. Available at: http://www.lisdatacenter.org/resources/other-databases/ [Accessed 10th Oct 2013].

Brind, R., Norden, O., McGinigal, S., Garnett, E. and Oseman, D., with La Velle, I. and Jelicic, H. (2011). *Childcare and early years providers survey 2010: main research report OSR17/2011.* London: Department for Education.

Conference Nazionale Della Famiglia. (2010). *Il Piano straordinario per lo sviluppo dei servizi socio-educativi per la prima infanzia* [The strategy for the development of social and educational services for early childhood]. Paper presented at the Conference nazionale della famiglia: storia e futuro di tuttie. 8-10 November 2010. Milano. [Online]. Available at: http://www.politichefamiglia.it/media/64823/sintesi_nidi_2_20cop.pdf [Accessed 15th Oct 2013].

De Henau, J., Meulders, D. and O'Dorchai, S. (2007b). Making time for working parents: comparing public childcare provision. In D. Del Boca, and C. Wetzels, (Eds.). *Social policies, labour markets and motherhood: a comparative analysis of European countries*. Cambridge: Cambridge University Press.

Education Counts. (2013). *Early childhood education statistics.* [Online]. Ministry of Education, Wellington. Available at: http://www.educationcounts.govt.nz/statistics/ece2 [Accessed 10th Oct 2013].

European Commission Network on Childcare (ECNC). (1996). *A review of services for young children in the European Union, 1990–1995.* Brussels: European Commission Equal Opportunities Unit.

Gornick, J. and Meyers, M. (2003). *Families that work: policies for reconciling parenthood and employment*. New York: Russel Sage Foundation.

Gornick, J.C., Meyers, M.K. and Ross, K.E. (1997). Supporting the employment of mothers: policy variation across fourteen welfare states. *Journal of European Social Policy*, 7(1), 45-70.

Hank, K., Tillmann, K. and Wagner, G.G. (2001). Außerhäusliche kinderbetreuung in Ostdeutschland vor und nach der wiedervereinigung: ein vergleich mit Westdeutschland in den jahren 1990-1999 [Non-domestic child care in East Germany before and after reunification: a comparison with West Germany in the years 1990-1999]. *MPIDR Working Paper,* no. WP-2001-003. Rostock: Max Planck Institute for Demographic Research.

Kinnair, R., Nicholson, S. and Jordan, E. (2007). *2006 Childcare and early years providers surveys: overview report: main research report DCSF-RR009*. London: Department for

Children, Schools and Families.

Krapf, S. (2014). Who uses public childcare for 2-year-old children? Coherent family policies and usage patterns in Sweden, Finland and West Germany. *International Journal of Social Welfare,* 23(1), 25-40.

Meulders, D. and O'Dorchai, S. (2008). Childcare in Belgium. *DULBEA working paper,* no. 08-08.RR. Département d'Economie appliquée de l'Université libre de Bruxelles, Brussels.

Misra, J., Moller, S., Strader, E. and Wemlinger, E. (2012). Family policies, employment and poverty among partnered and single mothers. *Research in Social Stratification and Mobility*, 30(1), 113-128.

Moss, P. (1990) Childcare in the European Communities, 1985-1990. *Women of Europe supplement,* no. 31. Brussels: Commission of the European Communities.

Multilinks. (2011). *Multilinks database on intergenerational policy indicators*. Version 2.0. [Online]. Berlin: Multilinks Project and Wissenschaftszentrum Berlin für Sozialforschung (WZB). Available at: http://multilinks-database.wzb.eu [Accessed 29/02/2012].

Neyer, G. (2003). Family policies and low fertility in Western Europe. *MPIDR Working Paper,* no. WP 2003-021. Rostock: Max Planck Institute for Demographic Research.

Nicholson, S., Jordan, E., Cooper, J. and Mason, J. (2008). *Childcare and early years providers survey 2007: main research report DCSF-RR047.* London: Department for Children, Schools and Families.

Nordic Social Statistical Committee (NOSOCO). (1997). *Social protection in the Nordic countries 1995*. Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (1998). *Social protection in the Nordic countries 1996*. Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (1999). *Social protection in the Nordic countries 1997*. Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2000). *Social protection in the Nordic countries 1998*. Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2001). *Social protection in the Nordic countries 1999.* Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2002). *Social protection in the Nordic countries 2000*. Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2003). *Social protection in the Nordic countries 2001*. Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2004). *Social protection in the Nordic countries 2002.* Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2005). *Social protection in the Nordic countries 2003*. Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2006). *Social protection in the Nordic*

countries 2004. Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2007). *Social protection in the Nordic countries 2005.* Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2008). *Social protection in the Nordic countries 2006/7*. Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2009a). *Social protection in the Nordic countries 2007/8*. Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2009b). *Social protection in the Nordic countries 2008/9*. Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2011). *Social protection in the Nordic countries 2009/10.* Copenhagen: Nordic Social Statistical Committee.

Organisation for Economic Co-operation and Development (OECD). (2007a). *Babies and bosses: reconciling work and family life: a synthesis of findings for OECD countries*. Paris: OECD.

Organisation for Economic Co-operation and Development (OECD). (2010a). *Combined Country Responses on Financing ECEC Services*. Paris: OECD.

Organisation for Economic Co-operation and Development (OECD). (2013c). *OECD Family Database.* [Online]. Paris: OECD. Available at: http://www.oecd.org/social/soc/oecdfamilydatabase.htm [Accessed: 21st November 2013].

Phillips, R., Norden, O., McGinigal, S. and Cooper, J. (2009). *Childcare and early years roviders survey 2008: main research report DCSF-RR164*. London: Department for Children, Schools and Families.

Phillips, R., Norden, O., McGinigal, S. and Oseman, D., with Coleman, N. (2010). *Childcare and early years providers survey 2009: main research report DFE-RR012*. London: Department for Children, Schools and Families.

Randal, V. (2000). Childcare policy in the European states: limits to convergence. *Journal of European Public Policy*, 7(3), 346-368.

Statec. (2013). *Statistics portal: Grand Duchy of Luxembourg*. [Online]. Luxembourg: Statec. Available at: http://www.statistiques.public.lu/en/index.html [Accessed: 10th Oct 2013].

Statistics Austria. (2012). *Childcare centres.* [Online]. Vienna: Statistics Austria. Available at: http://www.statistik.at/web_en/statistics/education_culture/formal_education/day_care_centres_child_care/index.html [Accessed: 5th March 2012].

Indicator 5. Proportion of children between three and six in publicly-run pre-primary education or in primary school

Organisation for Economic Co-operation and Development (OECD). (2012a). *OECD Online Education Database.* [Online]. Paris: OECD. Available at: http://www.oecd.org/edu/database.htm [Accessed: 27th Feb 2012].

Eurostat. (2012). *Eurostat Population Database.* [Online]. Eurostat, Luxembourg. Available

at: http://epp.eurostat.ec.europa.eu/portal/page/portal/population/ data/database [Accessed: 27th February 2012].

Indicator 6. Public expenditure on childcare services per child aged under six (2005 USDs PPP)

Organisation for Economic Co-operation and Development (OECD). (2012a). *OECD Online Education Database.* [Online]. Paris: OECD. Available at: http://www.oecd.org/edu/database.htm [Accessed: 27th Feb 2012].

Organisation for Economic Co-operation and Development (OECD). (2012b). *OECD Social Expenditure Database*. 2012 Edition. [Online]. Paris: OECD. Available at: http://www.oecd.org/social/expenditure.htm [Accessed: 27th February 2012].

Organisation for Economic Co-operation and Development (OECD). (2013d). *OECD Statistics Extracts*. [Online]. Paris: OECD. Available at: http://stats.oecd.org/ [Accessed: 25th Nov 2013].

Indicator 7. Child benefit per month for two children, as a proportion of an average production worker's gross monthly earnings

Gauthier, A.H. (2011a). *Comparative family policy database, version III.* [Computer file]. Rostock: Netherlands Interdisciplinary Demographic Institute and Max Planck Institute for Demographic Research (distributors). Available at: www.demogr.mpg.de. [Accessed 21st July 2014].

Mutual Information System on Social Protection (MISSOC). (2013). *MISSOC Comparative Tables.* [Online]. Brussels: European Commission. Available at: http://www.missoc.org/MISSOC/INFORMATIONBASE/COMPARATIVETABLES/MISSOCDATABASE/comparativeTableSearch.jsp [Accessed 16th Dec 2013].

Mutual Information System on Social Protection of the Council of Europe (MISSCEO). (2013). *MISSCEO Comparative Tables.* [Online]. Strasbourg: Council of Europe. Available at: http://www.coe.int/t/dg3/socialpolicies/socialsecurity/missceo/tables_en.asp#2008 [Accessed 16th Dec 2013].

Social Security Administration (SSA) (2013). Social security programs throughout the world. [Online]. Woodland, MD: SSA. Available at: http://www.ssa.gov/policy/docs/ progdesc/ssptw/ [Accessed 16th Dec 2013].

Indicator 8. Tax subsidies for the family

Organisation for Economic Co-operation and Development (OECD). (1994). *The tax/benefit position of production workers, annual report 1990-1993*. Paris: OECD.

Organisation for Economic Co-operation and Development (OECD). (1997). *The tax/benefit position of employees, 1995-1996: 1997 edition.* Paris: OECD.

Organisation for Economic Co-operation and Development (OECD). (1999). *The tax/benefit position of employees, 1997: 1998 edition*. Paris: OECD.

Organisation for Economic Co-operation and Development (OECD). (2000) *Taxing wages: taxes on wages and salaries, social security contributions for employees and their employers, child benefits, 1998-1999: 1999 edition*. Paris: OECD.

Organisation for Economic Co-operation and Development (OECD). (2013e). *Taxing wages: comparative Tables.* [Online]. Paris: OECD. Available at: http://www.oecd.org/ctp/tax-policy/taxing-wages-comparative-tax-burden-indicators.htm [Accessed 27th Nov 2013].

Indicator 9. Total effective flat-rate parental leave and paid childcare leave, in weeks

Deven, F. and Moss, P. (2005). Leave policies and research: reviews and country notes. *CBGS Working Paper*, no. 2005/3. Brussels: CBGS.

Ditch, J., Barnes, H., Bradshaw, J., Commaille, J. and Eardley, T. (1995). *A synthesis of national family policies 1994*. York: Social Policy Research Unit.

Dumon, W. et al. (1991). *National family policies in EC-countries in 1991*, *vol. 1.* Brussels: Commission of the European Communities.

Ellingsæter, A.L. (2009). Leave policy in the Nordic welfare states: a 'recipe' for high employment / high fertility? *Community, Work and Family,* 12(1), 1-19.

Eriksson, R. (2005). Parental leave in Sweden: the effects of the second daddy month. *SOFI Working Paper,* no. 9/2005. Stockholm: Swedish Institute for Social Research.

Eydal, G.B. and Rostgaard, T. (2011). Gender equality revisited - changes in Nordic childcare policies in the 2000s. *Social Policy and Administration*, 45(2), 161-179.

Forbes, K. (2009). Paid parental leave under (New) Labour. *Social Policy Journal of New Zealand*, 34, 12-24.

Gauthier, A.H. (2011a). *Comparative family policy database, version III.* [Computer file]. Rostock: Netherlands Interdisciplinary Demographic Institute and Max Planck Institute for Demographic Research (distributors). Available at: www.demogr.mpg.de. [Accessed 21st July 2014].

Gauthier, A.H. (2011b). *A brief history of maternity, parental and childcare leave schemes in OECD countries.* [Online]. Rostock: Netherlands Interdisciplinary Demographic Institute and Max Planck Institute for Demographic Research (distributors). Available at: www.demogr.mpg.de. [Accessed 21st July 2014].

Haas, L. (2003). Parental leave and gender equality: lessons from the European Union. *Review of Policy Research*, 20(1), 89-114.

Kammerman, S.B. and Kahn, A.K. (1997). *Family change and family policies in Great Britain, Canada, New Zealand and the United States.* Oxford: Oxford University Press.

Knijn, T. and Saraceno, C. (2010). Changes in the regulation of responsibilities towards childcare needs in Italy and the Netherlands: different timing, increasingly different approaches. *Journal of European Social Policy*, 20(5), 444-455.

Kreimer, M. (2004). *Austria: parental insurance and childcare: statements and comments*. [Online]. Unpublished. Available at: http://pdf.mutual-learning-employment.net/pdf/sweden04/autSWE04.pdf. [Accessed 14th February 2012].

Lalive, R., Schlosser, A., Steinhauer, A. and Zweimuller, J. (2011). Parental leave and mothers' careers: the relative importance of job protection and cash benefits. *IZA Discussion Paper,* no. 5792. Bonn: IZA.

Moss, P. (Ed). (2009). International review of leave policies and related research 2009. *Employment Relations Research Series*, no. 102. London: Department for Business, Innovation and Skills.

Moss, P. (Ed.). (2010). International review of leave policies and related research 2010. *Employment Relations Research Series,* no. 115. London: Department for Business, Innovation and Skills.

Moss, P. and Korintus, M. (Eds.). (2008). International review of leave policies and related research 2008. *Employment Relations Research Series,* no. 100. London: Department for Business, Enterprise and Regulatory Reform.

Moss, P. and O'Brien, M. (Eds.). (2006). International review of leave policies and related research 2006. *Employment Relations Research Series*, no. 57. London: Department for Trade and Industry.

Moss, P. and Wall, K. (Eds.). (2007). International review of leave policies and related research 2007. *Employment Relations Research Series*, no. 80. London: Department for Business, Enterprise and Regulatory Reform.

Mutual Information System on Social Protection in the Community (MISSOC). (1994) *Social protection in the member states of the Community: situation on July 1st 1993 and evolution*. Cologne: Commission of the European Communities.

Mutual Information System on Social Protection (MISSOC). (1996). *Social protection in the member states of the European Union: situation on July 1st 1995 and evolution*. Brussels: Commission of the European Communities.

Mutual Information System on Social Protection (MISSOC). (1997). *Social protection in the member states of the European Union: situation on July 1st 1996 and evolution*. Luxembourg: Office for Official Publications of the European Communities.

Mutual Information System on Social Protection (MISSOC). (1999). *Social protection in the member states of the European Community: situation on 1st January 1998 and evolution*. Luxembourg: Office for Official Publications of the European Communities.

Mutual Information System on Social Protection (MISSOC). (2000). *Social protection in the member states of the European Union and the European Economic Area: situation on 1st January 2000.* Luxembourg: Office for the Official Publications of the European.

Mutual Information System on Social Protection (MISSOC). (2001). *Social protection in the member states of the European Union and the European Economic Area: situation on 1st January 2001*. Luxembourg: Office for Official Publications of the European Communities.

Mutual Information System on Social Protection (MISSOC). (2002). *Social protection in the member states of the European Union, of the European Economic Area and in Switzerland: situation on 1st January 2002*. Luxembourg: Office for Official Publications of the European Communities.

Mutual Information System on Social Protection (MISSOC). (2003). *Social protection in the member states of the European Union, of the European Economic Area and in Switzerland: situation on 1st January 2003*. Luxembourg: Office for Official Publications of the European Communities.

Mutual Information System on Social Protection (MISSOC). (2004). *Social protection in the member states of the European Union, of the European Economic Area and in Switzerland: situation on 1st January 2004*. Luxembourg: Office for Official Publications of the European Communities.

Mutual Information System on Social Protection (MISSOC). (2013). *MISSOC Comparative Tables.* [Online]. Brussels: European Commission. Available at: http://www.missoc.org/MISSOC/INFORMATIONBASE/COMPARATIVETABLES/MISSOCDATABASE/comparativeTableSearch.jsp [Accessed 16th Dec 2013].

Nordic Social Statistical Committee (NOSOCO). (1997). *Social protection in the Nordic countries 1995*. Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (1998). *Social protection in the Nordic countries 1996*. Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (1999). *Social protection in the Nordic countries 1997*. Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2000). *Social protection in the Nordic countries 1998*. Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2001). *Social protection in the Nordic countries 1999.* Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2002). *Social protection in the Nordic countries 2000*. Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2003). *Social protection in the Nordic countries 2001*. Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2004). *Social protection in the Nordic countries 2002.* Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2005). *Social protection in the Nordic countries 2003*. Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2006). *Social protection in the Nordic countries 2004.* Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2007). *Social protection in the Nordic countries 2005.* Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2008). *Social protection in the Nordic countries 2006/7*. Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2009a). *Social protection in the Nordic countries 2007/8*. Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2009b). *Social protection in the Nordic countries 2008/9*. Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2011). *Social protection in the Nordic countries 2009/10.* Copenhagen: Nordic Social Statistical Committee.

Nyberg, A. (2004). Parental leave, public childcare and the dual earner/dual carer-model in Sweden. *Swedish National Institute for Working Life Discussion Paper.* Stockholm: NIWL.

Organisation for Economic Co-operation and Development (OECD). (1998). *Benefit systems and work incentives 1998*. Paris: OECD.

Organisation for Economic Co-operation and Development (OECD). (1999). *Benefit systems and work incentives 1999*. Paris: OECD.

Organisation for Economic Co-operation and Development (OECD). (2013c). *OECD Family Database.* [Online]. Paris: OECD. Available at: http://www.oecd.org/social/soc/oecdfamilydatabase.htm [Accessed: 21st November 2013].

Plantenga, J. and Remery, C. (2005). *Reconciliation of work and family life: a comparative review of thirty European countries.* Luxembourg: Office for Official Publication of the European Communities.

Robson, J. (2010). *A comparative literature review of parental leave policies.* [Online]. Unpublished. Available at: http://www.srdc.org/uploads/Parental_leave_report.pdf [7th Februrary 2012].

Rønsen, M. and Sündstrom, M. (2002). Family policy and after-birth employment among new mothers: a comparison of Finland, Norway and Sweden. *European Journal of Population*, 18(2), 121-152.

Sipilä, J. and Korpinen, J. (1998). Cash versus child care services in Finland. *Social Policy and Administration*, 32(3), 263-277.

Skevik, A. and Hatland, A. (2008). Family policies in Norway. In I. Ostner, and C. Schmitt, (Eds.). *Family policies in the context of family change: the Nordic countries in comparative perspective.* Wiesbaden: Verlag fur Sozialwissenschafen.

The Social Insurance Institution Finland (TSII) (1997). *Statistical yearbook of the Social Insurance Institution*. Helsinki: The Social Insurance Institution.

Sündstrom, M. and Stafford, F.P. (1992). Female labour force participation, fertility and public policy in Sweden. *European Journal of Population*, 8(3), 199-215.

Waldfogel, J. (2001). International policies toward parental leave and child care. *The Future of Children*, 11(1), 98-111.

Indicator 10. Total effective maternity and parental leave available to mothers, in weeks

Deven, F. and Moss, P. (2005). Leave policies and research: reviews and country notes. *CBGS Working Paper*, no. 2005/3. Brussels: CBGS.

Ditch, J., Barnes, H., Bradshaw, J., Commaille, J. and Eardley, T. (1995). *A synthesis of national family policies 1994*. York: Social Policy Research Unit.

Dumon, W. et al. (1991). *National family policies in EC-countries in 1991*, *vol. 1.* Brussels: Commission of the European Communities.

Ellingsæter, A.L. (2009). Leave policy in the Nordic welfare states: a 'recipe' for high employment / high fertility? *Community, Work and Family,* 12(1), 1-19.

Ellis, E. (1993). Protection of pregnancy and maternity. *Industrial Law Journal*, 22(1), 63-67.

Eriksson, R. (2005). Parental leave in Sweden: the effects of the second daddy month. *SOFI Working Paper,* no. 9/2005. Stockholm: Swedish Institute for Social Research.

Eydal, G.B. and Rostgaard, T. (2011). Gender equality revisited - changes in Nordic childcare policies in the 2000s. *Social Policy and Administration*, 45(2), 161-179.

Forbes, K. (2009). Paid parental leave under (New) Labour. *Social Policy Journal of New Zealand*, 34, 12-24.

Gauthier, A.H. (2011a). *Comparative family policy database, version III.* [Computer file]. Rostock: Netherlands Interdisciplinary Demographic Institute and Max Planck Institute for Demographic Research (distributors). Available at: www.demogr.mpg.de. [Accessed 21st July 2014].

Gauthier, A.H. (2011b). *A brief history of maternity, parental and childcare leave schemes in OECD countries.* [Online]. Rostock: Netherlands Interdisciplinary Demographic Institute and Max Planck Institute for Demographic Research (distributors). Available at: www.demogr.mpg.de. [Accessed 21st July 2014].

Haas, L. (2003). Parental leave and gender equality: lessons from the European Union. *Review of Policy Research*, 20(1), 89-114.

Kammerman, S.B. and Kahn, A.K. (1997). *Family change and family policies in Great Britain, Canada, New Zealand and the United States.* Oxford: Oxford University Press.

Karamessini, M. (2003). *The costs of non gender equality legislation: the Greek report.* [Online]. European Commission Expert Group on Gender and Employment. Available at: http://research.mbs.ac.uk/european-employment/Portals/0/docs/gendersocial/CNE_Greece.pdf [Accessed 8th February 2012].

Knijn, T. and Saraceno, C. (2010). Changes in the regulation of responsibilities towards childcare needs in Italy and the Netherlands: different timing, increasingly different approaches. *Journal of European Social Policy*, 20(5), 444-455.

Kreimer, M. (2004). *Austria: parental insurance and childcare: statements and comments*. [Online]. Unpublished. Available at: http://pdf.mutual-learning-employment.net/pdf/sweden04/autSWE04.pdf. [Accessed 14th February 2012].

Lalive, R., Schlosser, A., Steinhauer, A. and Zweimuller, J. (2011). Parental leave and mothers' careers: the relative importance of job protection and cash benefits. *IZA Discussion Paper,* no. 5792. Bonn: IZA.

Moss, P. (Ed). (2009). International review of leave policies and related research 2009. *Employment Relations Research Series*, no. 102. London: Department for Business, Innovation and Skills.

Moss, P. (Ed.). (2010). International review of leave policies and related research 2010. *Employment Relations Research Series,* no. 115. London: Department for Business, Innovation and Skills.

Moss, P. and Korintus, M. (Eds.). (2008). International review of leave policies and related

research 2008. *Employment Relations Research Series,* no. 100. London: Department for Business, Enterprise and Regulatory Reform.

Moss, P. and O'Brien, M. (Eds.). (2006). International review of leave policies and related research 2006. *Employment Relations Research Series*, no. 57*.* London: Department for Trade and Industry.

Moss, P. and Wall, K. (Eds.). (2007). International review of leave policies and related research 2007. *Employment Relations Research Series*, no. 80. London: Department for Business, Enterprise and Regulatory Reform.

Mutual Information System on Social Protection in the Community (MISSOC). (1994) *Social protection in the member states of the Community: situation on July 1st 1993 and evolution*. Cologne: Commission of the European Communities.

Mutual Information System on Social Protection (MISSOC). (1996). *Social protection in the member states of the European Union: situation on July 1st 1995 and evolution*. Brussels: Commission of the European Communities.

Mutual Information System on Social Protection (MISSOC). (1997). *Social protection in the member states of the European Union: situation on July 1st 1996 and evolution*. Luxembourg: Office for Official Publications of the European Communities.

Mutual Information System on Social Protection (MISSOC). (1999). *Social protection in the member states of the European Community: situation on 1st January 1998 and evolution*. Luxembourg: Office for Official Publications of the European Communities.

Mutual Information System on Social Protection (MISSOC). (2000). *Social protection in the member states of the European Union and the European Economic Area: situation on 1st January 2000.* Luxembourg: Office for the Official Publications of the European.

Mutual Information System on Social Protection (MISSOC). (2001). *Social protection in the member states of the European Union and the European Economic Area: situation on 1st January 2001*. Luxembourg: Office for Official Publications of the European Communities.

Mutual Information System on Social Protection (MISSOC). (2002). *Social protection in the member states of the European Union, of the European Economic Area and in Switzerland: situation on 1st January 2002*. Luxembourg: Office for Official Publications of the European Communities.

Mutual Information System on Social Protection (MISSOC). (2003). *Social protection in the member states of the European Union, of the European Economic Area and in Switzerland: situation on 1st January 2003*. Luxembourg: Office for Official Publications of the European Communities.

Mutual Information System on Social Protection (MISSOC). (2004). *Social protection in the member states of the European Union, of the European Economic Area and in Switzerland: situation on 1st January 2004*. Luxembourg: Office for Official Publications of the European Communities.

Mutual Information System on Social Protection (MISSOC). (2013). *MISSOC Comparative Tables.* [Online]. Brussels: European Commission. Available at: http://www.missoc.org/MISSOC/INFORMATIONBASE/COMPARATIVETABLES/MISSOCDATABASE/comparativeTableSearch.jsp [Accessed 16th Dec 2013].

Nordic Social Statistical Committee (NOSOCO). (1997). *Social protection in the Nordic countries 1995*. Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (1998). *Social protection in the Nordic countries 1996*. Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (1999). *Social protection in the Nordic countries 1997*. Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2000). *Social protection in the Nordic countries 1998*. Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2001). *Social protection in the Nordic countries 1999.* Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2002). *Social protection in the Nordic countries 2000*. Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2003). *Social protection in the Nordic countries 2001*. Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2004). *Social protection in the Nordic countries 2002.* Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2005). *Social protection in the Nordic countries 2003*. Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2006). *Social protection in the Nordic countries 2004.* Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2007). *Social protection in the Nordic countries 2005.* Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2008). *Social protection in the Nordic countries 2006/7*. Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2009a). *Social protection in the Nordic countries 2007/8*. Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2009b). *Social protection in the Nordic countries 2008/9*. Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2011). *Social protection in the Nordic countries 2009/10.* Copenhagen: Nordic Social Statistical Committee.

Nyberg, A. (2004). Parental leave, public childcare and the dual earner/dual carer-model in Sweden. *Swedish National Institute for Working Life Discussion Paper.* Stockholm: NIWL.

Organisation for Economic Co-operation and Development (OECD). (1998). *Benefit systems and work incentives 1998*. Paris: OECD.

Organisation for Economic Co-operation and Development (OECD). (1999). *Benefit systems and work incentives 1999*. Paris: OECD.

Organisation for Economic Co-operation and Development (OECD). (2013c). *OECD Family*

Database. [Online]. Paris: OECD. Available at: http://www.oecd.org/social/soc/oecdfamilydatabase.htm [Accessed: 21st November 2013].

Plantenga, J. and Remery, C. (2005). *Reconciliation of work and family life: a comparative review of thirty European countries.* Luxembourg: Office for Official Publication of the European Communities.

Ray, R. (2008). A detailed look at parental leave policies in 21 OECD countries. *Center for Economic and Policy Research Briefing Paper*. Washington, DC: Center for Economic and Policy Research.

Robson, J. (2010). *A comparative literature review of parental leave policies.* [Online]. Unpublished. Available at: http://www.srdc.org/uploads/Parental_leave_report.pdf [7th Februrary 2012].

Rønsen, M. and Sündstrom, M. (2002). Family policy and after-birth employment among new mothers: a comparison of Finland, Norway and Sweden. *European Journal of Population*, 18(2), 121-152.

Skevik, A. and Hatland, A. (2008). Family policies in Norway. In I. Ostner, and C. Schmitt, (Eds.). *Family policies in the context of family change: the Nordic countries in comparative perspective.* Wiesbaden: Verlag fur Sozialwissenschafen.

Sündstrom, M. and Stafford, F.P. (1992). Female labour force participation, fertility and public policy in Sweden. *European Journal of Population*, 8(3), 199-215.

Waldfogel, J. (2001). International policies toward parental leave and child care. *The Future of Children*, 11(1), 98-111.

Indicator 11. Effective childcare leave, in weeks

Deven, F. and Moss, P. (2005). Leave policies and research: reviews and country notes. *CBGS Working Paper*, no. 2005/3. Brussels: CBGS.

Ditch, J., Barnes, H., Bradshaw, J., Commaille, J. and Eardley, T. (1995). *A synthesis of national family policies 1994*. York: Social Policy Research Unit.

Gauthier, A.H. (2011a). *Comparative family policy database, version III.* [Computer file]. Rostock: Netherlands Interdisciplinary Demographic Institute and Max Planck Institute for Demographic Research (distributors). Available at: www.demogr.mpg.de. [Accessed 21st July 2014].

Gauthier, A.H. (2011b). *A brief history of maternity, parental and childcare leave schemes in OECD countries.* [Online]. Rostock: Netherlands Interdisciplinary Demographic Institute and Max Planck Institute for Demographic Research (distributors). Available at: www.demogr.mpg.de. [Accessed 21st July 2014].

Kreimer, M. (2004). *Austria: parental insurance and childcare: statements and comments*. [Online]. Unpublished. Available at: http://pdf.mutual-learning-employment.net/pdf/sweden04/autSWE04.pdf. [Accessed 14th February 2012].

Lalive, R., Schlosser, A., Steinhauer, A. and Zweimuller, J. (2011). Parental leave and mothers' careers: the relative importance of job protection and cash benefits. *IZA Discussion Paper,* no. 5792. Bonn: IZA.

Moss, P. (Ed). (2009). International review of leave policies and related research 2009. *Employment Relations Research Series*, no. 102. London: Department for Business, Innovation and Skills.

Moss, P. (Ed.). (2010). International review of leave policies and related research 2010. *Employment Relations Research Series,* no. 115. London: Department for Business, Innovation and Skills.

Moss, P. and Korintus, M. (Eds.). (2008). International review of leave policies and related research 2008. *Employment Relations Research Series,* no. 100. London: Department for Business, Enterprise and Regulatory Reform.

Moss, P. and O'Brien, M. (Eds.). (2006). International review of leave policies and related research 2006. *Employment Relations Research Series*, no. 57. London: Department for Trade and Industry.

Moss, P. and Wall, K. (Eds.). (2007). International review of leave policies and related research 2007. *Employment Relations Research Series*, no. 80. London: Department for Business, Enterprise and Regulatory Reform

Mutual Information System on Social Protection in the Community (MISSOC). (1994) *Social protection in the member states of the Community: situation on July 1st 1993 and evolution*. Cologne: Commission of the European Communities.

Mutual Information System on Social Protection (MISSOC). (1996). *Social protection in the member states of the European Union: situation on July 1st 1995 and evolution*. Brussels: Commission of the European Communities.

Mutual Information System on Social Protection (MISSOC). (1997). *Social protection in the member states of the European Union: situation on July 1st 1996 and evolution*. Luxembourg: Office for Official Publications of the European Communities.

Mutual Information System on Social Protection (MISSOC). (1999). *Social protection in the member states of the European Community: situation on 1st January 1998 and evolution*. Luxembourg: Office for Official Publications of the European Communities.

Mutual Information System on Social Protection (MISSOC). (2000). *Social protection in the member states of the European Union and the European Economic Area: situation on 1st January 2000.* Luxembourg: Office for the Official Publications of the European.

Mutual Information System on Social Protection (MISSOC). (2001). *Social protection in the member states of the European Union and the European Economic Area: situation on 1st January 2001*. Luxembourg: Office for Official Publications of the European Communities.

Mutual Information System on Social Protection (MISSOC). (2002). *Social protection in the member states of the European Union, of the European Economic Area and in Switzerland: situation on 1st January 2002*. Luxembourg: Office for Official Publications of the European Communities.

Mutual Information System on Social Protection (MISSOC). (2003). *Social protection in the member states of the European Union, of the European Economic Area and in Switzerland: situation on 1st January 2003*. Luxembourg: Office for Official Publications of the European Communities.

Mutual Information System on Social Protection (MISSOC). (2004). *Social protection in the member states of the European Union, of the European Economic Area and in Switzerland: situation on 1st January 2004*. Luxembourg: Office for Official Publications of the European Communities.

Mutual Information System on Social Protection (MISSOC). (2013). *MISSOC Comparative Tables.* [Online]. Brussels: European Commission. Available at: http://www.missoc.org/MISSOC/INFORMATIONBASE/COMPARATIVETABLES/MISSOCDATABASE/comparativeTableSearch.jsp [Accessed 16th Dec 2013].

Nordic Social Statistical Committee (NOSOCO). (1997). *Social protection in the Nordic countries 1995*. Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (1998). *Social protection in the Nordic countries 1996*. Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (1999). *Social protection in the Nordic countries 1997*. Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2000). *Social protection in the Nordic countries 1998*. Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2001). *Social protection in the Nordic countries 1999.* Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2002). *Social protection in the Nordic countries 2000*. Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2003). *Social protection in the Nordic countries 2001*. Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2004). *Social protection in the Nordic countries 2002.* Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2005). *Social protection in the Nordic countries 2003*. Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2006). *Social protection in the Nordic countries 2004.* Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2007). *Social protection in the Nordic countries 2005.* Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2008). *Social protection in the Nordic countries 2006/7*. Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2009a). *Social protection in the Nordic countries 2007/8*. Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2009b). *Social protection in the Nordic countries 2008/9*. Copenhagen: Nordic Social Statistical Committee.

Nordic Social Statistical Committee (NOSOCO). (2011). *Social protection in the Nordic countries 2009/10.* Copenhagen: Nordic Social Statistical Committee.

Organisation for Economic Co-operation and Development (OECD). (2013c). *OECD Family Database.* [Online]. Paris: OECD. Available at: http://www.oecd.org/social/soc/oecdfamilydatabase.htm [Accessed: 21st April 2013].

Sipilä, J. and Korpinen, J. (1998). Cash versus child care services in Finland. *Social Policy and Administration*, 32(3), 263-277.

The Social Insurance Institution Finland (TSII). (1997). *Statistical yearbook of the Social Insurance Institution*. Helsinki: The Social Insurance Institution.

Indicators of gender equality in employment

Indicator 1. Gender gap in the labour force participation rate (25-54 year olds)

Organisation for Economic Co-operation and Development (OECD). (2013a). *OECD Employment Database*. [Online]. Paris: OECD. Available at: http://www.oecd.org/els/emp/onlineoecdemploymentdatabase.htm [Accessed: 22nd November 2013].

Indicator 2. Gender gap in usual weekly working hours (25-54 year olds)

Organisation for Economic Co-operation and Development (OECD). (2013a). *OECD Employment Database*. [Online]. Paris: OECD. Available at: http://www.oecd.org/els/emp/onlineoecdemploymentdatabase.htm [Accessed: 22nd November 2013].

Indicator 3. Gender gap in the proportion of employees in 'female-type' occupations (all ages)

Eurostat. (2013). *Eurostat Labour Market Statistics.* [Online]. Luxembourg: Eurostat. Available at: http://epp.eurostat.ec.europa.eu/portal/page/portal/labour_market/introduction [Accessed: 21st July 2014].

International Labour Organization (ILO). (2014). *LABORSTA database.* [Online]. Geneva: International Labour Organization. Available at: http://laborsta.ilo.org/applv8/data/c1e.html [Accessed 28th April 2014].

Indicator 4. Female share of managerial employment (all ages)

Eurostat. (2013). *Eurostat Labour Market Statistics.* [Online]. Luxembourg: Eurostat. Available at: http://epp.eurostat.ec.europa.eu/portal/page/portal/labour_market/introduction [Accessed: 21st July 2014].

International Labour Organization (ILO). (2014). *LABORSTA database.* [Online]. Geneva: International Labour Organization. Available at: http://laborsta.ilo.org/applv8/data/c1e.html [Accessed 28th April 2014].

Indicator 5. Gender gap in the proportion of employees with top quintile annual earnings (dependent employees, 25-54 year olds, five-year intervals)

Luxembourg Income Study Database (LIS). (2014). *Luxembourg Income Study Database* (multiple countries; 1985-2010). [Online]. Luxembourg: Luxembourg Income Study. Available at: www.lisdatacenter.org [Accessed 16th May 2014].

Indicator 6. Gender gap in the labour force participation rate, by education level (low, medium and high education, 25-49 year olds)

Eurostat. (2013). *Eurostat Labour Market Statistics.* [Online]. Luxembourg: Eurostat. Available at: http://epp.eurostat.ec.europa.eu/portal/page/portal/labour_market/introduction [Accessed: 21st July 2014].

Indicator 7. Female share of managerial employment amongst managers with a given level of education (low, medium and high education, all ages)

Eurostat. (2013). *Eurostat Labour Market Statistics.* [Online]. Luxembourg: Eurostat. Available at: http://epp.eurostat.ec.europa.eu/portal/page/portal/labour_market/introduction [Accessed: 21st July 2014].

Indicator 8. Gender gap in the proportion of employees with top quintile annual earnings, by education level (low, medium and high education, dependent employees, 25-54 year olds, five-year intervals)

Luxembourg Income Study Database (LIS). (2014). *Luxembourg Income Study Database* (multiple countries; 1985-2010). [Online]. Luxembourg: Luxembourg Income Study. Available at: www.lisdatacenter.org [Accessed 16th May 2014].

Control Variables

Control 1. Service sector employment as a proportion of total employment

Organisation for Economic Co-operation and Development (OECD). (2013d). *OECD Statistics Extracts*. [Online]. Paris: OECD. Available at: http://stats.oecd.org/ [Accessed: 25th Nov 2013].

Control 2. Government employment as a proportion of the labour force

Organisation for Economic Co-operation and Development (OECD). (2013d). *OECD Statistics Extracts*. [Online]. Paris: OECD. Available at: http://stats.oecd.org/ [Accessed: 25th Nov 2013].

Control 3. The employment protection legislation index

Organisation for Economic Co-operation and Development (OECD). (2013b). *OECD Employment Protection Indicators.* [Online]. Paris: OECD. Available at: http://www.oecd.org/employment/emp/oecdindicatorsofemploymentprotection.htm [Accessed 16th Nov 2013].

Control 4. The economic freedom index

Gwartney, J., Lawson, R. and Hall, J. (2013). *2013 Economic Freedom Dataset. Economic Freedom of the World: 2013 Annual Report*. [Online]. Vancouver, CA: Fraser Institute. Available at: http://www.freetheworld.com/datasets_efw.html [Accessed 11th February 2014].

Control 5. Crude birth rate

World Bank. (2012). *World Development Indicators*. [Online]. Washington D.C.: World

Bank. http://data.worldbank.org/data-catalog/world-development-indicators [Accessed: 21st July 2014].

Control 6. The female share of enrolment in tertiary education

United Nations Educational, Scientific and Cultural Organisation (UNSECO). (2013). Paris: UNESCO. *UNESCO Institute for Statistics Data Centre*. [Online]. Available at: http://stats.uis.unesco.org/ [Accessed: 5th December 2013].

Control 7. The female employment-to-population rate (25-54 year olds)

Organisation for Economic Co-operation and Development (OECD). (2013a). *OECD Employment Database*. [Online]. Paris: OECD. Available at: http://www.oecd.org/els/emp/onlineoecdemploymentdatabase.htm [Accessed: 22nd November 2013].