

**The Impact of the Minimum Wage on Older
Workers in South Korea**

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Abstract

The purpose of this thesis is to explore the effects of the minimum wage on older workers in South Korea and seek a better understanding of the effects in the context of the minimum wage policy process. Using the KLIPS 2004-2013, this study examines the effects of the minimum wage on the distributions of wages and family earnings, employment, and exits from in-work poverty among older employees aged 55 or over. Two government periods with the highest rates of increase in the minimum wage and the lowest rates of increase were compared. The results show that the minimum wage during the period with the highest growth rates raised wages, marginally reducing the wage gap, but had insignificant effects on the distribution of family earnings and the odds of individuals' exits from in-work poverty. For the period with the lowest growth rates, the minimum wage slightly improved the median of wages and of family earnings, marginally reducing the wage gap, but decreased the chance to exit from in-work poverty. An adverse employment effect was not found for both periods. This thesis proposed a political economy framework and analysed the Minimum Wage Council's annual reports on the fixing process 2003-2012. The findings show that the effects for the period with the highest growth rates were associated with the role of the minimum wage preserving the monthly pay as a result of the reduction of working hours and the exemption of and the subminimum for surveillance or intermittent work. The effects for the period with the lowest growth rates were related to the minimum wage increases slightly higher than annual pay awards, its role of preserving monthly pay consequent upon the reduction of working hours, and the subminimum for surveillance or intermittent work.

Table of Contents

Chapter One	Introduction	1
Chapter Two	The Minimum Wage	17
Chapter Three	Older Workers in the Labour Market	35
Chapter Four	Older Workers: Labour Market Status and Minimum Wages	53
Chapter Five	Theoretical Framework and Research Methods	96
Chapter Six	The Factual Context for the Case Study of South Korea	148
Chapter Seven	The Effects of the Minimum Wage on Older Workers in South Korea	177
Chapter Eight	Political Economy of the Impact of Minimum Wages	211
Chapter Nine	Conclusion	258
Appendix		270
Bibliography		288

List of Tables

Table 1.1 The Proportion of Employers and Workers Participating in Workplace Pension Schemes in South Korea, 2015-2016 (%).....	7
Table 2.1 Minimum Wage Fixing Procedures among OECD Countries	23
Table 2.2 Minimum Wage Fixing Criteria among OECD Countries	27
Table 3.1 Part Time Employees Aged 55-64 and 65+ by Country in 2011	44
Table 3.2 Temporary Employees Aged 55-64 and 65+ by Country in 2011...	46
Table 4.1 Pension Ages and Financial Work Incentives/Retirement Disincentives by Type of Scheme in OECD Countries	68
Table 4.2 Limits to Combining Work and Pensions	71
Table 4.3 Studies of Minimum Wage Effects and Older Workers.....	84
Table 6.1 Changes in Minimum Wage Rates in South Korea (KRW/GBP/USD; %; thousand persons)	151
Table 6.2 Empirical Studies about the Effects of the Minimum Wage in South Korea.....	166
Table 7.1 Characteristics of 55+ Employees, 2004-2013	179
Table 7.2 Estimated Models for Changes in the Percentiles of Log Hourly Wages among 55+ Employees, 2004-2008 and 2009-2013.....	186
Table 7.3 Estimated Models for Changes in Employment & Unemployment among 55+ Employees, 2004-2008 and 2009-2013.....	191
Table 7.4 Descriptive Statistics of 55+ Employees by Covariates, 2004-2008 & 2009-2013	193
Table 7.5 Estimated Fixed-effects Models of Transitions from being Employed among 55+ Employees, 2004-2008 and 2009-2013	195
Table 7.6 Estimated Random-effects Models of Transitions from being Employed among 55+ Employees, 2004-2008 and 2009-2013	196
Table 7.7 Estimated Models for Changes in the Percentiles of Log Family Earnings among 55+ Employees, 2004-2008 and 2009-2013	200
Table 7.8 Descriptive Statistics of 55+ Working Poor by Covariates, 2004-	

2008 & 2009-2013.....	204
Table 7.9 Estimated Fixed-effects Models for Transitions from In-Work Poverty among 55+ Employees, 2004-2008 and 2009-2013.....	206
Table 7.10 Estimated Random-effects Models for Transitions from In-Work Poverty among 55+ Employees, 2004-2008 and 2009-2013.....	207

List of Figures

Figure 1.1 Average Normal and Effective Retirement Age in OECD Countries by Sex, 1970-2015.....	1
Figure 1.2 Average Age of Retirement from Lifetime Main Job in South Korea, 2005-2017.....	4
Figure 1.3 Effective Age of Labour Market Exit and Normal Pensionable Age in South Korea	5
Figure 1.4 The Share of Beneficiaries of the National Pension among Those Aged 60+ in South Korea (%)	6
Figure 1.5 Income Sources of Older People Aged 60+ in South Korea (%)....	8
Figure 3.1 Labour Force Participation Rates by Age Group in OECD Countries, 1970-2011 (%).....	37
Figure 3.2 Labour Force Participation Rates of Workers Aged 55+ by Sex and Age Group in OECD Countries, 1995-2015 (%).....	37
Figure 3.3 Labour Force Participation Rates of Workers Aged 55-64 among OECD Countries, 1970-2011 (%)	38
Figure 3.4 Employment Rates by Age Group in OECD Countries, 1970-2011 (%).....	40
Figure 3.5 Employment Rates of Older Workers Aged 55+ by Sex and Age Group in OECD Countries, 1995-2015 (%)	40
Figure 3.6 Employment Rates of Workers Aged 55-64 among OECD Countries, 1970-2011 (%).....	41
Figure 3.7 Incidence of Part Time Employment by Age Group in OECD Countries, 2000-2011 (%).....	42

Figure 3.8 Incidence of Part Time Employment among Workers Aged 55-64 and 65+ by Sex in OECD Countries, 2001-2016 (%)	43
Figure 3.9 Incidence of Temporary Employment by Age Group in OECD Countries, 2000-2011 (%).....	45
Figure 3.10 Incidence of Temporary Employment among Workers Aged 55-64 and 65+ by Sex in OECD Countries, 2001-2016 (%)	45
Figure 3.11 Sectoral Employment Structure by Sector and Age Group in EU 25, 2011 (%).....	47
Figure 3.12 Annual Employment Growth by Sector and Age Group in EU 25, 2008-2011	48
Figure 3.13 Proportion of Low-Wage Earners by Age Group in EU Countries, 2010 (%).....	49
Figure 3.14 Changes in Proportion of Low-Wage Earners Aged 50+ in EU Countries, 2006-2010 (%).....	50
Figure 3.15 Gender Pay Gap among Older Workers Aged 55-64 and 65+ in EU Countries, 2010 (%).....	51
Figure 4.1 Factors Influencing Labour Market Status of Older Workers.....	59
Figure 6.1 Process of Minimum Wage Deliberation and Determination in South Korea.....	150
Figure 6.2 Growth in Minimum Wage, Annual Inflation (CPI) & GDP per Capita, and Minimum Wage Relative to Average Wage of Full-Time Workers in South Korea, 1988-2013 (%)	152
Figure 6.3 The Share of Employees Paid Less than the Minimum Wage in South Korea, 2001-2013 (%)	153
Figure 6.4 Changes in Labour force Participation, Employment and Unemployment among Workers Aged 50 + in South Korea, 2000-2014 (%)	155
Figure 6.5 Changes in the Growth Rate in Population, Labour force Participation and Employment among Workers Aged 50+ in South Korea, 2001-2014 (%).....	156
Figure 6.6 Changes in Employment Status of Workers Aged 50+ in South Korea, 2007-2013 (%)	157
Figure 6.7 Changes in Industrial Composition among Workers Aged 55-79 in	

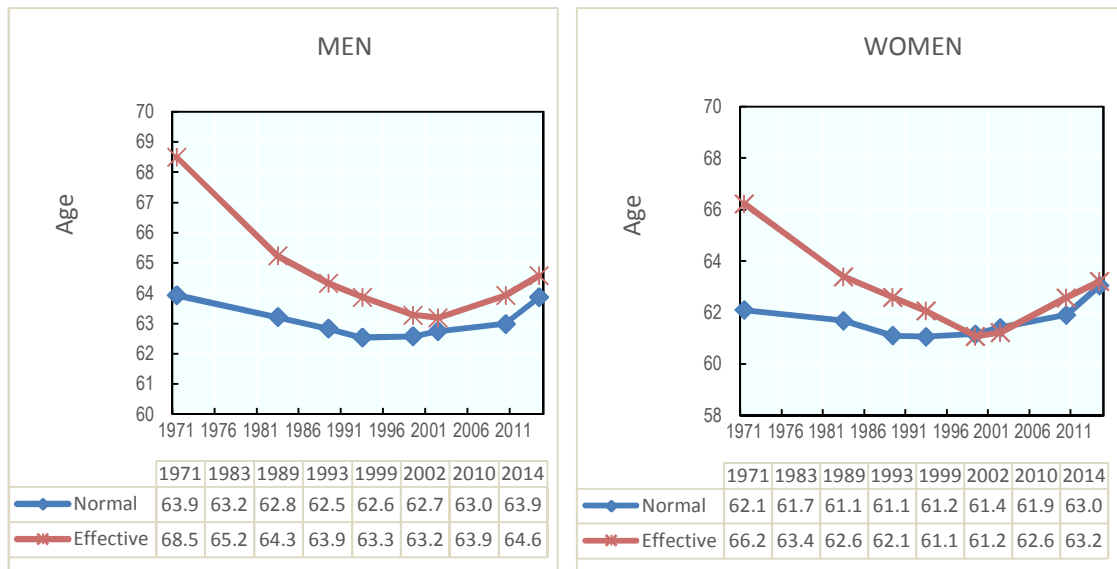
South Korea, 2005-2014 (%)	158
Figure 6.8 Changes in Occupational Composition among Workers Aged 55-79 in South Korea, 2005-2014 (%)	159
Figure 6.9 Changes in the Ratios of Monthly Wage & Hourly Wage among Employees 50+ to among Those Aged 30-49 and Weerky Hours Worked by Age Group in South Korea (% , hrs)	160
Figure 6.10 Changes in the Proportion of Older Employees Earning Less Than 50% of the Median Wage in South Korea (%).....	161
Figure 7.1 Wage Distribution of 55+ Employees, 2004-2008 and 2009-2013	181
Figure 7.2 Distribution of Monthly Family Earnings among 55+ Employees, 2004-2008 and 2009-2013	198

Chapter One Introduction

Overview of Topic

The era when early retirement was a norm in the workplace, in which retirees rarely returned to the labour market and few workers were likely to be paid at or near a minimum wage, disappeared almost twenty years ago (Fang and Gunderson, 2009). The labour market exit age, which had dropped sharply mainly due to the maturing of pension systems and early retirement schemes, has been gradually increasing since the early 2000s, following the rise in the normal pensionable age (OECD, 2017, pp.48-49; Figure 1.1). As the life after retirement was no longer being supported by pension plans as before, the labour force participation of older workers and their employment have increased since the mid-1990s, and a growing number of older workers have been engaged in low paid jobs (see Chapter Three).

Figure 1.1 Average Normal and Effective Retirement Age in OECD Countries by Sex, 1970-2015



Source: OECD, Pension at a Glance 2017, p.49

Note: The normal retirement age refers to the average normal pensionable age; the effective retirement age is defined as the average labour market exit age which is estimated by OECD from observed changes in participation rates over a five-year period for successive cohorts of workers (by five-year age groups) aged 40 and over. For the effective retirement age, each indicated year points to the end year of each five-year period.

Along with the changes in older workers' economic activity, research about their status in the labour market has developed from pension-focused research on retirement to multiple factors studies on retirement and further to studies on employment and age discrimination in the labour market. However, despite a large amount of research with regard to the status of older workers in the labour market, little attention has been paid to the issue of their earned income. Considering the fact that financial need is one of the most decisive factors for workers to remain in employment in their later life, the issue of earned income among older workers is of importance. Further, the tendency among a growing number of older workers to be hired in low paid jobs arouses interest in the influence on older workers of policies for the low paid.

The minimum wage is the most popular policy for low paid workers, but its efficacy is controversial. Twenty six out of 34 OECD countries have statutory minimum wages in place, and in the eight OECD countries that do not have a statutory minimum wage, a large portion of the workforce is covered by the wage floors specified by sector-level collective agreements (OECD, 2015, p.1). Despite its prevalence, the effects of the minimum wage have been very debatable, particularly in terms of employment and in-work poverty. This has relevance mainly to two points. One is that the research on the minimum wage has been focused mainly on younger workers who were regarded as the group most affected by an increase in the minimum wage. The other is that the effects of the minimum wage have been explained almost exclusively by economic theories of the labour market. The first point implies that workers in other vulnerable groups, such as women, disabled workers and older workers, were relatively less explored in the field. In fact, Fang and Gunderson's work (2009) on the minimum wage effects on older workers' employment is the only study focusing on this group. Based on studies that have devoted attention mainly to younger workers, a common argument is that the minimum wage is not a useful tool to improve household incomes among low paid families and to enable the working poor to exit from poverty because 'most of the benefits of minimum wage increases goes to second or third earners living in households well above the poverty line' (Sabia and Burkhauser, 2010, p.595).¹ However, in as much as workers in the groups less focused on by the research on the minimum wage are more likely to be the primary or indispensable secondary earners in their households, the argument should be examined further through research into other vulnerable groups affected by the minimum wage. The second point, the dominance of

economic theory in this research field provides limited explanations of the conflicting empirical evidence, particularly of employment effects of the minimum wage.

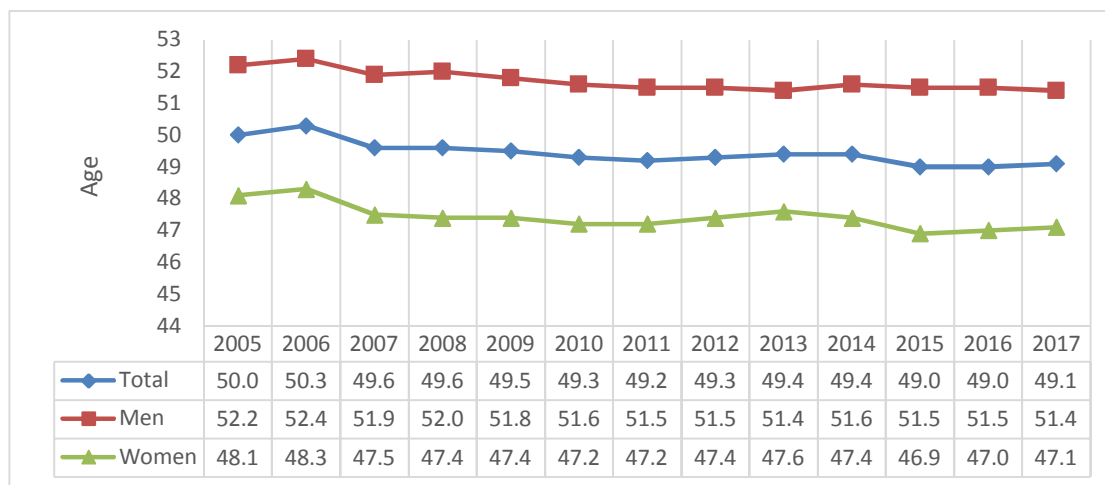
Considering that the minimum wage is a public policy in which conflicting interests among major groups of society, such as government, employers and employees, are involved and which is made through a political process, an alternative explanation involving both economic and political features of minimum wage policy is needed for fuller and contextual accounts of the minimum wage effects.

In recognition of problems presented above, this thesis mainly aims to explore the effects of the minimum wage on older workers in the context of South Korea. Korea is one of the countries where the population is the most rapidly ageing due to the decreasing fertility rate and the increasing life expectancy. As the share of those aged 65 years and older was 14.02 per cent in August, 2017, Korea has become an ‘aged society’ 17 years after it entered the ‘ageing society’ group in 2000 (Kim, S-M and Chang, H-T, 2017). According to the National Statistical Office of Korea [통계청] (2017, p.15), the share is projected to be 41.0 per cent in 2060. The gender ratio is 57.5 per cent for women and 42.5 per cent for men in 2007; however, the gap in the ratio is projected to decline to 4.6 per cent by 2060 (The National Statistical Office of Korea [통계청], 2017, p.16). Life expectancy at birth increased from 51.1 years in 1960 to 76.2 years in 2010 for men and from 53.7 to 82.9 years for women, and it is expected to be 82.9 for men and 88.9 for women in 2050 (Choi, S-J, 2015, p.58).

Despite the significant increase in life expectancy, the actual age at which workers retire from their lifetime main jobs is very low. The survey which was conducted in 2001 by the Ministry of Labour [노동부] among firms with 300 plus employees showed that the prevalent retirement age was 55 and the average was 56.7 years (Phang, H-N, 2011, p.57). According to Supplementary Results (for the Old Population) of the Economically Active Population Survey [경제활동인구조사 (고령층) 부가조사], the actual age of retirement from lifetime main jobs among those aged between 55 and 64 was 52.2 in 2005, 51.5 in 2011 and 51.4 in 2017 for men and 48.1, 47.2 and 47.1 for women, respectively (Figure 1.2). This is because mandatory retirement has been very prevalently practiced among firms in Korea and the regulated retirement age, particularly in the private sector, has often been set at a very low age ranged from 55 to 60 (Phang, H-N, 2011; Choi, S-J, 2015), relying on the absence of ‘law which governs

mandatory retirement age, except for the public sector’ (Choi, S-J, 2015, p.60). Very recently, the mandatory retirement age should be set at the age of 60 years or over under the Act on Prohibition of Age Discrimination in Employment and Elderly Employment Promotion [고용상 연령차별금지 및 고령자고용촉진에 관한 법률], which has been applied to firms with 300 employees and over and public organisations from 2016 and to firms with less than 300 workers and state agencies and local governments from 2017 (The Ministry of Employment and Labor [고용노동부], 2016).

Figure 1.2 Average Age of Retirement from Lifetime Main Job in South Korea, 2005-2017



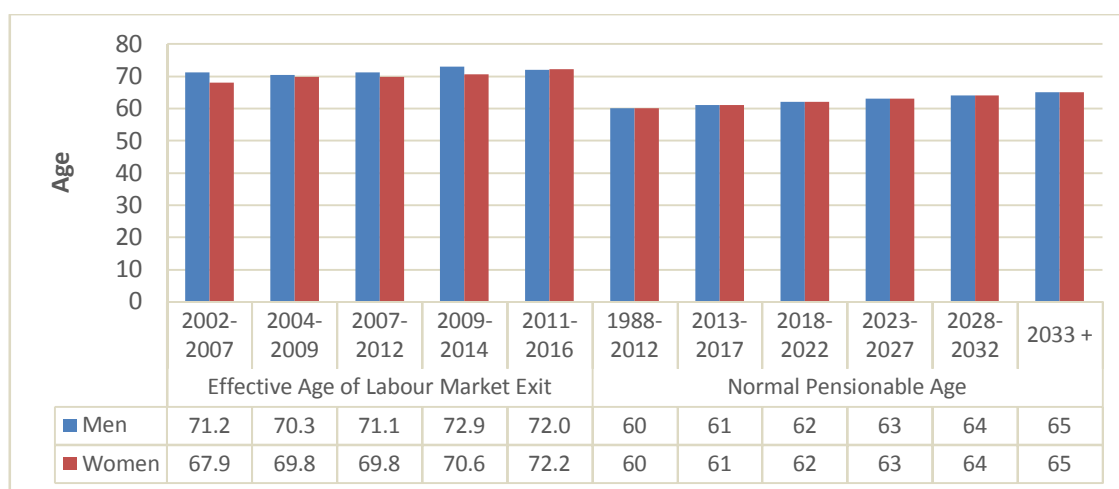
Source: The National Statistical Office of Korea, Supplementary Results (for the Old Population) of the Economically Active Population Survey (every May in each year) [경제활동인구조사 (고령층) 부가조사 (각 연도 5월)]

Note: The average age of retirement from lifetime main job refers to the average age at which those aged between 55 and 64 retired or transferred from their lifetime major jobs.

The actual age of retirement from a lifetime main job is well below the pensionable age and effective age of exit from the labour market in Korea. As shown in Figure 1.3, the normal pensionable age was originally set at 60 years for both men and women but has been increasing by one year per five-year term from 2013 to 2033 under the National Pension (Amendment) Act 2011 [국민연금법], reaching 61 between 2013 and 2017, 62 between 2018 and 2022, 63 between 2023 and 2027, 64 between 2028 and 2032 and 65 by 2033. The average effective age of exit from the labour market was 70.3 for men and 69.8 for women for the period of 2004-2009, increased to 72.9 and 70.6 respectively over the period 2009-2014 and led to 72.0 and 72.2 for each over the period 2011-2016. These facts suggest that Korean older people are likely to experience financial difficulties and tend to remain at the workforce almost 20 years longer after retiring from their lifetime main jobs. In terms of the labour force participation, ‘the old-age

participation rates for both Korean men and women are slightly or considerably higher than the average rate of OECD or European Union countries' (Phang, H-N, 2011, p.55). Such high participation and employment rates among the old age were due to retirees' self-employment and those engaged in the agricultural and fishery industry; however, the numbers of both have considerably decreased since the middle of the millennium whereas the number of wage workers, particularly engaged in low paid jobs, has significantly increased among older people (see Chapter Six).

Figure 1.3 Effective Age of Labour Market Exit and Normal Pensionable Age in South Korea

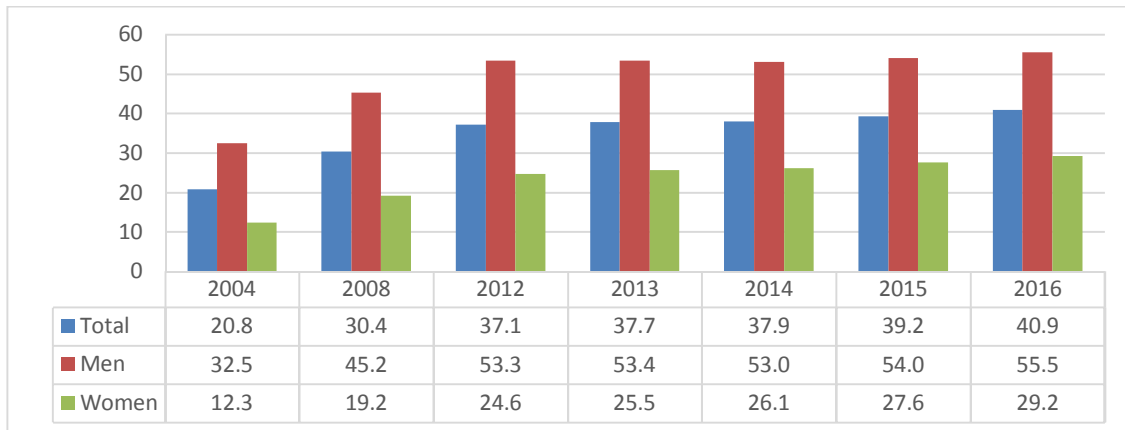


Source: OECD, Society at a Glance 2009 for the average effective age of labour market exit over the period 2002-2007; OECD, Pension at a Glance 2011, 2013, 2015 & 2017 for the average effective ages over the period 2004-2009, 2007-2012, 2009-2014 and 2011-2016, respectively; Article 21 of the supplementary provisions of the National Pension (Amendment) Act 2011 [국민연금법 부칙 21조] for normal pensionable ages

Note: The average effective age of labour market exit was estimated by OECD from observed changes in participation rates over a five-year period for successive cohorts of workers (by five-year age groups) aged 40 and over.

Meanwhile, retirement income provisions have been long underdeveloped. As seen in Figure 1.4, the state pension which was introduced in 1988 covered only 30.4 per cent of those aged 60 years and over in 2008 and 40.9 per cent in 2016. Especially among women, the share of the state pension beneficiaries has been much lower, staying at less than 30 per cent until 2016. This low share among women can be understood mainly as attributable to the fact that they have been more likely to be engaged in low-wage, irregular jobs in which employers have not provided the four major public insurances, including the National Pension, the National Health Insurance, Employment Insurance and Industrial Accident Compensation Insurance and less likely to maintain their subscription to the pension stable due to career discontinuity which is involved in childbirth and child-rearing plus employment instability.

Figure 1.4 The Share of Beneficiaries of the National Pension among Those Aged 60+ in South Korea (%)



Source: The National Pension Service, National Pension Statistical Yearbook (each year) [국민연금통계연보 (각연도)] for the number of beneficiaries of the National Pension; The National Statistical Office of Korea, Population Projections for Korea [장래추계인구] for the projected number of people aged 60+

Note: The share of beneficiaries was calculated by (the number of beneficiaries among those aged 60+/ the projected number of people aged 60+)*100 in each year.

Retirement allowance ‘which was introduced in 1953 under labour legislation’ and ‘has provided retiring employees with an immediate lump-sum cash payment’ has played a critical role of old-age income security (Klassen and Yang, 2010, pp.7-8). The retirement allowance has typically become either ‘start-up capital’ for being self-employed or ‘a financial cushion for the transition from the primary to invariably precarious, secondary labour market’ (Klassen and Yang, 2010, p.8). But, as the idea of ‘a lifelong workplace’ which had been prevalent in Korea has disappeared under the influence of labour market flexibilization and the bank interest rates has considerably fallen with the financial reforms since the late 1990s, the retirement allowance has not amounted as much as before. Since 2005, employers can replace the retirement allowance with a workplace pension scheme under the Employee Retirement Benefit Security Act [근로자퇴직급여보장법]. Table 1.1 shows the proportions of employers and workers who participated in workplace pension schemes in 2015 and 2016. By 2016, only 10.9 per cent of employers with less than 5 employees and 40.3 per cent of those with 5-29 employees instituted a company pension scheme while employers with less than 30 employees comprised 93.6 per cent of the targeted establishments. For workers, half of all those eligible were enrolled in a company pension scheme by 2016; however, the enrolment decreased with age among those aged 50 years and over, and there was a sizeable gap between men and women, except among those aged 60 years and over.

Table 1.1 The Proportion of Employers and Workers Participating in Workplace Pension Schemes in South Korea, 2015-2016 (%)

Employers					Workers						
Size	Participating		Targeted		Age	Total		Men		Women	
	2015	2016	2015	2016		2015	2016	2015	2016	2015	2016
Total	25.6	26.9	100.0	100.0	All ages	47.9	50.0	50.2	52.2	44.3	46.6
Less than 5	9.7	10.9	52.0	53.6	50 - 54	46.0	48.6	48.8	51.6	41.8	44.0
5 - 29	37.5	40.3	41.3	40.0	55 - 59	40.0	42.8	41.2	44.2	38.1	40.6
30-299	74.5	76.6	6.3	6.0	60 - 64	31.4	33.6	30.7	33.0	32.7	34.6
300 and over	88.2	88.1	0.4	0.4	65+	22.1	25.9	23.3	25.9	19.6	25.7

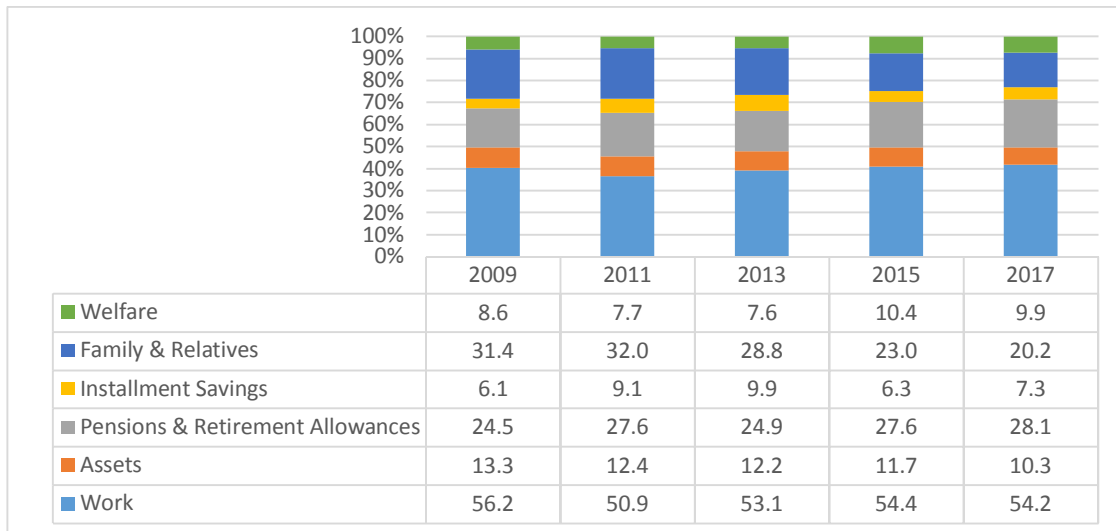
Source: The National Statistical Office of Korea, (2017). Retirement Pension Statistics in 2016 [2016년 기준 퇴직연금통계]

Along with the state pension, retirement allowance and workplace pensions, personal pensions had begun in 1994 in Korea. But they tend to be regarded as a financial product for preparation for retirement rather than as an old age social security system, and in this regard, individuals show a propensity to join several insurance plans and not to stay with them (Jeong, W-S, Kang, S-H and Lee, S-W, 2014, p.18).

These public transfers and private pensions account for less than 30 per cent of the total income for Koreans aged 60 years and over (Figure 1.5). The rest mainly comes from individuals' own work and support from family and relatives; however, as shown in Figure 1.5, the latter has been gradually eroded whereas the former has stayed above 50 per cent. The weakened family support is attributed to increase in women's participation in the labour market (Klassen and Yang, 2010), to fewer resources available as a result of fewer children (Phang, H-N, 2011) and, most of all, to the change in both children's and old ages' ideas and values relating to caring for the aged. This suggests the importance of income from older people's own work in Korea, despite the ongoing development of the pension system.

Responding to the needs of work among older people and the expected increase in social expenditures as a result of the population ageing, the Korean government has developed a variety of measures to promote older workers' employment, including 'salary peak system' in which employers cut salaries of their employees being a certain age but, instead, ensure the employees' employment until normal retirement age and subsidies to employers who hire and retain older workers. 'There are four types of

Figure 1.5 Income Sources of Older People Aged 60+ in South Korea (%)



Source: The National Statistical Office of Korea, Social Survey, every other year [사회조사, (각 조사 연도)]
 Note: Income from work includes earnings and income from business; income from assets includes profits from interests, dividends and real estates; pensions refers to both public and private ones; and welfare refers to resource-tested benefits and support from government or social groups.

subsidies under the Employment Insurance System [고용보험제도] which was introduced 1995: subsidy to promote over-quota (6%) employment of older workers, subsidy to promote newly employing older workers, subsidy to promote extended employment of retiring workers and subsidy to promote older workers upon completion of subsidised job training’ (The Ministry of Labor [노동부], 2009, quoted in Phang, H-N, 2011, p.59). These can be promptly effective measures to improve employment among older workers; however, they include, arguably, the nature of age discrimination against older workers in terms of wages, or could make their target population more vulnerable in employment in the long term unless they run parallel with a measure to change employers’ perceptions of older workers, which seem to be more critical in as much as the rates of employers taking up the government employment measures for older workers are very low, and further, the main reason not to take up the ‘salary peak system’ is the recent increase of the mandatory retirement age to 60 under the amendment of the Act on Prohibition of Age Discrimination in Employment and Elderly Employment Promotion [고용상 연령차별금지 및 고령자고용촉진에 관한 법률] (Jung, S-Y, 2016).

The policy practices presented above shows that Korean government’s approaches to the improvement of older workers’ status in the labour market have ruled out the consideration of their wages, focusing on their employment or tends to have reflected

employers' perceptions of older workers and wider 'age culture' which is 'the shorthand description of social norms, values, ideals or perceptions in society that structure the ideas of the age-work relationships' (De Vroom, 2004, p.8) as the salary peak system shows. But, allowing for the available income sources in old ages described above, financial needs are likely to be a main driver for Korean older workers to remain longer at the workforce; however, as the labour market has been dramatically changed since the IMF bailout in 1998, and as a result, insecure, low paid jobs have exploded throughout the first decade of the millennium, older workers have been more likely to be engaged in low paid jobs due to their vulnerability in the labour market. This disparity between their financial needs for work and status in the labour market, particularly in terms of wages, have rarely been considered or not well addressed in the context of a more common public policy practice for the improvement of wages among vulnerable groups of workers.

The minimum wage is a typical wage-governing public policy for low pay workers in Korea as in many other countries. The Minimum Wage Act was enforced in 1988 along with the massive eruption of the labour union movement in the late 1980s (Yun, A-L, 2014). The minimum wage has been applied to all employers with one employee or more since 2000, with the exception of domestic workers, seamen and those with a very limited working capacity due to their physical and mental disabilities and has begun to get attention from trade unions and the general public in the early 2000s. A subminimum for older workers have been discussed within the Minimum Wage Commission in the late 2000s, with the concern of likely disemployment among them. However, the discussion was not based on any evidence of the minimum wage effects on older workers, and the consideration of a subminimum for the group of workers was finally discarded for the reason that it would be against the Act on Prohibition of Age Discrimination in Employment and Elderly Employment Promotion [고용상 연령차별 금지 및 고령자고용촉진에 관한 법률]. The tendency that minimum wage discussion has not been founded on research evidence, especially with regard to older workers, is partly because research on the minimum wage in Korea has paid less attention to older workers than other groups.

Based on these circumstances surrounding older workers presented so far, this thesis explores the effects of the minimum wage on older workers in South Korea. How

minimum wages affect the distributions of wages and family incomes, employment, and the exit from poverty among older workers are examined through a comparison between two consecutive government periods which have a large gap in the rates of increase in the minimum wage. The comparison is to figure out whether the differences in the rate of increase in the minimum wage lead to different effects of the minimum wage among older workers, on the one hand and to verify the relevance of theoretical explanations for the effects, on the other hand. This thesis also aims to construct an alternative theoretical explanation for the effects of minimum wages which takes account of both economic and political attributes of the minimum wage as a public policy. Based on the alternative theoretical framework, the empirical results of the minimum wage effects on older workers will be further discussed, which involves a qualitative analysis of the minimum wage fixing process.

Research Questions

Three closely related questions are addressed in this thesis. First, *how the minimum wage affects the distributions of wages and family earnings, employment and exits from in-work poverty among older workers*. In more detail, this includes how the minimum wage changes the distributions of wages and family earnings of older workers, whether increases in the minimum wage reduce older workers' employment and whether increases in the minimum wage raise the odds of exit from in-work poverty among older workers. These questions aim to figure out the overall characteristics of economic effects of the minimum wage on older workers. Second, *whether different rates of increase in the minimum wage have different effects among older workers*. The second question is to examine variations and uniformity in the effects of the minimum wage among older workers by comparing two government periods when the minimum wage was increased at distinctively different levels. This examination has special interests in the effects on employment and on the exit from in-work poverty. With regard to the employment effect, Fang and Gunderson (2009) argue that the positive employment effect for older workers is a typical characteristic of the minimum wage in Canada, compared to the fickle employment effects for younger workers. This thesis is interested in whether non-adverse employment effects are more likely among older employees. Also, it has been widely argued, based mainly on younger workers who are paid a minimum wage but not the primary earners in their households, that the minimum wage

is a blunt tool to help working families in poverty. However, in as much as older workers are more likely to be the primary earners in their households, whether higher minimum wages tend to give better chances of leaving poverty than lower ones should be examined among older employees. Further, this comparison of two government periods with different rates of increase in the minimum wage is connected to the third question of exploring the relation between the minimum wage effects on older workers and the political factors involved. The third question, *how the empirical results of the minimum wage effects on older workers can be understood* is to seek an alternative explanation for the minimum wage effects in which both political and economic attributes of the minimum wage as a public policy are taken into account. A political economy theoretical framework for minimum wage effects will be proposed after the review of the existing explanations; and the empirical results of minimum wage effects on older workers will be further discussed through a contextual analysis which is conducted based on the newly suggested theoretical framework.

Contributions

This study could help to fill the gap in the literature with regard to the impact of minimum wages on older workers. As stated earlier, the subject of this thesis was motivated by the vacuum in the research on older workers' earned income. Particularly, minimum wage research has excluded older workers as a research focus, as Fang and Gunderson (2009, p.371) stated 'to my knowledge, there are no studies that focus on the impact on older workers'. Even after the first and only study, there has been little subsequent work exploring the effects of the minimum wage focusing on older workers. Considering the facts that a growing number of older workers have been working in their later life for financial reasons, the number of older adults living in poverty has been sharply growing, and the transformed labour market conditions are more likely to provide low paid jobs to older workers, this study takes a significant step in the research on low paid older workers' earnings and, more specifically, in the one on the minimum wage effects on older workers by extending the research subjects to wages, family incomes, employments and poverty as well as by adding new empirical evidence. Moreover, this study is the first try to explore the impact of minimum wages on older workers in South Korea. Although the effects with regard to older workers have been partially presented in some studies and a study examined the effect of the minimum

wage on labour demand in surveillance or intermittent work in which the majority of workers were the aged, there are no comprehensive analysis that focused on older workers. This study could provide a starting point for the study of the minimum wage effects on older workers in Korea.

This thesis is also likely to broaden and deepen understanding of the minimum wage effects. One of the main purposes of this research is to explore an alternative explanatory framework for the minimum wage effects and to conduct a contextual analysis of the minimum wage fixing process based on the framework for a fuller understanding of the effects. Economic theories which have been exclusively dominant in minimum wage research provide limited accounts with regard to some controversial effects of the minimum wage, despite their strong explanatory power. The alternative explanatory framework which will be constructed in this thesis as a result of reviewing existing theories contains political attributes as well as economic ones of the minimum wage as a public policy, in as much as the framework takes into account the policy process relating to the minimum wage. The point that the framework is based on minimum wage policy process indicates that the explanatory framework for the minimum wage effects newly proposed in this thesis will be universally applicable, though this study focuses on older workers and the minimum wage fixing process. The contextual analysis of the minimum wage fixing process based on the theoretical framework will provide a more concrete understanding of the resulting effects of the minimum wage. This also calls attention to the importance of using both quantitative and qualitative research methods in research field of the minimum wage.

Further, this study would provide important implications for minimum wage policy, particularly with regard to the target groups of the policy. A growing number of older workers in many countries are expected to have been under the influence of the minimum wage, but they have supposedly been a low concern group in the minimum wage policy process. This study calls the attention of decision-makers involved in the minimum wage policy process to the necessity of considering older workers as a vulnerable group in the labour market who are critically influenced in many ways by minimum wage policy. Further, the discussion of the empirical results through the contextual analysis of the minimum wage fixing process provides the decision-makers with policy implication of how the interaction between the minimum wage and other

closely related policies, which is changed typically by a government's policy orientation and the dynamics of power among stakeholders, can be related to the minimum wage effects on a specific target group. This is different from the typical emphasis on the earned income tax credit (EITC) as an alternative measure for the increase in the minimum wage to boost income among low paid workers.

The Structure of the Thesis

The remaining chapters of the thesis are broadly divided into four parts. The first part is the basic background literature and data survey of the minimum wage and older workers in the labour market (Chapter Two and Three). The second part is a comprehensive review of existing literatures on the status of older workers in the labour market and on the effects of the minimum wage with regard to older workers (Chapter Four). In the third part, theoretical perspectives and research methods will be discussed (Chapter Five). The last part is the Korean case study intended to examine the three main research questions and a Conclusion (Chapter Six, Seven, Eight and Nine).

Chapter Two looks at the minimum wage systems among the OECD countries. Using the ILO Working Conditions Laws Database of Minimum Wages, minimum wage fixing procedures and criteria are analysed to identify the characteristics of the minimum wage and to narrow down the research focus based on the identified purposes of minimum wages. Chapter Three surveys the characteristics of older workers in terms of how a significant proportion of older workers is active in the workforce, what sectors, occupations and types of contract older workers are in and what their wage levels are. Chapter Four consists of broadly two parts. In the first part of the chapter, the research about the status of older workers in the labour market will be reviewed. The main purpose of this review is to figure out what factors determine the status of older workers in the labour market. This review shows that little attention has been paid to the issue of earned income among older workers. For the second part of this chapter, research about the effects of the minimum wage is reviewed, with a special focus on older workers. This displays how little attention has been paid to older workers in the field of minimum wage research.

Chapter Five also consists of broadly two parts. In the first part, a variety of theories of the minimum wage, such as the neoclassical models, monopsony models, the Keynesian

approach and political economy approaches are discussed. This is ultimately for exploring a plausible theoretical framework to explain the effects of the minimum wage based on both political and economic attributes of the policy. A political economy framework for an enhanced understanding of empirical results will be proposed at the end of the first part. The second part describes research methods, data, and analyses procedures used for this research. In this part, the necessity to employ a contextual analysis with qualitative data as a supplementary method for understanding the minimum wage effects is argued in association with the alternative theoretical framework sought in the first part of this chapter.

Chapter Six, as the first chapter of the case study of South Korea, provides an overview of the national minimum wage and the status of older workers in the labour market in Korea. It includes brief history of the Minimum Wage Act [최저임금법], its current system and changes in its level and influence and also surveys labour market participation and employment among those aged 50 years and over, industrial sectors, occupations and types of employment which they are involved in and their wage levels. In the final section of this chapter, public debate and empirical studies about the minimum wage in Korea are reviewed with a special interest in older workers. Chapter Seven examines the first two research questions, how minimum wages affect the distributions of wages and family incomes, employment and the exit from poverty among older workers and whether the effects of the minimum wage on older workers are differentiated by its level of increase. Using the Korean Labour and Income Panel Study (KLIPS) [한국노동패널], linear least squares (OLS) and fixed-effects models are estimated to identify the effects on the distributions of wages and family earnings and to demonstrate the aggregate employment effect among older workers. Multilevel discrete-time event history models for competing risks are also used to verify both transitions from being employed and from being poor while working among older workers caused by the increase in the minimum wage. All of the employed models compare two periods of Korean governments, the Roh, Moo-Hyun government (2003-2008) which maintained the highest rate of increase in the minimum wage, except the government period in which it was introduced, and the Lee, Myung-Bak government (2008-2013) which had the lowest rate of increase, in order to evaluate whether the minimum wage has a typical economic effect on older workers, regardless of its level of increase. Chapter Eight discusses how the results from the empirical analysis conducted in the

previous chapter can be understood with the political economy framework proposed in Chapter Five. This involves a contextual analysis mainly of the Minimum Wage Council's annual report on the minimum wage fixing process. Chapter Nine, the Conclusion summarises the main findings of this research and briefly reviews contributions and policy implications, followed by limitations of and reflection on research methods exploited.

Notes

¹ As Sabia (2010, p.593) summarised, there are two main explanations with regard to the minimum wage increases ‘providing little more than symbolic support’ to the working poor. Stigler, G. (1946, The economics of minimum wage legislation, *American Economic Review*, 36, 358-365), Burkhauser, R.V., Couch, K.A. and Glenn, A.J. (1996, Public policies for the working poor: The earned income tax credit versus minimum wage legislation, *Research in Labour Economics*, 15, 65-109), and Burkhauser, R.V. and Sabia, J.J. (2007, The effectiveness of minimum wage increases in reducing poverty: Past, present, and future, *Contemporary Economic Policy*, 25(2), 262-281) argue that ‘the relationship between earning a low hourly wage rate and living in poverty is weak and has become weaker over time’ (Sabia, 2010, p.593). Neumark and Wascher (2002, Do minimum wages fight poverty? *Economic Inquiry*, 40(3), 315–33), Neumark, Schweitzer, and Wascher (2004, Minimum wage effects throughout the wage distribution, *Journal of Human Resources*, 39(2), 425–50; 2005), and Sabia (2008, Minimum wages and the economic wellbeing of single mothers, *Journal of Policy Analysis and Management*, 27, 848–66) contend that while some families of low-skilled workers in employment will be out of poverty by an increase of the minimum wage, other low-skilled workers will lose their jobs or have their hours cut, leading to reduction in their income and fall their families into poverty (Sabia, 2010, p.593).

Chapter Two

The Minimum Wage

Introduction

The idea of a minimum wage was created in the late nineteenth century for the purpose of alleviating the conditions of “sweated labour” working for very low wages (Cunningham, 2007; Neumark and Wascher, 2008)¹. It can be defined currently as the wage floor ensuring by law or by collective bargaining that wage earners receive at least a minimum of pay protection. The International Labour Organization (ILO) has provided a definition of minimum wages in the same vein:

the lowest level of remuneration permitted ... which in each country has the force of law and which is enforceable under threat of penal or other appropriate sanctions. Minimum wages fixed by collective agreements made binding by public authorities are included in this definition (The ILO Committee on Employment and Social Policy, 2009, p.2)².

Minimum wages, which are used as a major labour market instrument by the majority of countries the world over, present the main idea of the definition provided by the ILO whether or not they have ratified the ILO’s Conventions on minimum wage fixing procedures.³

In principle, the minimum wage is a very clear social policy intended to meet the demands of social justice for low paid workers. However, in reality, things are much more complicated as a variety of legislative texts and practices exist country by country. The current expansion from minimum wages to a living wage in debates or in practice not only reflects the complexities of minimum wages in effect but also adds to them. Those complexities lead to difficulties in generalising about the issues of the minimum wage, such as its employment effect, its efficacy as a tool of poverty reduction and its effectiveness for protecting wages and reducing inequalities. A plausible starting point for dealing with the issues of the minimum wage is to look at its systems implemented across countries. The intricate array of all minimum wage systems can be captured to

some extent by reviewing motivations for the creation of minimum wages and minimum wage fixing procedures and criteria held in legislative texts. Since minimum wage systems also vary over time, the changes in the systems in response to social, economic, and political flows should be taken into account for an enhanced understanding of the operation of minimum wages. The first section of this chapter will give an overview of motivations for the creation of minimum wages, basically on reference to Starr's work on it (1993, quoted in Cunningham, 2007). Then, the various minimum wage fixing procedures and criteria will be reviewed in the following two sections, using the ILO's Working Conditions Laws Database of Minimum Wages 2012. In these sections, we identify the classification of minimum wages, based on the work accomplished by Eyraud and Saget (2005) and Nolte and Ghosheh (2010). Finally, founded on the review of legislative texts, the present focus of minimum wage systems around the world will also be discussed.

Motivations behind Minimum Wages

Motivations for introducing minimum wages reveal the two attributes of social justice and economic adjustment at the same time. The types of motivations Starr (1993, quoted in Cunningham, 2007, p.9) suggested - 1) protection of the most vulnerable, 2) poverty reduction, 3) payment for inputs, 4) fair labour standards, 5) fair competition and 6) macroeconomic objectives. The rationale for the creation of minimum wages across countries explicitly or implicitly includes some of the motivations, and according to time and place, the influence of pressure groups and the relation to other linked systems, the motivations focus of a minimum wage moves from social justice to economic adjustment and *vice versa*. In this regard, changes in the purpose of minimum wages reflect the transition in main concerns with regard to the minimum wage.

Protection of the most vulnerable is the objective where low paid workers 'with the least bargaining power and the most inhuman living standards were the targets of the policy' (Cunningham, 2007, p.9). The early minimum wages set by law from the late 19th to the early 20th in New Zealand, Australia, the United Kingdom and the United States resulted from the concern about "sweatshops" which were often thought of as

employing children, women and immigrants. The population addressed in the early minimum wages worked under the most deprived working conditions at severely low or even no pay, and furthermore, they did not have any organisational power to negotiate the improvement of their working conditions including wages.

The aim of poverty reduction is in the same context of protecting the most vulnerable; however, it identifies the most vulnerable as the poor and intends to protect workers in all industries against unacceptably low wages by setting a generally applicable lower rate, instead of fixing rates in line with individual industries and occupations. However, greater flexibility is shown in practice through general minimum rates fixed at different levels for various regions or broad industrial sectors, the exemption of a certain group of workers, or sub-rates for apprentices, young workers and the handicapped; and also, this purpose 'presupposes that the influence of minimum wages on average wage movements is marginal' since their role is 'confined to providing 'safety net' protection' (Starr, 1933, pp.40-41). General rates with the basic floor concept are the most widely used form of minimum wages in recent years, particularly among industrialised countries.

Payments for input are associated with the interest in what should be paid by employers rather than the concern about who should be targeted. The primary logic of this objective is that employers are required to pay for the reproduction of labour and thus 'wages should be sufficient to cover the cost of food, shelter, clothing and other necessities that create labour' (Cunningham, 2007, p.9). The original Wisconsin minimum wage law in the United States, similar to most of other early minimum wage laws (Arizona, Arkansas, California, Colorado, D.C., Kansas, Massachusetts, Minnesota, Nebraska, North Dakota, Oregon, Puerto Rico, South Dakota, Texas, Utah, Washington) before the end of the 1920s, provided for a minimum wage 'sufficient for a worker to maintain himself or herself under conditions consistent with his or her welfare,' defined to be 'reasonable comfort, reasonable physical well-being, decency and moral well-being' (Thies, 1991, pp.717-719).

The motivation of fair labour standards begins with the contradiction between the idea that all occupations and industries should have a “fair” wage which is ideally identified by collective bargaining and the fact that there are some industries which are unable to organise (Cunningham, 2007). In this regard, the objective of fair labour standards views ‘a minimum wage set by government as the second-best solution’ (Cunningham, 2007 p.9) for ‘a ‘common rule’ to promote the application of the principle of equal pay for equal work and to reduce areas of industrial conflict’ (Starr, 1993, p.24). The Australian states of Victoria and Tasmania can be regarded as the cases of minimum wages with this role. In those states, the wages board systems, although originally intended for the protection of the most vulnerable workers at the turn of the nineteenth century into the twentieth century, ‘have evolved into the predominant institutional framework for determination of terms and conditions of employment’ in which employer and employee representatives negotiated ‘the minimum rates for various occupations in individual industries’ (Starr, 1993, p.28). Japan also has experience with this role of minimum wages. Up to 1967 most minimum wages were determined on the basis of inter-employer agreements and applied to only a part or all of an industry in a given prefecture; since then minimum wage rates have been mostly fixed on the basis of recommendations of minimum wages councils in the 47 prefectures of the country (Starr, 1993, p.28).

The aim of fair competition is in line with the objective of fair labour standard; however, it derives from a concern with unfair competition for factor inputs in production. Among employers, ‘there is the desire to isolate wages from excessive competitive pressures, the reasoning being that while producers should be free to compete in matters of price, design, quality of product or service, it is unfair for competition to be based on a bidding down of workers’ wages’; in this view, a minimum wage set through a collective decision-making procedure is conceived of as a means of preventing such unfair competitive pressures (Starr, 1993, p.24). In several provinces of Canada, there were ‘special industry rates applied to a limited number of industries where the problem of unfair competition with respect to wages was believed to be particularly acute’ (Starr, 1993, p.29). In Ontario, in 1974, there were 84 schedules in force concerned the clothing industry, the needle trades, construction and barbers’ shops

but have declined (Starr, 1993, p.29).

Macroeconomic objectives are related to the likely impacts of minimum wage on ‘the entire wage distribution, which may lead to economic growth, inflation control, or political gains’ (Cunningham, 2007, p.9). The use of minimum wages as a macroeconomic policy instrument assumes that the minimum wage rates ‘will to a large extent determine the wages actually paid by many workers’ either by their being fixed at comparatively high levels or by of a comprehensive structure of industrial/occupational rates linked to them and strengthen the purchasing power of wages which leads to the increase in the level of demand for goods and services and accordingly, to avoidance of serious unemployment or of the increased costs associated with the higher wages; ‘it is also believed in this case that minimum wage fixing can be used to gain increased government control over wage movements and wage structures without producing major adverse effects on the resource allocation and incentive functions of wages’ (Starr, 1993, pp.47-48). Unlike most developed countries where minimum wage systems intended to provide ‘safety net’ protection rather than to have a major influence on prevailing wages, in a large number of developing countries, such as a number of East African countries after independence, Colombia, Mexico and Costa Rica, minimum wages have been often conceived of as the key instrument of wage policy (Starr, 1993).

The motivations behind a minimum wage can be traced by the minimum wage fixing procedures and criteria employed in each system. Since minimum wage fixing procedures are ostensibly involved in who makes decisions, they do not immediately disclose the particular purpose of a minimum wage; instead, discussions and decisions made in the procedures at a given time and place tell us about the specific purpose in a certain case rather than a broad objective of a minimum wage. These insights may be achieved by an in-depth analysis of the procedures. A variety of fixing procedures across countries that are reviewed in the following section imply this point. In contrast, each of the fixing criteria is more promptly linked to different aims (Eyraud and Saget, 2008); and hence, analysing the combination of the fixing criteria in a country may give more concrete insights into what general objectives a certain country focuses on in terms of its minimum wage system. This will be looked at in another section of this chapter.

Minimum Wage Fixing Procedures

Different minimum wage fixing procedures existing around the world can be classified by two major independent factors: the involvement of government or collective bargaining as the key decision-makers and the number of minimum wage rates (Eyraud and Saget, 2005). Based on consideration of those factors, countries can be sorted into four categories in principle: a single rate for the whole country with the government as the key decision-maker; multiple rates varying by region or by sector and/or occupation with the government as the key decision-maker; a single rate for the whole country determined by collective bargaining; and multiple rates varying by region or by sector and/or occupation determined by collective bargaining. These categories can be compartmentalised according to the extent of government intervention and the minimum wage fixing level. This means that whether government or collective bargaining is involved as a key decision-maker is categorised again by the extent of government intervention as 1) the government sets a minimum wage alone; 2) the government determines a minimum wage following the direct consultation with the social partners separately; 3) the government fixes a minimum wage based on advice and/or recommendation of specialised committee; 4) a special body, mainly a tripartite or bipartite committee, sets a minimum wage, and the government validate it; and 5) minimum wages are set by collective bargaining without government intervention (Eyraud and Saget, 2005; Nolte and Ghosheh, 2010); and whether a single rate or multiple rates is applied can be divided again into five groups by the minimum wage fixing level: 1) national level if minimum wages has universal coverage⁴, 2) regional level if minimum wages are set by a regional wage-setting mechanism and vary across the country; 3) national by sector and /or occupation if sectoral and/or occupational minimum wages are set which apply to the whole country; 4) regional by sector and/or occupation if sectoral and/or occupational minimum wages are set by regional wage-setting mechanism; and 5) by sector and/or occupation if sectoral and/or occupational minimum wages are set which do not automatically apply to all workers concerned in the region or county (Nolte and Ghosheh, 2010).

Table 2.1 Minimum Wage Fixing Procedures among OECD Countries

		Key decision-maker						Collective bargaining
		Government ¹					Special body's decision (tripartite/bipartite)	
		Government only	Tripartite/bipartite involved					
			Government decision following direct consultation with the social partners	Government decision based on recommendations of specialized body (tripartite/bipartite)				
Number of minimum wage rates	Single	National	Chile, Israel, Luxembourg, Netherlands, New Zealand, United States*	Czech Republic, Slovenia, Spain	Estonia, France, Hungary, Ireland*, Japan*, Republic of Korea, Portugal, Slovakia, United Kingdom	Australia*, Belgium*, Poland, Turkey		
	Multiple	Regional	Canada*, United States*		Canada*, Japan*	Mexico*		
		National by sector and/or occupation			Ireland *	Australia*, Belgium*, Finland* Greece**, Mexico*	Austria*, Finland*, Iceland, Norway**	
		Regional by sector and/or occupation	Canada*		Canada*, Japan*	Austria*	Switzerland	
		By sector/occupation					Denmark, Germany, Italy, Sweden	

Source: ILO, Minimum Wage Fixing Database 2012

Notes: 1. In many countries within this category, in certain sectors and/or occupations or at an enterprise level collective bargaining sets minimum wage rates that are higher than the minimum rates set by an government or an authority. These are not included in the table as the rates thus set are an addition to the basic statutory minimum.

* Some countries have several types of fixing mechanisms.

** The categorisation of these two countries is not in accord with the previous analysis among which the most recent is conducted by Nolte and Ghosheh based on the ILO's minimum wage fixing database 2009.

Table 2.1 shows a reclassification of the minimum wage fixing procedures among the OECD countries in 2012, based on the vital factors identified by Eyraud and Saget in 2005 and by Nolte and Ghosheh in 2009, as explained above. In the majority of analysed countries (64.7 per cent), the government sets a single minimum wage rate at the national level. Among the countries belonging to this category, the most popular system is the government determination of a single national minimum wage based on the recommendation of a special body usually composed of employee, employer and government representatives (26.5 per cent of the total); the second most commonly used system among the OECD countries is where the government sets a single national minimum wage alone without any obligation to consult the social partners or a special body (17.6 per cent of the total); next is that of a tripartite committee fixing a single national rate and the government simply confirming the decision (11.8 per cent of the total); and the government determination of a single national rate following the direct and separate consultation of the social partners is found in three among the analysed countries (8.8 per cent of the total). At this point, it should be noted that, in practice, the importance of consultation is recognised even in the case where the government is the only key decision-maker, and the three types except minimum wage determination by a special body are often very similar (Eyraud and Saget, 2005). Regardless of the variation by the extent of the government intervention, a single national minimum wage determination by the government is found among the most developed countries such as France, Japan, the United Kingdom and the United States, and also among the countries which have become OECD members since the 1990s, for instance, Chile, Czech Republic, Estonia, Hungary, Israel, Republic of Korea, Slovakia and Slovenia. Indeed, eight of the nine countries which have relatively recently joined the OECD have adopted one of the systems in which the government plays the main role in setting a single national minimum wage.

Meanwhile, minimum wage determination by collective bargaining is observed only in multiple rates, in three fixing levels. This means that there is no case in which collective bargaining fixes a single national rate or regional rates applying to all workers in a region or area. In nine countries (26.5 per cent), collective bargaining determines multiple rates in three fixing levels: in Denmark, Germany, Italy and Sweden, the social

partners directly negotiate wages through sectoral and/or occupational agreements, and thus no minimum wage actually exists; in several countries including Iceland and Norway, a national multi-sectoral agreement sets a single minimum wage rate for the whole country; and in Switzerland, multi-sectoral agreements varying by region determine a minimum wage rate for a region or area. All countries belonging to the type of minimum wage determination by collective bargaining are well developed nations with high per-capita income levels.

A minimum wage may also be set through decentralised collective bargaining in most of countries adopting a national minimum wage determination by government, which normally must not be less than the national minimum wage level. Apart from this, nine of the thirty four OECD countries have multiple types of fixing mechanisms. Australia, Belgium, Ireland, Japan, Mexico, and the United States have more than two different fixing levels in a key decision-maker; and Austria, Canada and Finland have various combinations of a key decision-maker and a fixing level. Eyraud and Saget (2005) suggested two reasons for minimum wage rates to be set by region, the administrative and political structure of the country and allowance for differences in living standards. Although they may not cover the whole range of countries, the two reasons can work as explanation for the countries having multi-types of minimum wage procedures.

Minimum Wage Fixing Criteria

Minimum wage fixing procedures are related to who and how a minimum wage is set and at what level it works. Minimum wage fixing criteria, meanwhile, are concerned with what motivations or objectives a minimum wage has. Countries take different criteria into account for minimum wage setting, and it means that the aims of minimum wage vary by country according to the criteria considered. In this regard, as the motivations behind minimum wages disclose the two properties of social justice and economic adjustment as mentioned in the earlier section, the criteria are divided into two broad categories: the first is of more social nature addressing the needs of workers, and the other is more economically oriented, focusing on the country's economic conditions (Eyraud and Saget, 2005). Among the criteria mainly covered by the ILO's

database 2012, the level of wages and income in the country, the needs of workers and their families, social security benefits, inflation rate and the cost of living can be seen as having more of social nature, while productivity, capacity of enterprises to pay and the level of employment are deemed to be of greater economic concern. Economic development can be regarded as cutting both ways depending on the economic situation in a country.

Table 2.2 shows the criteria of minimum wage fixing taken into consideration among the OECD countries. The criteria most frequently considered in these countries are the level of wages and income and the cost of living, followed by economic development, inflation rate and the need of workers and their families in sequence. Then both productivity and the level of employment rank fifth, and social security benefits and the capacity of enterprises to pay in order are at the bottom of the scale. The level of wages and income in the country are taken into account for mostly three objectives when determining the minimum wage rate: the equal pay for equal work, the prevention of the wage gap expansion and/or the allowance for the existing regional difference in wages. The purpose, the equal pay for equal work is not clearly stated in other countries, but in Australia, the Fair Work Act 2009 specifies that Fair Work Australia, the minimum wage fixing panels, must ‘have regard to the principle of equal remuneration for work of equal or comparable value’ (*Fair Work Act 2009 §284(1)(d), cited from the ILO legal database*). The object to avoid the expansion of the wage gap in a country is the most expected outcome by the countries considering the level of wage for minimum wage fixing. France, Ireland, Israel and the Netherlands explicitly determine it about the criterion: in France, Labour Code states that ‘annual adjustment to the national minimum wage rate should eliminate the imbalance between the national minimum wage rate and the progression of general economic conditions and income’ (*Labour Code §L3231-9, cited from the ILO legal database*); in Ireland, ‘if no agreement between employer and employee representatives has been reached, the Labour Court when making a recommendation to the Minister concerning the minimum wage rate has to take the movement to earnings since the last minimum rate of pay into account’ (*National Minimum Wages Act S.13(5), cited from the ILO legal database*); and very strictly enforced in Israel and the Netherlands, ‘the minimum wage is 47.5 per cent of

Table 2.2 Minimum Wage Fixing Criteria among OECD Countries

	Social nature					both	Economic oriented			No criteria
	Level of wages	Social security benefits	Needs of workers and their families	Cost of living	Inflation rate	Econom-ic develop-ment	Produc-tivity	Capacity of business to pay	Level of Employ-ment	
Australia	√		√	√	√	√	√	√	√	
Austria										√
Belgium				√						
Canada										√
Chile					√		√			
Czech	√									
Estonia	√		√	√	√		√			
Finland				√						
France	√		√	√		√				
Germany										√
Greece										√
Hungary	√	√		√		√			√	
Iceland										√
Ireland	√				√	√			√	
Israel	√			√						
Italy					√					
Japan	√	√		√				√		
Korea	√			√		√	√			
Luxembourg	√			√		√				
Mexico	√		√	√	√	√			√	
Netherlands	√	√				√			√	
New Zealand										√
Norway										√
Poland	√		√	√	√	√	√	√	√	
Portugal			√	√	√	√	√			
Slovakia	√		√	√		√			√	
Slovenia	√				√	√			√	
Spain	√		√	√	√	√	√			
Switzerland										√
Turkey	√		√	√	√					
UK						√				
US	√			√			√	√		

Source: ILO, Minimum Wage Fixing Database 2012

Notes: Austria and Germany are included in the ILO's database 2012 on the criteria of minimum wages, with no information and thus regarded as with no criteria while Denmark and Sweden are excluded in the criteria part of the database and taken away from the table.

the average wage' in Israel (*Minimum Wages Act §1, cited from the ILO legal database*), which is automatically raised in accordance with changes in average wage levels, and 'minimum wage increases are automatically indexed to estimated increases in average negotiated wage rates in both the public and private sectors in the current year and revised accordingly by the Ministry of Social Affairs and Employment'⁵ in the Netherlands (*Minimum Wage and Minimum Leave Allowance Act Art.14, cited from the ILO legal database*). The use of the level of wages and income when determining minimum wages is found in countries which allows for the regional difference in wages, seeking more affordable levels of minimum wages in each region. In Japan, regional minimum wages are specified with consideration given to the wages of workers in the region.

Considering reference to the cost of living has the main purpose of maintaining the purchasing power among low pay workers. The inflation rate also concerns the same object, and the needs of workers and their families can be regarded as part of the reference to the cost of living and inflation rate (Eyraud and Saget, 2005). Due to the analogous attribute among the three criteria, they are deemed alternatives to each other for the same purpose, keeping the workers' purchasing power. Twenty two countries take at least one of the three criteria into consideration when minimum wage fixing; and seven countries (Australia, Estonia, Mexico, Poland, Portugal, Spain and Turkey) allow for all three. However, in order to achieve the proposed goal, the maintenance of workers' purchasing power, how strictly each criterion is enforced would be more critical than how many criteria are considered. Some countries more concretely stipulate what they do for the consideration of the cost of living, inflation rate and/or the needs of workers and their families: in Belgium and France, minimum wage rates are indexed to consumer price index (CPI); in France, in particular, 'the increase in purchasing power of the minimum wage rate must be equal to at least half the total increase in the purchasing power of the average hourly wage as set forth in the quarterly inquiry carried out by the Ministry of Labour' (*Labour Code §L3231-8, cited from the ILO legal database*); Poland and Slovakia take account of price index development and consumer prices, respectively; in Australia, the relative living standards is required to be allowed for in addition to the needs of the low paid; and in Mexico, 'the National Commission on

Minimum Wages shall consider the investigation and studies carried out to set the minimum wages according to the budget that a family may require to cover material needs, such as accommodation, household goods, food, clothing and transport, social and cultural needs, such as the assistance to live performances, the performing of sports, the use of libraries and other cultural activities; and the needs related to the education of the children' (*Federal Labour Act Art.90, art.562 II(a), cited from the ILO legal database*).

Economic development as a minimum wage fixing criterion is typically for preventing too high increases and thus seeking more viable levels of minimum wages; and economic oriented criteria including productivity, the capacity of enterprises to pay and the level of employment also have the same purpose. However, economic development can be more positively taken into account for minimum wage setting. In the case that Eyraud and Saget (2005) referred to, where the minimum wages are set not just for covering the basic needs of the poorest workers and their families but also for enabling them to benefit from growth in general in the same way that other workers do, the criterion, economic development are considered with the aims of poverty reduction. As to this, more discussion will be presented in the following section.

At this point it should be noted that the allocation of each criterion to either a category of social nature or one of economic concern, even among other criteria which were not included in the discussion above, is not clear-cut in practice because the same criterion can be used in a different way or even the opposite one. The inflation rate is usually taken into consideration in order to avoid the purchasing power of workers being reduced; however, in Ireland, 'the Labour Court must consider the likely impact that a recommendation made would have on inflation in the economy' (*National Minimum Wage Act S. 13(5)*). Social security benefits, though they were not included above as a universal criterion for minimum wage fixing, are also taken into account for quite different reasons. In Hungary, Japan and the Netherlands where social security benefits are included as a minimum wage fixing criterion, the consideration of social security benefits is for not upsetting the social benefits budget and preventing the big gap of income among people; but, in China, the minimum wage should be set higher than unemployment benefits in order to encourage the unemployed to find jobs (Eyraud and Saget, 2005).

Whereas the majority of the OECD countries adopts a part of the criteria discussed above, some states including Austria, Canada, Germany, Greece, Iceland, New Zealand, Norway and Switzerland do not specify certain criteria for minimum wage setting. However, they maintain the highest level of minimum wage with more than 1,000 US dollar as a monthly minimum rate as of 2009 (Nolte and Ghosheh, 2010). In this regard, the key is the fixing procedures and government's focus when using a minimum wage as a tool for macroeconomic and/or social policy.

Present Focus of Minimum Wage Research

From the review of the minimum wage systems, particularly of the fixing criteria among the OECD countries using the ILO's legal database 2012, the present focus with regard to the purposes of the minimum wage can be narrowed down to three topics, poverty, wage inequality and employment which are also the most controversial issues in recent minimum wage debates.

Firstly, the motivations behind minimum wages is related to poverty reduction. The earliest minimum wage was based on the fact that workers were paid extremely low wages no matter how much they produced and needed to be provided the least necessary to reproduce the labour; however, the notion of protection from poverty has been expanded with the idea of workers' needs. What is included into workers' needs makes the view of protection from poverty vary by time and space. Eyraud and Saget (2005, p.41) suggested three transition patterns of the variation in the needs of workers: 'a move from the notion of basic needs to the requirements for a decent standard of living'; 'an extension of the notion of a decent standard of living to include different aspects of social protection outside the enterprise such as pensions, family benefits, etc.'; and 'an even wider extension, where the minimum implies not just covering the needs of the poorest workers and their families, but also enabling them to benefit from growth in general in the same way that other workers do'. A shift from the concept of basic needs to the prerequisite for a decent standard of living refers that not only the goods to meet a worker's physical necessity but also the requirements for a decent living such as education, health and social security for retirement are considered when

calculating workers' basic needs. Mexico is a good example where legislative texts proclaim the requirements for a decent standard of living. As mentioned in an earlier section, in Mexico, social and cultural needs including the assistance to live performances, the performing of sports, the use of libraries and other cultural activities as well as expenditures for subsistence or survival such as food, clothing and shelter are taken into account as the basic needs of workers. An extended notion of a decent standard of living to include different aspects of social protection indicates that the minimum wage functions as a 'social floor' by linking it to social security benefits. In these systems, retirement benefits, disability payments, unemployment benefits and/or maternity benefits are adjusted with a rise in the minimum wage so that the purchasing power of the most vulnerable beneficiaries is preserved. However, this notion has inherent limitations in practice because a rise in the minimum wage may potentially cause a large increase in social security costs and therefore many governments are reluctant to raise minimum wage levels. In the widest notion that a minimum wage enables the poorest workers and their families to benefit from growth in general in the same way that other workers do, the minimum wage functions as an instrument of redistribution rather than a tool for reduction of absolute poverty, depending on the country's strong economic growth. France in 1970 and the Netherlands in 1968 had the objectives behind the implementation of minimum wages that the 'guaranteed' minimum wage was replaced by the minimum 'growth' wage (Eyraud and Saget, 2005, p.45).

Secondly, minimum wages have relevance to the objectives of reducing wage inequality and discrimination. Increases in the minimum wage have an effect of narrowing the wage hierarchy if there is no similar rise in higher wages. Although there are few cases in which legislative texts declare the reduction of wage inequality as an objective, many countries use minimum wage policy in order to cut back the wage gap at some stage. However, the minimum wage works as a wage floor to push the whole wage distribution onto the higher level without curtailing the wage gap in some developed countries, and in this case lessening the wage hierarchy is not easily achieved by the minimum wage. Minimum wages can be also used to help to oppose wage discrimination. Beyond the fact that more women than men are in low paid jobs, which informs the wage inequality

between women and men, women are often paid less than men for the same work. This kind of wage discrimination is often found in some vulnerable age groups as well. Australia, Hungary and Portugal specify the principle of 'equal pay for equal work' in their minimum wage law in order to prevent the wage discrimination. The National minimum wage in the United Kingdom also addressed the gender pay gap when newly introduced (Grimshaw, 2011).

Thirdly, the minimum wage is connected with employment or unemployment. Unlike the relation with other objectives discussed above, the minimum wage itself does not intend to raise the employment rate nor to decrease the unemployment rate. Due to the potential negative effects of the minimum wage on employment, several economic motivations such as hindering a rise in production costs, preventing out-of-hand inflation and maintaining general economic situation are behind the relation between the minimum wage and employment or unemployment rates. In other words, such economic objectives are accomplished in the way of impeding the increase in minimum wage rates or not encouraging the increase by taking into account of the level of employment or unemployment rates when the minimum wage fixing while the ostensible reason for the minimum wage is still kept. Regardless of the fact that whether or not minimum wages have negative effects on employment is very controversial and far from conclusive, the level of employment has been adopted as an criterion of minimum wage fixing for the economic purposes in more and more countries, and eight among the OECD countries (Australia, Hungary, Ireland, Mexico, the Netherlands, Poland, Slovakia and Slovenia) currently take into account of it for minimum wage setting.

Conclusion

This chapter reviewed minimum wage systems across different countries. The minimum wage is a social policy intended to meet the demands of social justice for low paid workers in principle, but is more complex in practice in terms of its purpose, fixing procedures and criteria. The motivations behind minimum wages, which have been addressed since the advent of the first minimum wage in the late nineteenth century, can

be summed up as protection of the most vulnerable, poverty reduction, payment for inputs, fair labour standards, fair competition, and macroeconomic objectives. This suggests that the motivations behind minimum wages display both the attributes of social justice and economic adjustment at the same time, and their focus moves from one attribute to the other with a variety of influences such as time and place, pressure groups, and other related systems. The purpose of a minimum wage can be traced by its fixing procedures and the criteria employed in each system. While the fixing criteria are immediately linked to different aims so that the combination of the criteria in a country informs us of a general objective that country focuses on in terms of its minimum wage system, the fixing procedures which are involved in who makes the decision and at what level a minimum wage operates would reveal the purpose through discussions and decisions within them. The fact that the majority of the fixing procedures adopt a type of multilateral consultation and even the case where the government is the only key decision-maker recognises the importance of consultation in practice, indicates the value of discussions and decisions held in the fixing procedures for understanding the effects of minimum wages. This is the main basis for the new theoretical framework advanced in Chapter Five and, subsequently, to understand the quantitative empirical results discussed in Chapter Eight. From the review of the minimum wage systems, particularly of the fixing criteria, the present focus with regard to the purposes of the minimum wage is narrowed down to three topics, poverty, wage inequality and employment. These topics are the main ones examined in this thesis.

Notes

¹ The early minimum wages set by law in New Zealand in 1894, in Australia in 1896, and in England in 1909 were mainly intended to prevent employers from hiring children, women, apprentices, or wage workers in certain industries such as chain making, lace finishing, paper and cardboard boxing making, and tailoring at no or very low pay (Neumark and Wascher, 2008).

² It is originally from ILO (1992). *Minimum Wages: Wage-Fixing Machinery, Application and Supervision*. International Labour Conference, 79th Session, Report III (Part 4B) (General Survey), Geneva: International Labour Office.

³ There are two international labour standards on minimum wages provided by the ILO, the Minimum Wage Fixing Machinery Convention, 1928 (No.26) and the Minimum Wage Fixing Convention, 1970 (No. 131). Convention No.26 asks its ratifying countries ‘to create or maintain machinery whereby minimum rates of wages can be fixed for workers employed in certain of the trades or parts of trades (and in particular in home working trades) in which no arrangements exist for the effective regulation of wages by collective agreement or otherwise and wages are exceptionally low’ (*Minimum Wage Fixing Machinery Convention 1928 No.26, Art. 1*). Convention No.131 adjures the member who ratify it ‘to establish a system of minimum wages which covers all groups of wage earners whose terms of employment are such that coverage would be appropriate’ (*Minimum Wage Fixing Convention 1970 No.131, Art. 1*). Both conventions commonly require the full consultation of the social partners while any of them does not impose a national statutory minimum wage (Eyraud and Saget, 2008).

⁴ Nolte and Ghosheh (2010) noted that this also includes countries which determine minimum wages at national level, varying by area or region, such as Thailand and Vietnam. However, among the OECD countries, there is no case of this.

⁵ The minimum wage rate in the Netherlands may be frozen at its current level in the two situations: ‘if the average wage rise is considered too high, and as a result an increase of unemployment is expected, or if the increase in the amount of social welfare benefits, which are based on minimum wage rates, increases to such an extent that a significant increase in premiums or taxes is necessary’ (*Minimum Wage and Minimum Leave Allowance Act Art. 14 Decree on the adjustment of the minimum wage per 1 July 2012 Explanatory note*).

Chapter Three

Older Workers in the Labour Market

Introduction

Whether the minimum wage is an influential policy in particular for older workers has not been focused on much in comparison to younger age groups. There are several reasons for this academic inclination that will be shown in Chapter Four, such as the relatively small proportion of older employees as a result of the trend towards early retirement throughout the 1970s and 1980s, the big differential across countries in the proportion of older workers in the labour force even after the end of the trend since the mid-1990s, the focus of attention on employment and inequality issues among younger workers and female workers along with the sign of the economic turndown and the level of the unemployment rate worsening, and the tendency that workers with higher education and higher wage work longer in their later life. Linking the minimum wage to older workers, at least three points with regard to the characteristics of older workers should be clarified: how a significant proportion of older workers is active in the workforce; what sectors, occupations and/or types of employment contract older workers are in; and how they are spread in the wage distribution.

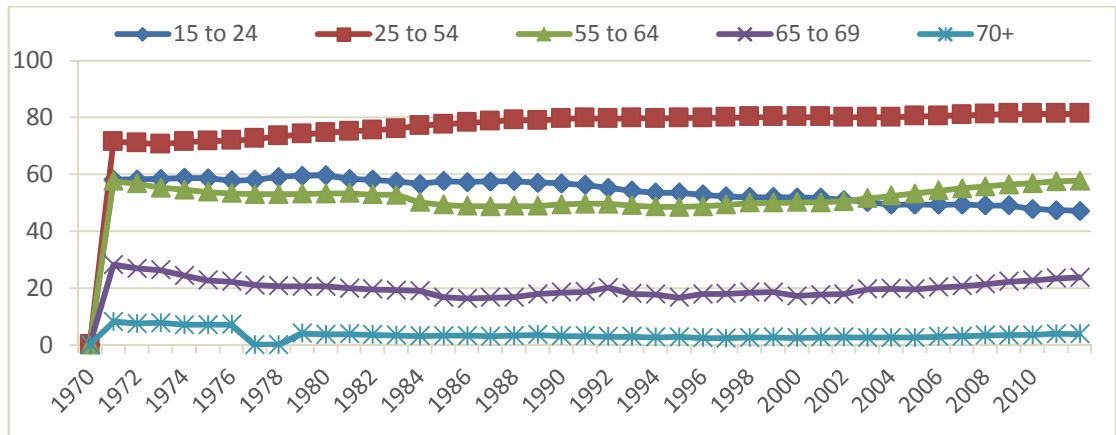
In this chapter, the labour force participation rate and the employment rate of older workers, the types of contracts and sectors that they are involved in, and their wage level are reviewed. The labour force participation rate is defined as the proportion of people of a given age who are employed, self-employed or actively seeking jobs as a percentage of the total population in that same age group; and the employment rate, as the proportion of employed or self-employed people of a given age as a percentage of the total population in that same age. The labour force participation rate and the employment rate reflect both the extent of older people's needs to be engaged in work and the capacity of an economy to embrace the needs, respectively. In addition to these rates, it is to be noted that the unemployment rate of an age group typically refers to the number of people of a given age who are neither employed nor self-employed but

actively seeking work as a percentage of the total number of economically active people - employed, self-employed, or actively seeking work - in that same age group. The unemployment rate implies a limit in the capacity of an economy to embrace people's need to work. A high unemployment rate is associated with high involuntary exit from the labour market. This tendency is more likely to be among older workers, but unemployment is not easily distinguished from exit from the workforce in data. In this regard, the unemployment rates used in Chapter Seven of this thesis were measured as the proportion of people of a given age who were neither employed nor self-employed or in non-wage family business work as a percentage of the total population in that same age group. Meanwhile, the types of contracts and sectors which older workers are involved in and their wage level would suggest to what extent older workers are engaged in low-wage work and potentially influenced by the minimum wage.

Labour Market Participation

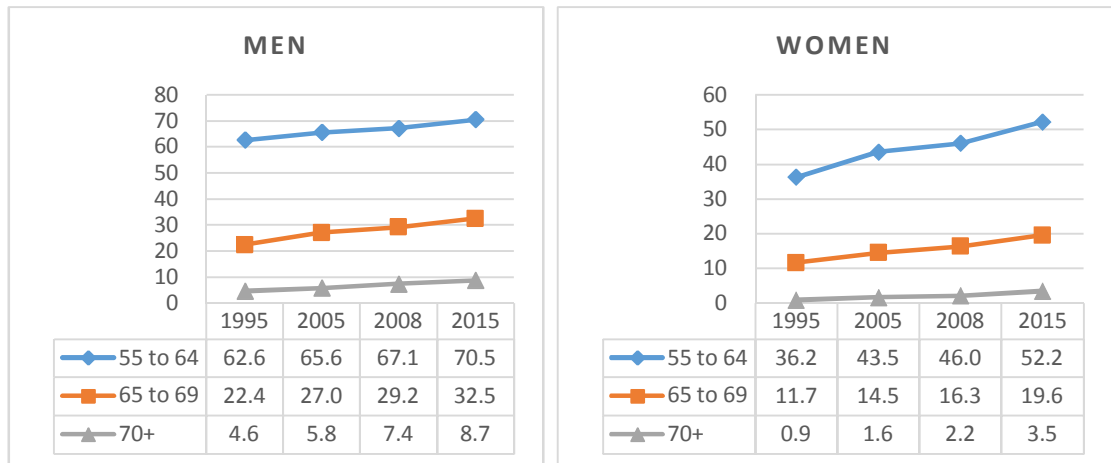
As a strong trend to early retirement throughout the 1970s and 1980s came to an end in the mid-1990s and during the 2000s, the labour force participation rate of older workers has crept up (OECD, 2011). The participation rate for those aged 55-64 in the OECD countries has increased significantly from 48.5 per cent in 1995 to 57.8 per cent in 2011, compared to the slightly increased one for their 'prime aged' counterparts aged 25-54 from 79.8 per cent to 81.3 per cent and contrasting with the decreased rate of those aged 15-24 from 52.9 per cent to 47.2 per cent in the same year. Figure 3.1 shows that the rise in the participation rate is also found in the older age groups such as those aged 65-69 and over 70 although the rates of increase among the groups are not conspicuous as much as the one among those aged 55-64. Unlike the decline among younger workers aged 15-24 and the stasis among the middle aged workers aged 25-54, the participation rate of older workers display a tendency to increase even after the financial crisis. The rate increased by 1.4 percentage points in both groups aged 55-64 and 65-69 and by 0.3 percentage points among workers aged over 70 between 2008 and 2011. The increase in the participation rate is remarkable particularly among women aged 55-64. As shown in Figure 3.2, the rate for the group has increased by 16.0 percentage points, from 36.2 per cent in 1995 to 52.2 per cent in 2015.

Figure 3.1 Labour Force Participation Rates by Age Group in OECD Countries, 1970-2011 (%)



Source: OECD, Labour Force Statistics database

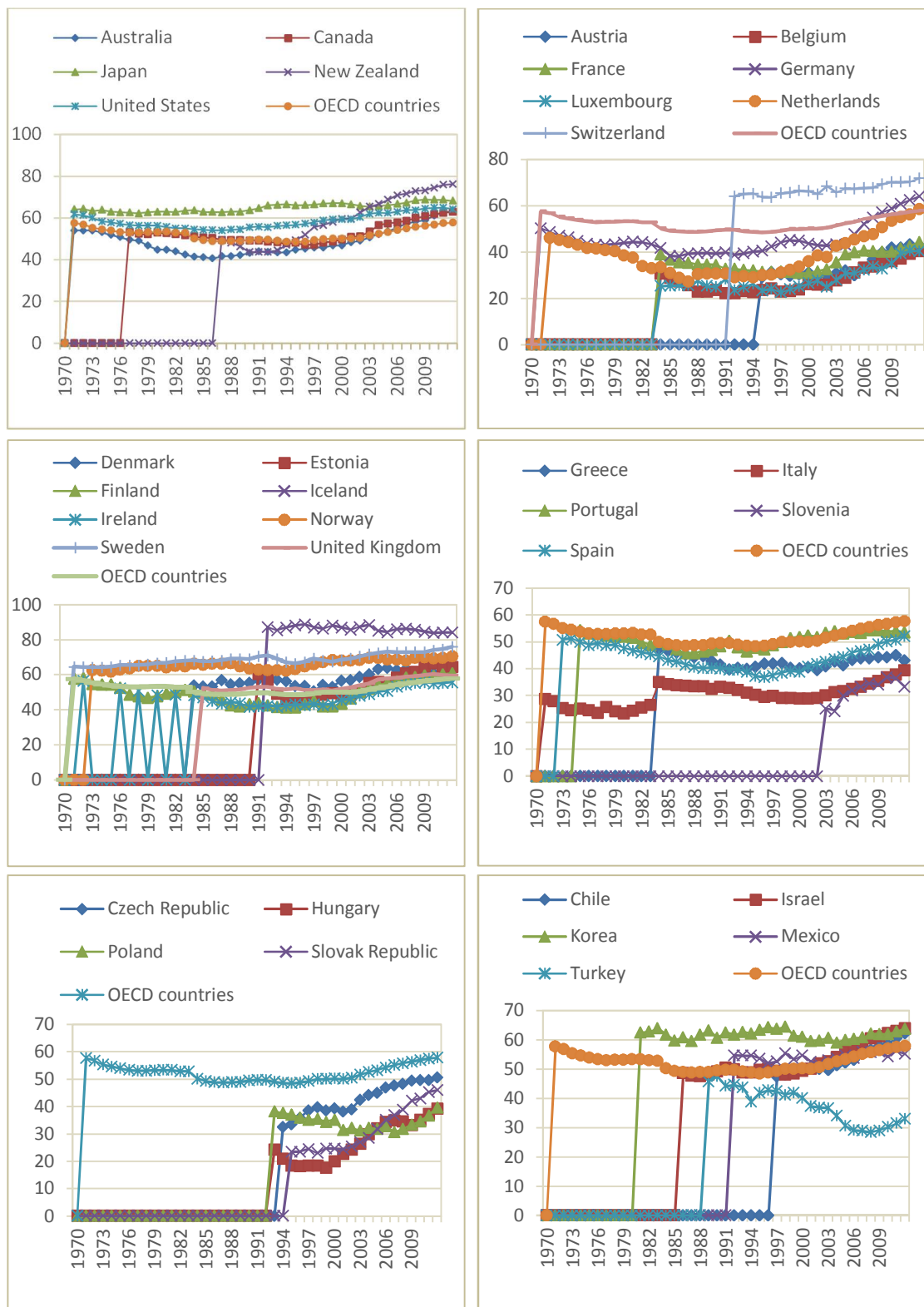
Figure 3.2 Labour Force Participation Rates of Workers Aged 55+ by Sex and Age Group in OECD Countries, 1995-2015 (%)



Source: OECD, Labour Force Statistics database

The increasing pattern of the participation rates for older workers since the mid-1990s is found in many OECD countries, in particular among those aged 55-64, despite the difference in the steepness of each rise. However, as seen in Figure 3.3, deviating from this pattern, the participation rates have fluctuated narrowly and thus remained at a relatively similar level in Greece, Iceland, Japan, Korea and Mexico; and the increase after the financial crisis is not shown in Ireland, Japan, Portugal, the United Kingdom and the United States in which the participation rates of older workers aged 55-64 were almost flat between 2008 and 2011. In Poland and Turkey, the participation rates have declined until 2008 and henceforth increased to a great extent. Along with some

Figure 3.3 Labour Force Participation Rates of Workers Aged 55-64 among OECD Countries, 1970-2011 (%)

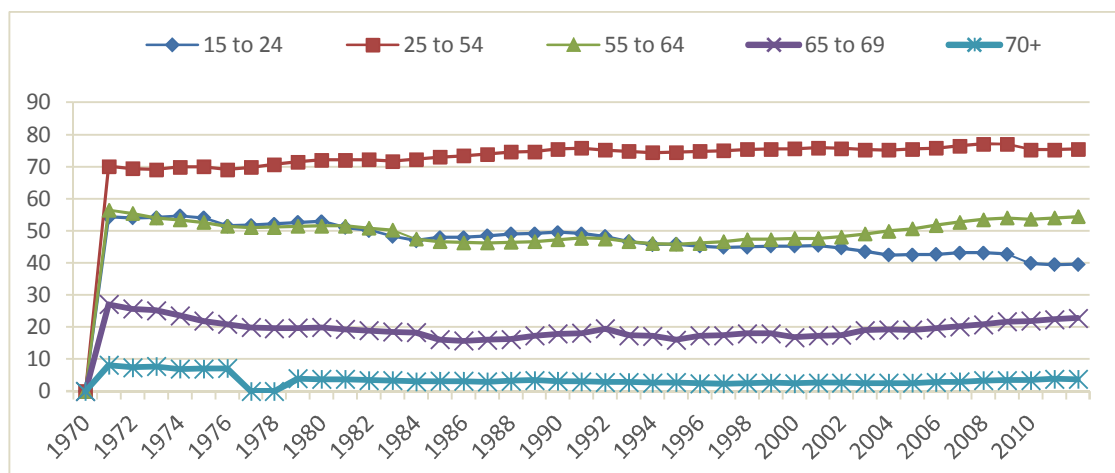


Source: OECD, Labour Force Statistics database

exceptions in the pattern of the participation rates, the rate varies by country from 33.0 per cent in Turkey to 84.1 per cent in Iceland as of 2011, for example. The average of the participation rates for older workers aged 55-64 in the OECD countries was 57.8 per cent in 2011, which is very close to the rates only in two countries, the Netherlands and the United Kingdom. The participation rates for older workers exceeded 60 per cent in Australia, Canada, Chile, Denmark, Estonia, Finland, Germany, Israel, Japan, Korea and the United States, and even 70 per cent in five countries, including Iceland, New Zealand, Norway, Sweden and Switzerland. At the other end of the spectrum, eleven countries (Austria, Belgium, Czech Republic, France, Greece, Ireland, Luxembourg, Mexico, Portugal, Slovakia and Spain) have the participation rates of 40 per cent or over but below the OECD average, and the other five countries (Hungary, Italy, Poland, Turkey and Slovenia) have less than 40 per cent of older workers active in the labour force.

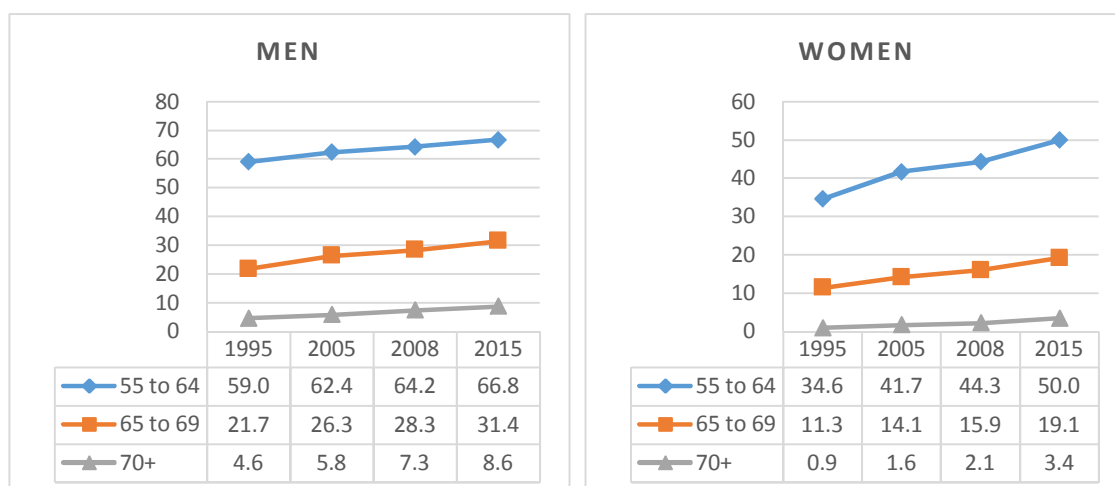
The employment rate of older workers is a more critical measure of their labour market conditions in as much as the rate informs of the extent that they are embraced in practice in an economy. Linking to minimum wages, the rate enables a rough assumption about the population size of older workers who are likely to be affected by minimum wages. The employment rates for older workers in the OECD countries have similarities with the labour force participation rates for them in the countries in many ways. First of all, the employment rate of older workers aged 55-64 in the OECD countries averaged 54.4 per cent in 2011. It is still low compared to 75.4 per cent, the average rate among 'core-age' workers aged 25-54; however, considering the fact that the average rate for younger workers aged 15-24 hit 39.5 per cent in the same year, their lowest employment rate since 1970, the rate for older workers is not insignificant. Second, as seen in Figure 3.4, employment rates have steadily increased since the mid-1990s in all three groups of older workers aged 55-64, 65-69 and over 70. The rise in the employment rate is found in both men and women, and the rate has sharply increased particularly among women aged 55-64, as in the labour force participation rate, from 34.6 per cent in 1995 to 50.0 per cent in 2015 (Figure 3.5).

Figure 3.4 Employment Rates by Age Group in OECD Countries, 1970-2011 (%)



Source: OECD, Labour Force Statistics database

Figure 3.5 Employment Rates of Older Workers Aged 55+ by Sex and Age Group in OECD Countries, 1995-2015 (%)

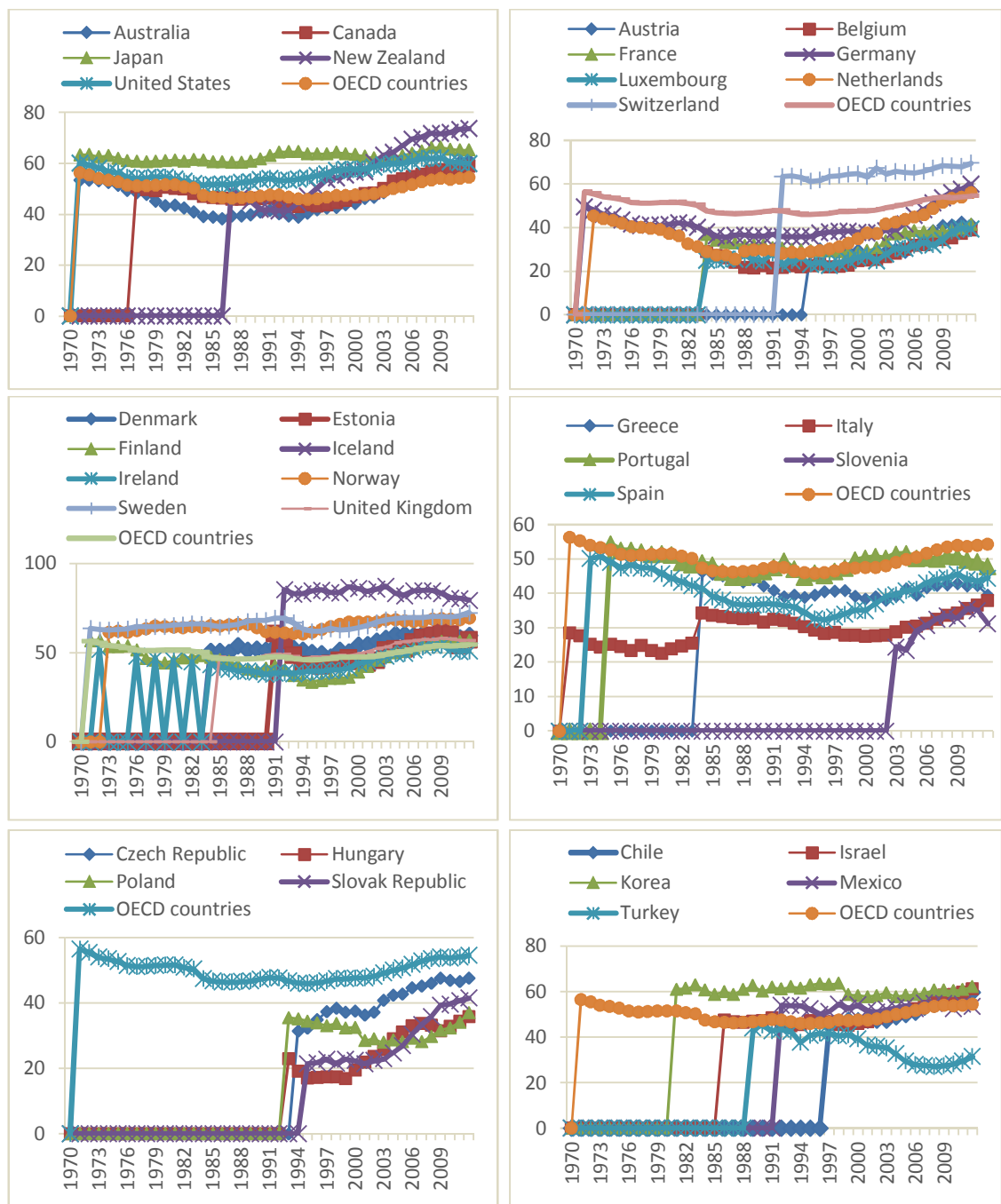


Source: OECD, Labour Force Statistics database

Finally, as shown in Figure 3.6, the employment rate and its pattern also differ by country as the labour force participation rate and its pattern do. In 2011, the employment rates ranged from 31.2 per cent to 79.5 per cent among the OECD countries. In six countries, including Australia, Israel, Japan, Korea, Norway and Switzerland, the employment rates for those aged 55-64 were over 60 per cent, and in Iceland, New Zealand and Sweden, over 70 per cent of the counterparts were employed. However, sixteen countries had the employment rates for the age group below the OECD average, and in eight of them, the rates were less than 40 per cent.

Nevertheless, the employment rates are not dispersed from the average as much as the labour force participation rates, and thus the gap between the average and the employment rate in each country is not as wide as the one between the participation rate in individual country and its average.

Figure 3.6 Employment Rates of Workers Aged 55-64 among OECD Countries, 1970-2011 (%)



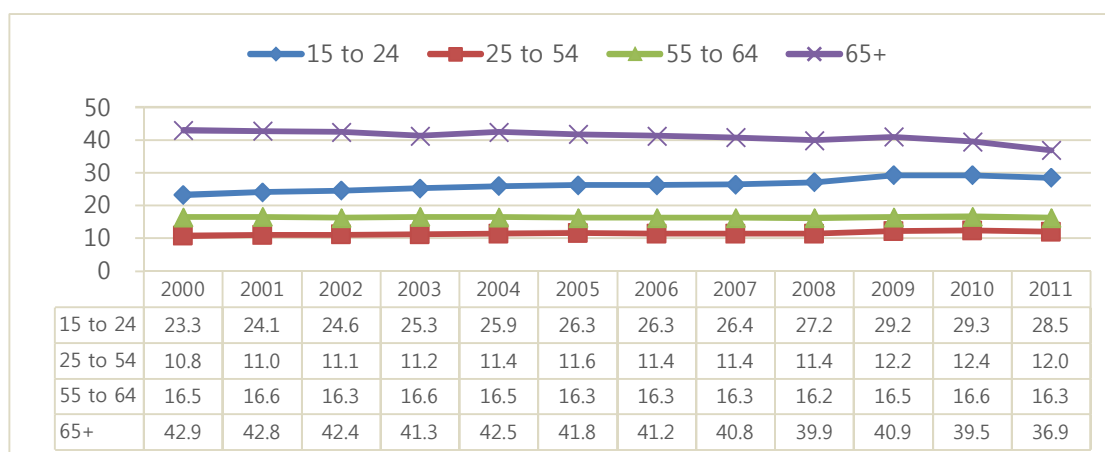
Source: OECD, Labour Force Statistics database

Non-Regular Employment and Sectoral Employment Structure

What types of employment and what sectors the growing number of older workers are in could be an indicator to predict how many older workers will be affected by minimum wages. In general, non-regular employees such as part-time and temporary workers are more likely than their full-time and permanent counterparts to be low-wage workers; and the employees in sectors of industry, typically including the retail trade, hotels and restaurants, transport, social services and some areas of manufacturing are regarded as being engaged in low pay work, which are highly expected to be influenced by minimum wages.

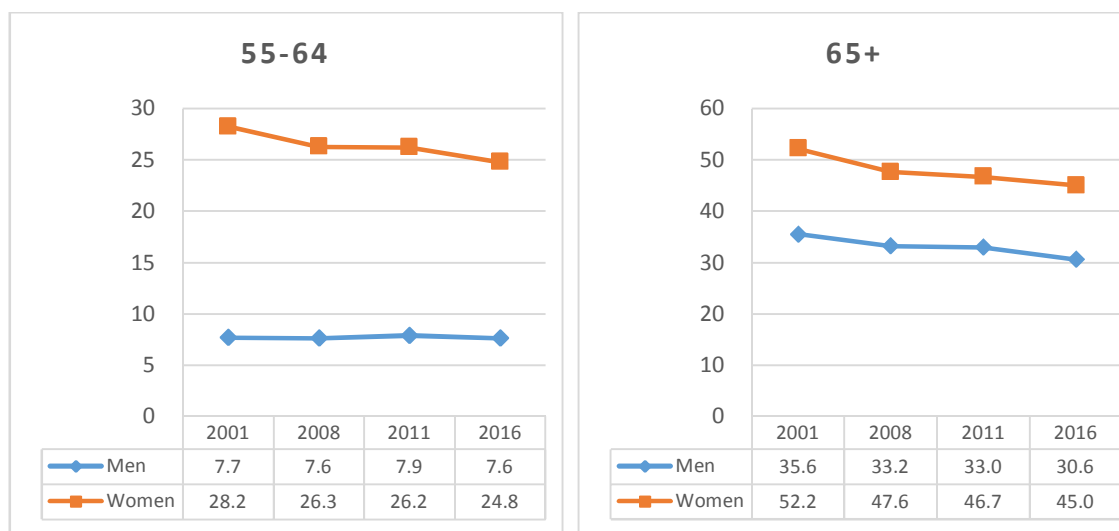
Workers aged 55 and over are more likely than workers aged 25-54 to be employed in part-time jobs in the OECD countries. As shown in Figure 3.7, while the incidence of part-time employees aged 25-54 has ranged from 10.8 to 12.4 since 2000, the one of the counterparts aged 55-64 has maintained over 16 per cent during the same period. Part-time employment is the most popular among workers aged 65 and over. Although the rate has decreased in the OECD countries since 2000, it still remained 36.9 per cent in 2011, which was incomparable to the rates for other age groups. Looking at part-time employment among older workers by sex, women are much more likely to be engaged in part-time work than men, and the incidence greatly rises at age of 65 or over for both (Figure 3.8).

Figure 3.7 Incidence of Part Time Employment by Age Group in OECD Countries, 2000-2011 (%)



Source : OECD, Labour Force Statistics database, 'Incidence of Full-Time Part-Time Employment Based on Common Definition'

Figure 3.8 Incidence of Part Time Employment among Workers Aged 55-64 and 65+ by Sex in OECD Countries, 2001-2016 (%)



Source: OECD, Labour Force Statistics database, 'Incidence of Full-Time Part-Time Employment Based on Common Definition'

But the incidence of part-time employment in the two age groups differs significantly across countries (Table 3.1). In Ireland, the Netherlands and Switzerland, over 35 per cent of workers aged 55-64 were working part-time in 2011 while the rate was under 10 per cent in five OECD countries including Chile, Czech Republic, Hungary, Slovakia and Turkey; and the share of part-time employment among those aged 65 and older was more than 45 per cent in 17 OECD countries and over 70 per cent in Austria, Belgium, Germany and the Netherlands while the rate was below 20 per cent in Chile, Greece and Turkey. However, even in countries where the incidence of part-time employment was much lower than other OECD countries in the two older age groups (Chile and Turkey), the rates increased by from 3.2 to 12.9 percentage points between 2000 and 2011. It is assumed that such small proportion of part-time employment for older workers in the two countries is due to the composition of types of employment in each economy. In fact, the rate of part-time employment for the total employees in Chile increased from 1.6 per cent in 2000 to 8.6 per cent in 2011, and the rate in Turkey, from 2.5 per cent to 4.6 per cent during the same period; these are very low compared to the OECD average which was 13.5 per cent in 2000 and 15.3 per cent in 2011 (OECD Statistics, Labour Force Survey database, 'Incidence of Full-Time Part-Time Employment Based on Common Definition').

Table 3.1 Part Time Employees Aged 55-64 and 65+ by Country in 2011

Part-time employees aged 55-64	Country	Part-time employee aged 65+	Country
Above the OECD average, 16.3% ($x \geq 20\%$)	Australia, Austria, Belgium, Germany, Ireland, Italy, Netherlands, New Zealand, Norway, Switzerland, United Kingdom	Above the OECD average, 36.9% ($x \geq 45\%$)	Australia, Austria, Belgium, Czech Rep., Denmark, Finland, France, Germany, Ireland, Luxembourg, Netherlands, New Zealand, Norway, Poland, Slovenia, Sweden, United Kingdom
About the OECD average, 16.3% ($10\% \leq x < 20\%$)	Canada, Denmark, Finland, France, Greece, Iceland, Israel, Luxembourg, Mexico, Poland, Portugal, Slovenia, Spain, Sweden, United States	About the OECD average, 36.9% ($25\% \leq x < 45\%$)	Canada, Estonia, Hungary, Israel, Italy, Mexico, Portugal, Slovak Rep., Spain, United States
Below the OECD average, 16.3% ($x < 10\%$)	Chile, Czech Rep., Hungary, Slovak Rep., Turkey	Below the OECD average, 36.9% ($x < 25\%$)	Chile, Greece, Turkey

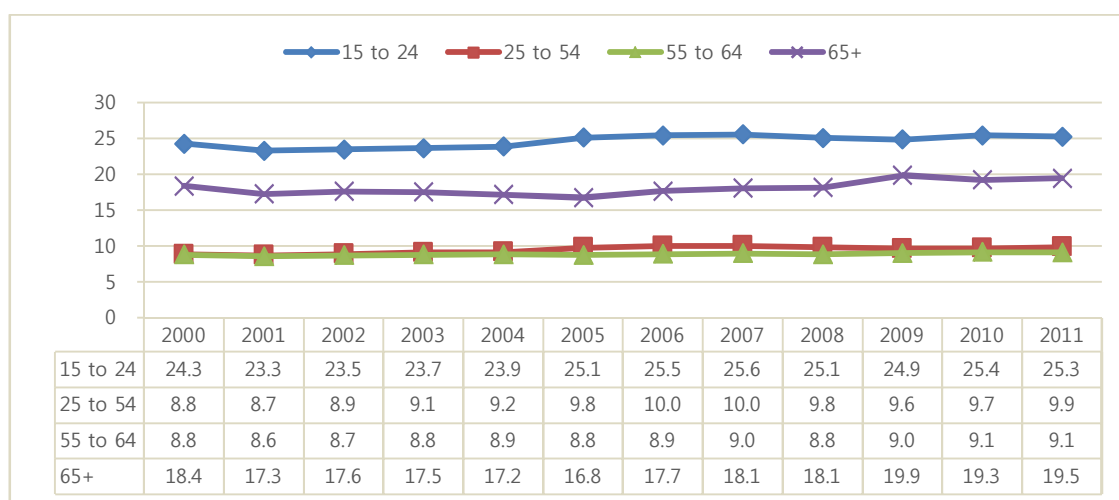
Source: OECD, Labour Force Statistics database, 'Incidence of Full-Time Part-Time Employment Based on Common Definition'

Note: The data are not available for both age groups in Japan and Korea and for 65+ group in Iceland and Switzerland.

In the incidence of temporary employment in the OECD countries, there is no significant difference between workers aged 25-54 and those aged 55-64. The rate ranged from 8.7 to 10.0 between 2000 and 2011 in both age groups (Figure 3.9). Also, the difference between men and women is not consistent in the two older age groups, 55-64 and 65 and older, and the gap between the gender groups has declined from 2001 to 2016 (Figure 3.10). But, as shown in Figure 3.9, employees aged 65 and older were more likely than those in the two age groups to work in temporary jobs during the same period. The incidence of temporary employees aged 65 and older in the OECD countries was 19.5 per cent in 2011, but it also varies by country. Over 30 per cent of workers aged 65 and older in Belgium, France, the Netherlands, Poland, Slovakia and Sweden and even over 50 per cent of their counterparts in Czech Republic, Korea and Slovenia

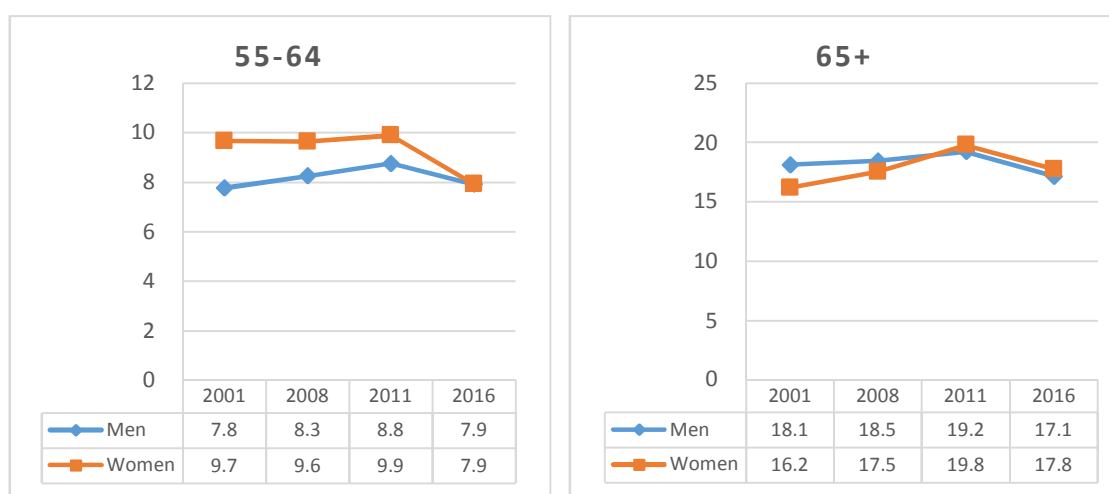
were working in temporary jobs while the rate was under 10 per cent in six OECD countries and below five per cent in Austria and Estonia (Table 3.2). Furthermore, there is no common tendency of increasing or decreasing number of older temporary workers among the OECD countries. However, it should be noted that, as seen in Table 3.2, the incidence of temporary employment among workers aged 65 and older is, at least, over 10 per cent in 20 OECD countries, and the rate in each country has been maintained a significant level, despite a sharp or smooth fluctuation between 2000 and 2011.

Figure 3.9 Incidence of Temporary Employment by Age Group in OECD Countries, 2000-2011 (%)



Source : OECD, Labour Force Statistics database, 'Incidence of Permanent Temporary Employment'

Figure 3.10 Incidence of Temporary Employment among Workers Aged 55-64 and 65+ by Sex in OECD Countries, 2001-2016 (%)



Source : OECD, Labour Force Statistics database, 'Incidence of Permanent Temporary Employment'

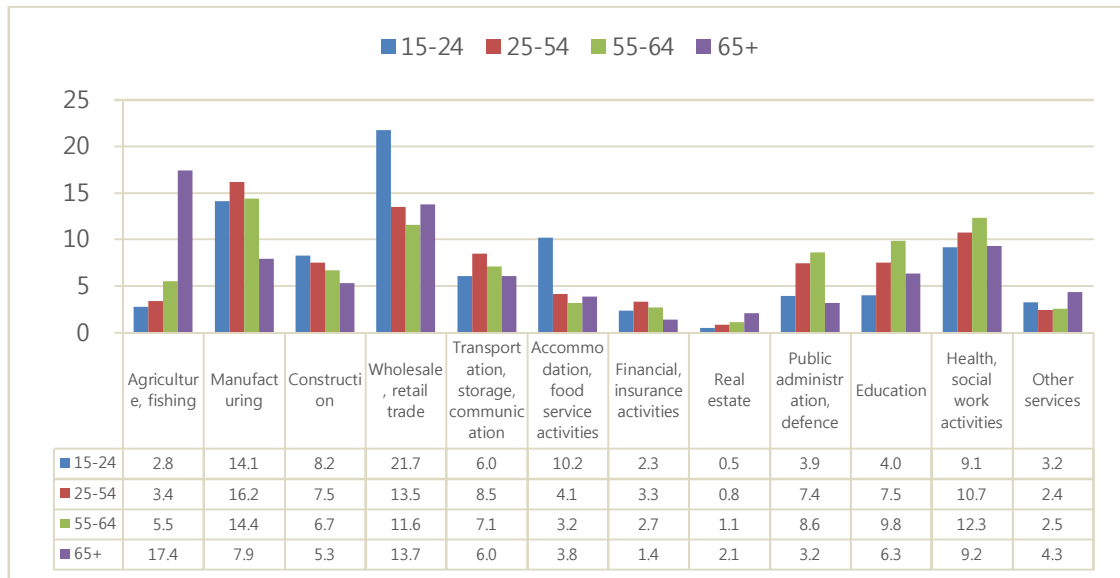
Table 3.2 Temporary Employees Aged 55-64 and 65+ by Country in 2011

Temporary employees aged 55-64	Country	Temporary employee aged 65+	Country
Above the OECD average, 9.1% ($x \geq 15\%$)	Chile, Japan, Korea, Poland, Turkey	Above the OECD average, 19.5% ($x \geq 30\%$)	Belgium, Czech Rep., France, Korea, Netherlands, Poland, Slovakia, Slovenia, Sweden
About the OECD average, 9.1% ($5\% \leq x < 15\%$)	Canada, Czech Rep., Finland, France, Greece, Hungary, Iceland, Ireland, Italy, Netherlands, Portugal, Slovakia, Slovenia, Spain, Sweden, United Kingdom	About the OECD average, 19.5% ($10\% \leq x < 30\%$)	Canada, Chile, Finland, Ireland, Italy, Japan, Portugal, Spain, Switzerland, Turkey, United Kingdom
Below the OECD average, 9.1% ($x < 5\%$)	Austria, Belgium, Denmark, Estonia, Germany, Norway, Switzerland	Below the OECD average, 19.5% ($x < 10\%$)	Austria, Denmark, Estonia, Germany, Greece, Hungary, Iceland, Norway

Source : OECD, Labour Force Statistics database, 'Incidence of Permanent Temporary Employment'
 Note: The data are not available for Australia, Israel, Mexico, New Zealand, and the United States.

Based on the Labour Force Survey (LFS) provided by Eurostat, older workers aged 55 and over in 25 European countries, which are mostly OECD members, are mainly employed in 'agriculture,' 'manufacturing,' 'whole sale and retail trade,' 'education' and 'health and social work' in 2011 (Figure 3.11). Agriculture and education are typically regarded as traditional sectors in which older workers are over-represented. However, workers aged 65 and up unequivocally outnumbered other age groups in 2011 when it comes to their employment share in agriculture while those aged 55-64 were the most highly engaged in education in the year. Along with this, the significant portions of both workers aged 55-64 and those aged 65 and over were working in 'whole sale and retail trade' and 'health and social work' in 2011. Except for education, the sectors in which older workers are chiefly employed are regarded as those offering a high proportion of low-wage jobs.

Figure 3.11 Sectoral Employment Structure by Sector and Age Group in EU 25, 2011 (%)

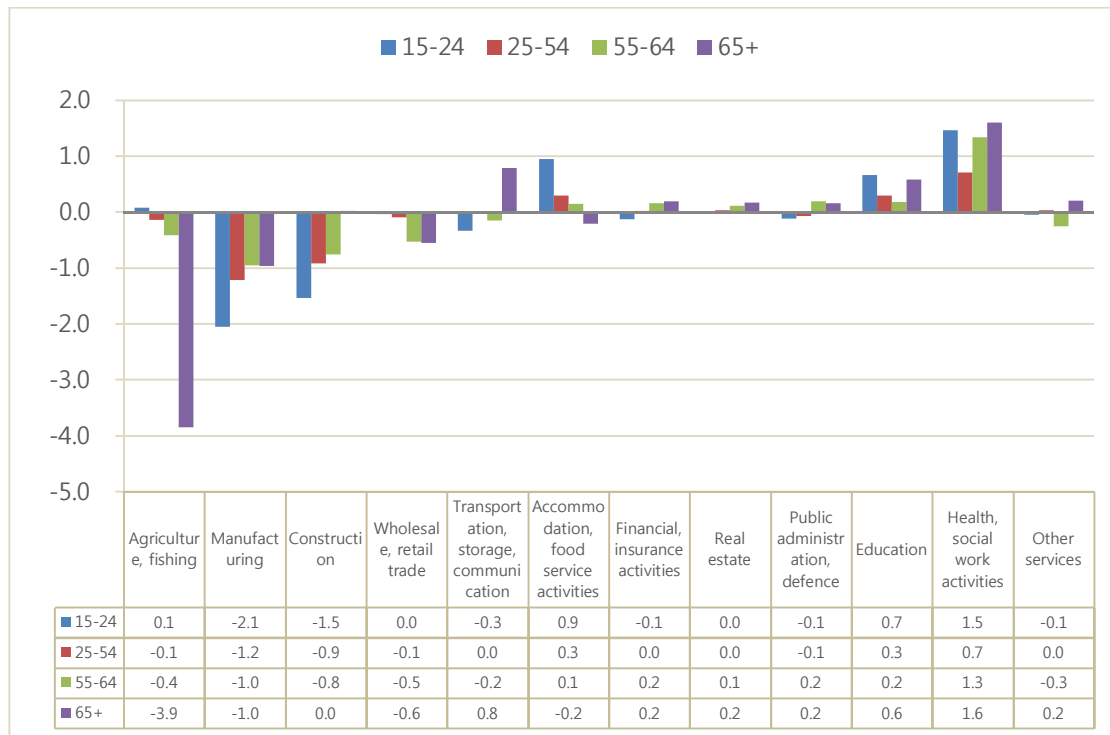


Source : Eurostat, LFS, NACE Rev. 2

Looking at the changes in sectoral employment by age group (Figure 3.12), the annual employment of workers aged 55-64 had a relatively steep decline in ‘manufacturing’, ‘construction,’ ‘whole sale and retail trade’ and ‘agriculture and fishing’ between 2008 and 2011 whereas it increased in ‘health and social work activities’ by 1.3 percentage points during the same period. The employment of workers aged 65 and older also showed a significant drop in ‘agriculture and fishing,’ ‘manufacturing’ and ‘wholesale and retail trade’ while it increased the most in ‘health and social work activities’ and ‘transportation, storage and communication’ by 1.6 and 0.8 percentage points respectively between 2008 and 2011. A remarkable change in employment for this age group is that the rate in ‘agriculture and fishing’ dramatically declined by 3.9 percentage points during the period, which was not comparable with other sectors of industry and the other older age group. In contrast with the significant drop in ‘agriculture and fishing’ for the both older age groups, employment in ‘education’, another traditional sector where older workers were regarded as over-represented, showed rises of 0.2 and 0.6 percentage points for the group of 55-64 and the one of 65 years and over, respectively. Although they cannot be compared equally due to the limitation of data, the analogous pattern of sectoral employment of older workers is observed in non-European OECD countries. In New Zealand, older workers (55-64 years old) are mainly

employed in health and social work, manufacturing, education and whole sale and retail trade (15.4, 14.2, 13.2, 13.0 per cent, respectively) in 2008 (Boyd and Dixon, 2009).

Figure 3.12 Annual Employment Growth by Sector and Age Group in EU 25, 2008-2011



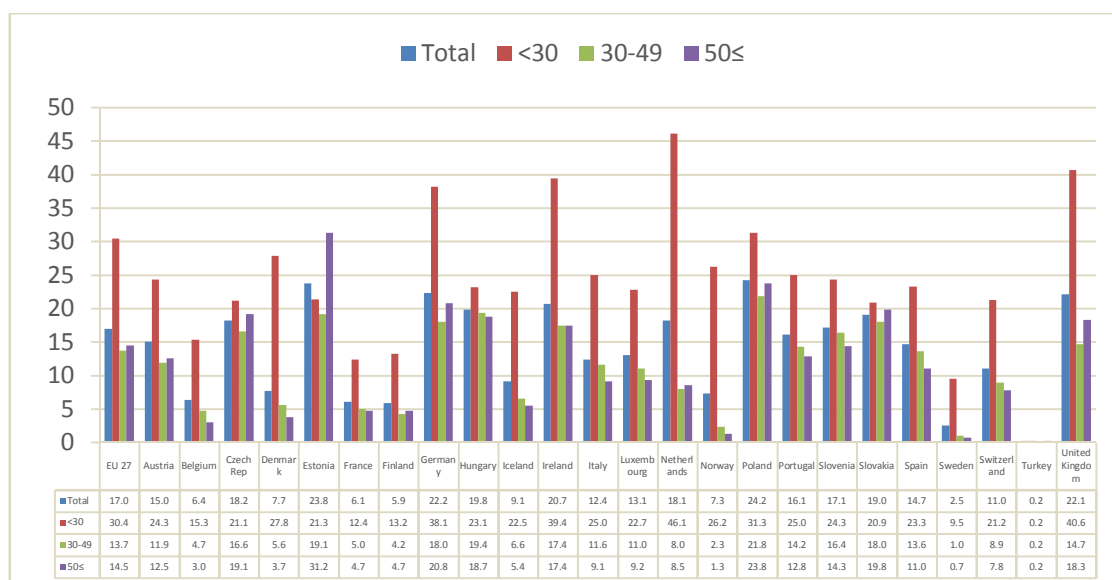
Source : Eurostat, LFS, NACE Rev. 2

Wage Levels

The age-earnings profiles describe the growth of earnings over the life cycle (Thornton, Rodgers and Brookshire, 1997), and the most common specification found in the literature shows an inverted U-shaped pattern between age and earnings. This takes the form of increases in earnings in the early years, a peak at around middle age and a decline around the age of 50-55 (Luong and Hebert, 2009; Casanova, 2013). This pattern of the age-earnings profile can be interpreted, with caution, to mean that the older employees aged over 50 years are more likely to be the low paid than their younger colleagues. Under the condition that there are a lack of data and research on wages and earnings of older workers in an international context, the review of the proportion of low-wage earners among older workers would be a way to assume their relative wage levels.

The definition of low pay most commonly used is a level equivalent to two-thirds of the median wage for all employees in the economy (Grimshaw, 2011, p.3). The Structure of Earnings Survey (SES) provided by the European Commission (EC) follows it, defining low-wage workers as those employees earning two-thirds or less of the national median gross hourly earnings (Eurostat, 2013). According to the survey, 14.5 per cent of EU employees aged 50 years and over were low-wage earners in 2010. The highest proportions of low-wage older earners were observed in Estonia (31.2%), Poland (23.8%), Germany (20.8%), Slovakia (19.8%), Czech Republic (19.1%), Hungary (18.7%) and the United Kingdom (18.3%), and the lowest were found in Turkey (0.2%), Sweden (0.7%), Norway (1.3%), Denmark (3.7%), Finland (4.7%), France (4.7%) and Iceland (5.4%) (Figure 3.13).

Figure 3.13 Proportion of Low-Wage Earners by Age Group in EU Countries, 2010 (%)



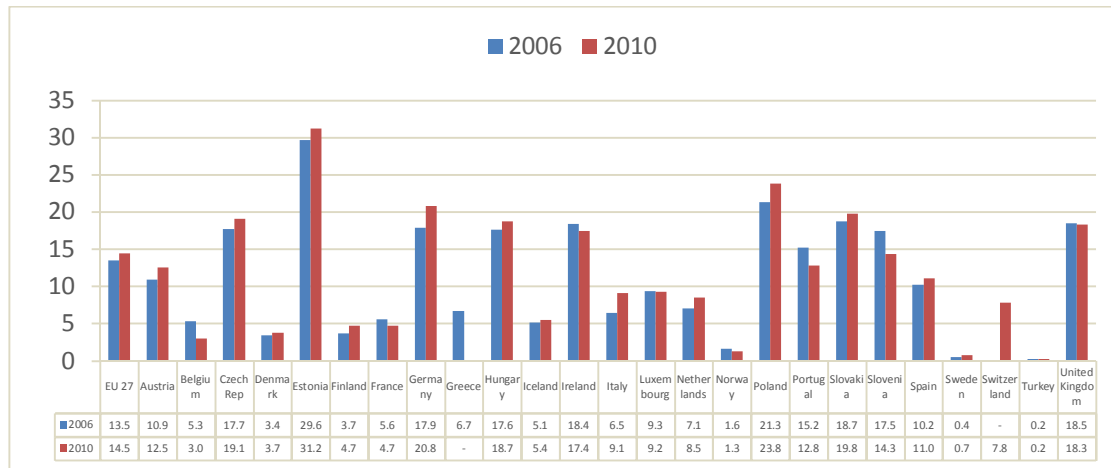
Source : Eurostat, SES (earn_ses_pub1)

Note: OECD member states only are presented, and the data are not available for Greece.

Low-wage earners aged 50 years and over in the EU 27 countries have increased by one percentage point between 2006 and 2010 (Figure 3.14). This is a significant rise in comparison to the increase of 0.2 percentage points in the proportion of total low-wage earners in the EU countries in the same period (Eurostat, 2013). Except that noticeable decreases in low-wage older workers were observed in Slovenia (-3.2 p.p.), Portugal (-2.4 p.p.), Belgium (-2.3 p.p.) and Ireland (-1.0 p.p.) and France (-0.9 p.p.), and minor

declines, in Norway (-0.3 p.p.), the United Kingdom (-0.2 p.p.) and Luxembourg (-0.1 p.p.), increases in low-wage earners aged 50 years and older were found in fifteen OECD member EU countries. Among the fifteen countries, Germany (+2.9 p.p.), Italy (+2.6 p.p.) and Poland (+2.5 p.p.) recorded the highest rates of increase in the proportion of low-wage earners aged 50 years and over between 2006 and 2010.

Figure 3.14 Changes in Proportion of Low-Wage Earners Aged 50+ in EU Countries, 2006-2010 (%)



Source : Eurostat, SES (earn_ses_pub1)

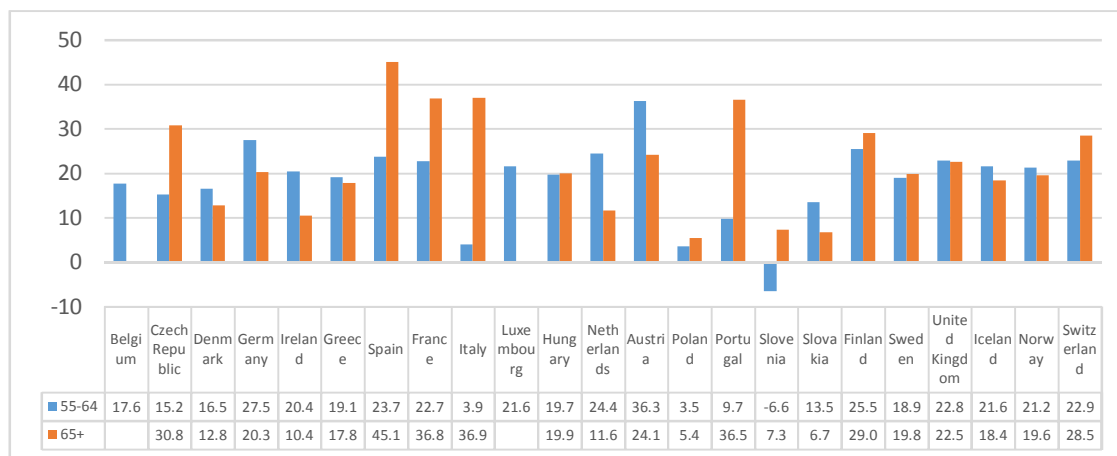
Note: OECD member states only are presented, and the data are not available for Greece in 2010 and Switzerland in 2006.

A higher proportion of low-wage older earners is also found in non-European OECD Countries. For example, 33 per cent of Canadian older workers over 65 earned less than two-thirds of the national median hourly wage in 2011 (MacEwen, 2012). Also in the United States, although a different definition of low pay is used, 34 per cent of workers 65 and older and 18 per cent of workers aged 55-64 were in low-wage jobs in 2010, which were identified as those held by workers with hourly wages below the 20th percentile of wages (GAO, 2011). According to a 2011 Government Accountability Office (GAO) analysis of data from the Bureau of Labor Statistics (BLS) and Census Bureau, there was no significant change between 2007 and 2010 in the percentage of workers in low-wage jobs in any age group. South Korea has an even higher share of low-wage older workers; 53.7 per cent of older workers aged 55-79 were the low paid in 2010, who were defined as those earning less than two-thirds of the national median hourly wage (Jung, S-M, 2011). Although there was a minor decline (-0.3 p.p.) between

2006 and 2010, the figure is still high over the half of Korean older workers aged 55-79.

Apart from the main trend in the proportion of low-wage older workers, a large pay gap between men and women is found among this group. Figure 3.15 shows the gender pay gap among workers aged 55-64 and 65 years and older in twenty-three OECD member EU countries. The gender pay gap here refers to the difference between average gross hourly earnings of male paid employees and of female paid employees as a percentage of average gross hourly earnings of male paid employees. Although the gender gap in hourly earnings varied by country and a few exceptions were found, the rate of the difference between men's average hourly earnings and women's relative to men's average hourly earnings ranged from 13.5 per cent to 36.3 per cent among workers aged 55-64 in 2010, except for the three extremely low or adverse cases of Italy, Poland and Slovenia; and the rate for those aged 65 years and older, from 10.4 per cent to 45.1 per cent in the year, except for the three cases of Poland, Slovenia and Slovakia in which the rates were lower than ten per cent. This suggest that women are likely to form a larger share of the low paid than men among older workers.

Figure 3.15 Gender Pay Gap among Older Workers Aged 55-64 and 65+ in EU Countries, 2010 (%)



Source: Eurostat, NACE Rev.2 (earn1_gr_gpgr2ag)

Note: OECD member states only are presented, and the data are not available for those aged 65 years and older in Belgium and Luxembourg.

Conclusion

This chapter reviewed older workers' labour force participation rate and employment rate, types of contracts and sectors that they were engaged in, and their wage levels. Despite the difference between countries in the level of labour force participation and employment and in the steepness of their rises, the labour force participation rate and the employment rate of older workers have visibly increased since the mid-1990s, in general. However, older workers are more likely to be involved in part-time jobs and employed in agriculture, manufacturing, whole sale and retail trade, education, and health and social work. Except for agriculture in which the employment rate of older workers have dramatically dropped and for education in which they are traditionally over-represented, all the sectors in which older workers are mainly employed are those with high proportions of low paid jobs. This is consistent with the fact that the proportion of low-wage earners among workers aged 50 years and older has increased significantly. In the following chapter, the review of the existing research about the status of older workers in the labour market will be included to look at how the research has developed and what has been focused on.

Chapter Four

Older Workers: Labour Market Status and Minimum Wages

Introduction

As shown in Chapter Three, the labour market for older workers has been changing in a direction that increases their vulnerability at the workplace. This raises the issue of measures to relieve the expected disadvantages that older workers may face, and accordingly, related policies, such as the minimum wage, and research on them are of importance. However, with regard to the exclusive concern of this thesis on the minimum wage, the combination of older workers and the minimum wage has been rarely explored in research as mentioned earlier. This comes from the development of different focuses in two research areas. This chapter reviews literature on the labour market status of older workers and the effects of the minimum wage relating to them. Through the review, it will be shown that the two research areas have long developed apart from each other, and different research focus in each area has created an academic vacuum between them. That is, research on older workers has focused exclusively on employment issues, including retirement, and older workers have been almost out of concern in research on the minimum wage effects which has concentrated on youth and younger workers.

The Labour Market Status of Older Workers

Research Trend

Older workers as a group have been of research interest since the middle of the twentieth century with the institutionalisation of retirement, a fairly new phenomenon which characterised most industrialised nations and was reflected in the widespread exit from the labour force within a relatively short age span and often prior to the loss of individuals' physical or mental ability to remain gainfully employed (Szinovacz, 2003, p.7). Although retirement existed in the pre-industrial peasant society, such withdrawal

from an active working life was confined, on the one hand, to the wealthy and powerful who could afford to spend their later years in comfort and leisure (Macnicol, 2002, p.20) and, on the other hand, to the disabled who were not able to work any more with their physical incapacity. The age at retirement in the pre-industrial society was across a wide range, and first and foremost, retirement had no place in traditional European culture, where 'the life cycle system consisted only of birth-marriage-death' (Kohli, 1987, p.130). The notion of retirement emerged as industrial production became noticeably more technology-intensive at the end of the nineteenth century and the small family firms were replaced by the large bureaucratic unit of production (Macnicol, 2002). The technology-intensive production made labour market 'tightened up with a greater premium on youth, skills and adaptability, and thus older people were seen as increasingly irrelevant to the labour process' (Macnicol, 2002, p.5 & p.13). At the same time, as large bureaucratic organisations 'used more scientific management techniques, including the rule of a fixed retirement age' (Macnicol, 2002, p.19), older workers began to be involved in involuntary retirement. Industrialism theory aptly addressed the forces that had led to forced retirement of older workers in this early time period¹, and Pampel and Weiss (1983, pp. 354-355) briefly reviewed the components responsible for this change: first, as developed countries transformed from a agricultural, self-employed occupational structure to a wage and salary, bureaucratic one, workers who had been able to choose how long they would remain at their job in the previous structure faced formalised retirement rules based on chronological age in larger bureaucratic organisations (Slavick, 1966; quoted in Pampel and Weiss, 1983); secondly, the expansion of the education system in developed nations made older workers less competitive in the labour market than younger workers who were likely to have completed more years of schooling than earlier cohorts. Employers were likely to require the retirement of older workers in order to take on younger workers with the latest skills and knowledge (Clark, Kreps, and Spengler, 1978, quoted in Pampel and Weiss, 1983); thirdly, given a higher proportion of aged persons in the population and employers' preference for younger workers, the increased number of older persons had to compete for available jobs, and as a result, a lower share of older persons would have been able to remain in the labour force (Cowgill, 1974; quoted in Pampel and Weiss, 1983); and fourthly, low demand for older workers reduced participation rates.

It is, however, only since the Second World War that retirement became the social norm (Thane, 2006), which means retirement has been institutionalised and become a central part of the life course in most developed, modern societies. This derived from the development of state pension policy and social welfare although the normative underpinning of retirement as an institution was also spurred by social and individual attitudes on retirement and retirement age (Szinovacz, 2003). The pensions which were initially introduced in Europe and Australasia in the late nineteenth and early twentieth centuries provided minimal income to live on for some of those who had already been forced by decrepitude to retire from gainful work, but they typically did not prohibit earnings from work (Thane, 2006, pp.43-44). Before the Second World War, retirement prior to physical incapacity was not a commonly anticipated phase of life-course; however, as retirement income, mainly from pensions including postwar state and occupational pensions, normally presumed and sometimes required that the pensioners must retire from work, retirement at around the state pension age dramatically increased in developed countries in the second half of the twentieth century (Thane, 2006, p.45). The social policy explanation for the decline in the labour force participation of older workers, in particular older males in developed countries, emphasizes four groups of government policies which may have larger effects than economic growth variables in the postwar period: it is likely that the higher the government expenditures for pension and social insurance programmes per retired person, the lower the participation rate of aged males; expenditures for nonretirement programmes, including medical welfare payment, public housing, welfare programmes, income supplements for food and energy, and various in-kind benefits, may also induce retirement; certain provisions of pension programmes, such as lowering the age of eligibility for pensions or reducing the benefits for those who continue to work after the age of eligibility, may increase the exit from the labour market among older workers, regardless of even controlling for the level of pension and other government expenditures; and the number of years for which a programme has been in existence and the extent to which the programme is recognised as stable and reliable influence the retirement decision and the participation rate of older workers (Pampel and Weiss, 1983, p.356). For female workers's retirement behaviour, there had been a long tendency that it was viewed based on established understanding of men's retirement. But, in relatively recent years, a variety of factors other than

government policies, including personal health, family and caring responsibilities, financial issues, firms' employment policies and discrimination, and institutional factors that affect work and retirement decision, have been highlighted. This change is based on consideration of women's different career paths due to their status as an additional earner in a household relating to marital status, 'the different impact of family and domestic responsibilities, and their relative underrepresentation at higher levels in organisations' (Duberley, Carmichael and Szmigin, 2014, p.71). The attention to women's more discontinuous and fragmented work histories has now led to stress on a holistic research approach to women's work and retirement activities as Wong and Earl (2011) argue. Since research on female workers' retirement has been developed much later than of male's, it is more connected to the development of research on early retirement and also on its reversal which are presented below.

The spread of retirement after the Second World War does not mean that it brought about either social discouragement of working in old age or retirement-focused research about older workers. The British government, for example, encouraged older workers to stay on at work past the pensionable age until the early 1960s (Thane, 2006); and from the late 1940s to the early 1960s, there were studies about older workers built around theoretical models from social and occupational psychology and located in part in the area of industrial gerontology (Phillipson, 2004, p.189) that focused on the problems of older workers and conditions of work under which they can make optimum use of their skills for higher productivity (Murrell, 1959, p.216). However, discussions in the 1960s among most OECD countries identified older workers as a problem group at a time of full employment. By the mid-1970s with demographic changes and the economic recession in the years following the oil crisis, discrimination against older workers became more pronounced by employers' selective recruitment policies and selective discriminatory dismissal practices (Casey and Bruche, 1983, p.2). Under these circumstances, early retirement significantly started to be increased in most Western societies and so did public and scientific attention to this issue (Hofacker, 2010, p.12).

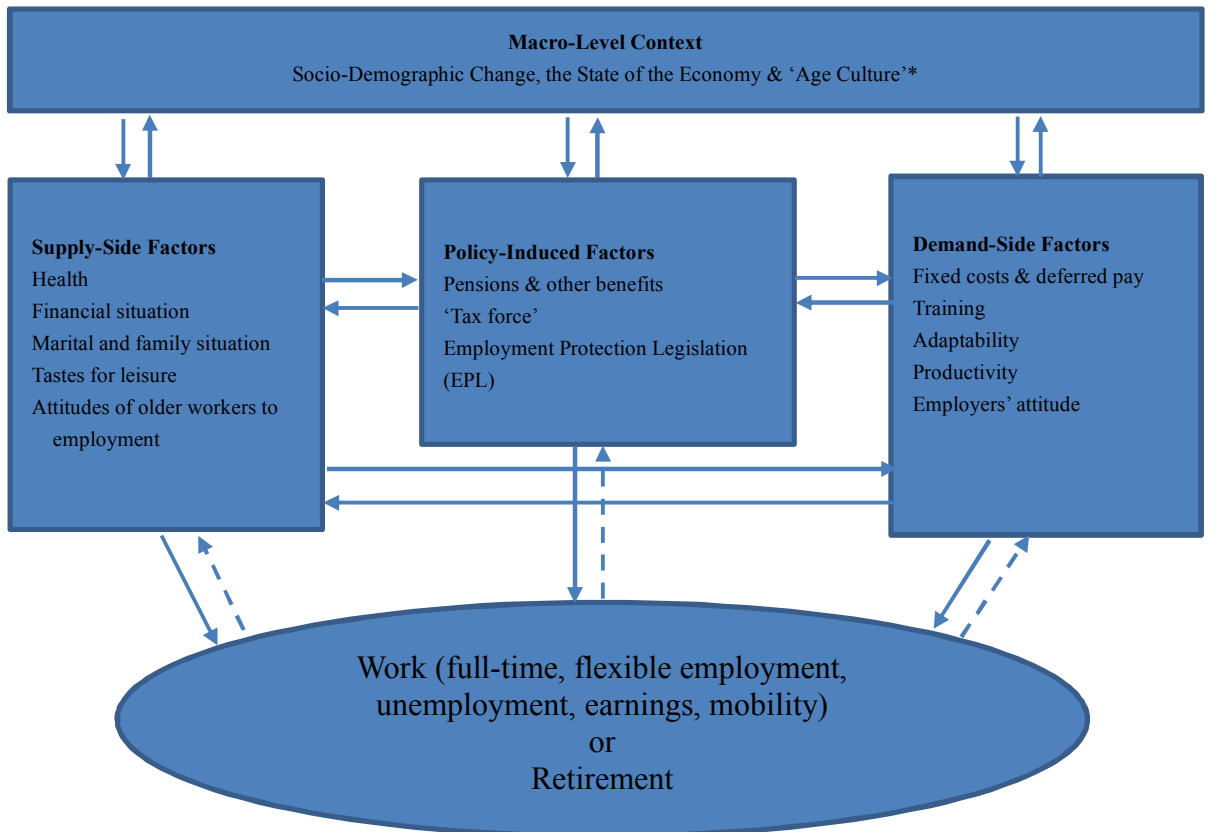
Early retirement was widely supported by governments, trade unions, and employers 'as a means of coping with economic restructuring, workforce downsizing, and global competition' (Macnicol, 2008, p.581). However, the trend to early retirement resists

easy explanations that rely on social policy alone by contrasting ‘theories that focus on the state as the key actor’ and explanations ‘that focus on actors in the economic sphere’ (Kohli and Rein, 1991, p.1). As implied in Kohli and Rein’s (1991) examination of the evolution of early exit and the conditions, actors, and institutions which brought it forth², various factors, not from a single driving force but from multiple forces in different levels, are indeed concerned in the explanation of early retirement. While very few studies attempted to consider disparate causes at the same time, Walker’s study (1985) about older workers and early retirement demonstrates the point well. He found that ill health and redundancy were the major spur to early retirement; the demand for older workers with specific skills and public attitudes such as official labour market intermediaries’ in the job centres were crucial contributors to discouraging older workers from searching for work and encouraging them finally to take early retirement after prolonged unemployment; and the economic and social policy contexts influenced taking early retirement. Furthermore, different factors at the individual, organisational, institutional, and macroeconomic levels which explain the trend to early retirement interact with each other, and their combined influence operates as ‘a social process of exclusion’ (Walker, 1985, p.227) or potentially, as a process of integration of older workers.

The full-fledged exploration of the position of older workers in the labour market, in this regard, has begun with the attempts to explain early retirement but developed with the transfer of research focus from retirement to employment. Since the mid-1990s, early retirement has increasingly been considered as being financially unsustainable in the face of the prospect of ageing in population and in the labour force, and older workers’ participation in the labour market has gradually increased. Employment rates among older workers have significantly risen since the turn of the millennium (Hofäcker and Unt, 2013, p.164), and even after the global financial crisis in 2008, the rates increased in some European countries. With reference to these trends, new directions in research on older workers have emerged with the changing perspective towards active ageing (Walker, 2006), bridge employment (Shultz, 2003, quoted in Rocco and Thijssen, 2006), second careers (AARP, quoted in Lewis, 1996), and older entrepreneurs (Minerd, 1999, quoted in Rocco and Thijssen, 2006). The concept of

active ageing which emerged in the early 1960s, stressing ‘the maintenance in old age of the activity patterns and values typical of middle age’, ‘focused narrowly on the production of goods and services’ in the 1980s and has developed ‘in the 1990s under the influence of the World Health Organization (WHO)’ into one that emphasises ‘a broad range of activities than those normally associated with production and the labour market and inclusion of older people as full citizens’ (Walker, 2006, p.83-84). ‘Bridge employment refers to the labour force participation patterns observed in older workers between their career jobs and compete labour force withdrawal’ which allows them to exit the labour force gradually (Shultz, 2003, p.215). Second career is in line with the concept of bridge employment. But, it signifies a radical career change in later life motivated not so much by money but by a strongly felt need to achieve a lifelong dream or fulfil some inner goal (Lewis, 1996). The concept of older entrepreneurs stresses the potential advantages for retirees to create their own business, such as hiring other retirees and offering care services and organic products to younger generation. Although all these concepts are not always confined to older people’s engagement in production, they are chiefly based on ‘choices older workers make to remain within and not outside of working life’ (Rocco and Thijssen, 2006, p.7). In the new directions of research on older workers, factors accounting for retirement and early retirement explain older workers’ employment, like the flipside of the same coin, as the polity encourages older workers to remain in employment longer on the conceptual basis of those new perspectives for reversing the trend to early retirement, and employers’ perceptions on older workers gradually changes. This has broadened the spectrum of labour market status of older workers from working full-time, working in a flexible form, looking for a job but unemployed, tentatively retired without pensions to fully retired with pensions or near pension age. Also, as the research focus has been transferred from retirement to work, disadvantages and discriminations that older workers face in their working lives seem to have been of more importance with regard to their status in the labour market. This will be discussed in more detail later in this chapter.

Figure 4.1 Factors Influencing Labour Market Status of Older Workers



* De Vroom (2004, p.8) explains that 'age-culture is the shorthand description of social norms, values, ideals or perceptions in society that structure the ideas of the age-work relationships'.

What factors make a difference to the labour market status and experience among older workers and how the factors are related to each other in influencing them are the main questions in the research area of older workers in the labour market. Figure 4.1 shows three types of critical factors which have been dealt with in this field, plus the influence of changes in the macro-level context. The factors are interrelated within as well as across supply-side, demand-side, policy-induced influence, and changes at the macro-level and their combined influence typically regulates the status and experience of older workers in the labour market, including employment, unemployment, earnings, and mobility, as well as retirement.³ Note that older workers' status and experience in the labour market as a consequence of the practice in the labour market for older workers potentially also affect the degree of influence of each factor affecting older workers' status in the labour market and the dynamic between the factors in their combined influence as indicated in Figure 4.1.

Supply-Side Factors

The supply-side factors include individual characteristics, such as health status, financial situation, marital and family situation, tastes for leisure, and attitudes of older workers to employment. Numerous studies which have explored the personal characteristics as major variables to influence older workers' experiences in the labour market have shown that individuals' health plays a decisive role in retirement and early retirement (Heywood and Siebert, 2009, p.5). However, there is no apparent consensus on the effect of self-reported health conditions on changes in employment status at older ages. While Alavinia and Burdorf (2008) concluded in their analysis across European countries⁴ that perceived poor health among persons aged 50-64 was strongly associated with non-participating in the labour force due to early retirement, being unemployed or being a homemaker, Blau and Shvydko (2011) showed in their US study that among workers aged 51-72, 30 per cent of those whose health turned from good to bad completely exited from the labour market while 15 per cent of individuals whose health remained good did, but 69 per cent of exits from employment were individuals whose health remained good whereas only 13 per cent of exits from employment were associated with individuals' decline in health from good to bad. Such inconsistency suggests that health problems alone cannot explain 'the abrupt transition to retirement' (Heywood and Siebert, 2009, p.6), which, again, implies that health could be a push factor for older workers to move toward another types of status in the labour market. Zucchelli, Harris, and Zhao (2012) corroborates it in their findings for Australia that health greatly influences cross-mobility between part-time, self-employment, and inactivity, and both part-time and self-employment could be used as a bridge towards permanent retirement by persons of ill-health even though health shock significantly increases the probability of abrupt economic inactivity.

Financial situation, such as assets, pension wealth, and earnings, consistently predicts retirement decisions as well (Gruber and Wise, 1999; Quinn, Burkhauser, and Myers, 1990; quoted in Wang and Shultz, 2010, p.185). In agreement with earlier research, De Wind, Geuskens, Reeuwijk, Westerman, Ybema, Burdorf, Bongers, and Van der Beek (2013) found in their qualitative study in the Netherlands that the financial situation and expected income during retirement played a role in early retirement, highlighting the

different importance of financial factors between the different pathways to early retirement in association with health status. Damman, Henkens, and Kalmijn (2011) also showed in their Dutch study that men without a pension shortfall were more likely to retire early, compared with those with one. However, the relationship between one's financial status and retirement decision is rather complicated (Wang and Shultz, 2010, p.185). For instance, Wang, Zhan, Liu, and Shultz's (2008, quoted in Wang and Shultz, 2010, p.185) longitudinal study which used the US data showed that retirees' total wealth was not able to predict the odds for retirees to take career bridge employment against full retirement. The influence of financial situation becomes a little more complex as well when it is combined with family care. If an individual is required to take on a caregiving responsibility for a family member, this works as a push factor toward retirement as explained below; but, the financial costs associated with a family member's illness or family financial obligations may preclude retirement. Damman, Henkens, and Kalmijn (2011) found that the more financially dependent children older men have, the less likely they retire early.

Marital status and family situation with regard to economic activity among older workers have received relatively little attention in the literature on the labour market participation of older workers (Lissenburgh and Smeaton, 2003; Szinovacz, 2003). However, both are critical stimuli to changes in employment status of older workers, providing a part of information on gender difference in retirement behaviour. Tanner (1997) found from further analysis of the UK Retirement Survey that older women were more likely than older men to say that they left employment before state pension age because they wanted to retire at the same time as their partner. The result is consistent with the findings from Szinovacz's (2013) analysis of the US Health and Retirement Study. She found that married women aged 50-64 were more likely than any other marital status or men 'to plan on stopping work in retirement and particularly less likely to plan on working with reduced hours' at old age (Szinovacz, 2013, p.1). But, Wang, Zhan, Liu, and Shultz's (2008) findings from the longitudinal US Health and Retirement data do not support the predictive effect of marital status in differentiating full retirement and general bridge employment. They explain that other aspects of family-related life, such as spouse working status (Wang, 2007), may moderate the effect of marital status.

An alternative explanation may be that the predictive effect of marital status is not only overshadowed by other predictors, including financial pressure or health considerations (Barnes-Farrell, 2003, quoted in Wang, Zhan, Liu, and Shultz, 2008), but also counterbalanced by no division of gender. On the other hand, family situation as a variable that influences economic activity typically refers to the needs of family care. Research on the relationship between work and care said that older women were most likely to provide care for sick, disabled or elderly relatives, partners, children or neighbours (Loretto, Vickerstaff, and White, 2005). According to the UK report by Arrowsmith (2004), caregiving responsibilities are a key reason for the workless not wanting a job or seeking work. It means that care is a contributor to discourage persons who have once been out of employment with caring responsibilities to re-enter into the labour market. However, comparing to marital status, family situation is associated more with movement into flexible employment among older workers. Howard (2005) and Mooney, Statham, and Simon (2002) suggested in their UK study that those who combined employment and caring would welcome a range of flexible working options, such as better access to flexible working hours, the opportunity to reduce working hours, the right to time-off for caring responsibilities, and the ability to work from home where feasible (quoted in Loretto, Vickerstaff, and White, 2005, p.43). Smeaton, Vegeris, and Sahin-Dikmen (2009) also recognised in their UK analysis the likely transition of older workers who had caring responsibilities to flexible working rather than to complete withdrawal from the labour market; however, they pointed out that the type of flexibility needed by carers for children and adults could differ significantly.

It is argued that the taste for leisure increases with age, and age *per se* is a strong determinant of retirement controlling many other factors (Heywood and Siebert, 2009, p.6). Scales and Scase (2000) and Phillipson (2004) suggested that people were increasingly expecting to be able to enjoy their retirement, in which they would spend pleasure time with their families, pursue leisure interests, and leave behind the stress of their working life (Loretto, Vickerstaff, and White, 2005, p.37). But, recent studies conducted in the United States and the United Kingdom (McNair, Flynn, Owen, Humphreys, and Woodfield, 2004; Smeaton, Vegeris, and Sahin-Dikmen, 2009; AARP, 2004; Lynch, 2006) found that the attitude of individual older workers to working for a

longer period was positive, and a considerable number of people, whether they were in work or retired, wanted to continue to work in their later life, especially under a flexible form. In the same vein, surveys which covered the attitude of older workers towards working in later life in Bulgaria (Daskalova, 2007) and in Singapore (Lim, 2003) observed that the majority of respondents preferred to continue working after retirement. These incoherent results between the taste for leisure and preference for working longer among older workers can be accounted for partly by the changes in law which modify the taste. Gendell (2008) assumed that ‘the abolition of mandatory retirement in the United States had a symbolic effect and confirmed the propriety of continuing to work’ (quoted in Heywood and Siebert, 2009, p.6). Another possible reason may be related to the facts that wages are considerably higher than pensions and that longer employment enables workers to increase their pension as Daskalova (2007) pointed out.

Demand-Side Factors

Although numerous studies have concentrated on supply-side factors that influence an individual’s work/retirement decision, the labour market status of older workers is, in practice, more restricted by demand-side factors, such as fixed costs, deferred pay, training, adaptability, productivity, and employers’ attitude. Heywood and Siebert (2009) give brief accounts and famous research examples of fixed costs and deferred pay, and the main substance of the discussion here about each of the two factors is borrowed from them. According to Hurd (1996, quoted in Heywood and Siebert, 2009, p.6) who provided a comprehensive discussion of the fixed costs problem for older workers, when firms hire, costs occur both when selecting and hiring workers to fill jobs and when training the workers; and these costs are per head and make part-time workers more expensive. Hurd (1996, quoted in Heywood and Siebert, 2009, p.7) also addressed company health insurance premiums in addition to the fixed costs since the premiums were charged on a per-worker basis rather than on a per-hour one. If older workers wish to move into part-time work, they would have to accept a large reduction in earnings to compensate for the job’s fixed costs; but, the reduction in pay may be prohibited by anti-discrimination rules, and such wage inflexibility may lead to few new

part-time openings available (Heywood and Siebert, 2009, p.7). The problem of fixed costs could explain a part of the reason why firms are put off older workers and of the abruptness of the retirement transition (Heywood and Siebert, 2009, p.7). Deferred pay in which employees are paid less than their marginal product earlier in the contract but more later, and thus firms need to set a definite retirement date also deters firms from hiring older workers because their shorter expected tenure makes them less motivated by delayed compensation (Heywood and Siebert, 2009, pp.7-8). Several studies ‘support the predictions that deferred pay contracts give older workers less chance of being hired and needs with mandatory retirement’ (Heywood and Siebert, 2009, p.8). Hutchens’ famous early study (1986, quoted in Heywood and Siebert, 2009, p.8) found that job opportunities for older workers were higher in occupations and industries in which pensions, mandatory retirement, and tenure were lower, and delayed payment contracts were not used. These results are confirmed in other US studies such as Scott, Berger, and Garen (1995), Hirsch, Macpherson, and Hardy (2000) and Hu (2003) (quoted in Daniel and Heywood, 2007). Daniel and Heywood (2007, quoted in Heywood and Siebert, 2009, p.8) conducted a similar study for the United Kingdom and found that ‘firms with pension provision, more steeply increasing wages, and with longer tenure as expected with deferred compensation’ were less likely to hire older workers. Comparable findings have been reported for Australia (Adams and Heywood, 2007), Germany (Heywood, Jirjahn, and Tsertsvardze, 2010), and Hong Kong (Heywood, Ho, and Wei, 1999) (quoted in Heywood and Siebert, 2009).

Training is another demand-side factor influencing the status of older workers in the labour market. Tikkanen, Lahn, Withnall, Ward, and Lyng’s (2002) case studies which were added to WORKTOW, a multidisciplinary research project carried out in 27 small and medium sized enterprises in the United Kingdom, Finland, and Norway showed that work-based learning and training for older employees had the potential to improve learning motivation, strengthen self-confidence and organisational commitment, and improve the social climate in groups with mixed ages. Picchio and van Ours (2013) also found, using data from the Netherlands, that on-the-job training significantly increased future employment prospects even for older workers and argued that it suggested firm-provided training may be an important instrument to retain older workers at work. The

problem is, however, that older employees to a lesser extent take part in training. Wooden, VandenHeuvel, Cully, and Curtain (2001) identified six barriers to training for older workers, including absence of paid work, learning capacity, education, uncertain retirement age, employer discrimination, and self-discrimination. OECD (2011, p.74) suggests not only that ‘employers and public employment services are less likely offer training to older workers’ but also that ‘older workers are less willing to take up training opportunities because the expected pay-back period on their investment in training is shorter than for younger workers’.

Closely connected to skills and training, adaptability and productivity seem to be factors that influence employers’ attitudes toward older workers rather than direct contributors that affect the labour market status of older employees because studies of the two factors have been based mostly on surveys of employers, managers, and foremen. Adaptability of older workers is not a facet of employment which is amenable to measure, but the general impression given by studies is that older workers have less desire or ability to adapt to new methods of work (Makeham, 1980, p.21). In a survey cited in the OECD (1967, quoted in Makeham, 1980, p.21), employers in the United States rated their older employees less than satisfactory only on adaptability to change among ten characteristics bearing on job performance. Aubert, Caroli, and Roger (2006) asserted that older employees were far less likely to work in those positions or firms that required the latest technological innovations. Meanwhile, given that older individuals were less productive, earlier studies of relative productivity informed that despite a slight decline in productivity with age, differences were greater within age groups than between age groups. The US Department of Labor (1956; 1957) which studied eight manufacturing establishments in footwear and men’s clothing during the pilot work and twenty six establishments in footwear and household furniture during the extended survey found that beyond the age of 55, performance declined by less than 10 per cent, but there were considerable variations within each age group. The Canadian Department of Labor’s (1959, p.3) study of retail trade also concluded that older employees’ performance appeared to ‘level off or decline slightly’. Findings from more recent studies show that employers’ ratings on overall productivity of older workers varies by country and stress differences in productivity at older ages by occupation. A

comparative survey which was conducted among employers from Greece, Spain, the Netherlands, and the United Kingdom by van Dalen, Henkens, and Schippers (2009) found that only employers from the United Kingdom perceived older employees' productivity to be higher than that of young workers, and employers in the Netherlands had the most negative expectations regarding productivity of older workers. Also, Skirbekk (2004) concludes through his literature survey that although individuals' job performance often decreases towards the end of one's career, in particular when problem solving, learning, and speed are important, older individuals maintain a relatively high productivity level in work tasks where experience and verbal abilities matter more.

There is substantial evidence that employers consider older workers to be more reliable, more committed to the organisation and have better interpersonal skills (Taylor and Walker, 1994; McGregor, 2001; IRS, 2003, quoted in Loretto and White, 2006; McGregor and Gray, 2002; van Dalen, Henkens, and Schippers, 2009) while older workers are also perceived to be inflexible, resist training, and are resistant to change (Chiu, Chan, Snape, and Redman, 2001; Redman and Snape, 2002, quoted in Loretto and White, 2006; McGregor and Gray, 2002; van Dalen, Henkens, and Schippers, 2009). However, there is relatively little knowledge about how employers' perceptions of various attributes older workers have influences their recruitment and retention (Loretto and White, 2006). Taylor and Walker's (1998) postal survey of large employers in the United Kingdom, which was a prominent attempt to examine a causal link between employers' attitudes and their discriminatory practices towards older workers, indicated that perceived productivity, reliability, ability to adapt to new technologies, interest in technological change, and flexibility were not associated with recruitment, training, and promotion practice while perceived trainability, creativity, cautiousness, physical capabilities, the likelihood of having an accident, and ability to work with younger workers were related with employment practices. However, in Loretto and White's (2006) qualitative study which was inspired by Taylor and Walker's research and conducted in Scotland, reliability, productivity, and flexibility were among the most frequently mentioned by employers as the attributes associated with their employment behaviour. One reason for the difference observed by Loretto and White was that

different attributes were valued in organisations of different size.

The Role of Public Policy

Public policy makers have played important roles in influencing the participation of older workers in the labour market, in both exit and retention. Public policy induced early and on-time exit from the labour market during the two decades before the mid-1990s. However, as the key theme of related policies has switched over in most developed countries to a new line encouraging mature workers to remain in the labour force, the impact of public policy on the status of older workers has entered another phase. Public policies which exist in different countries and are involved in determining the status of older workers in the labour market can be broadly grouped into two main areas. One is old-age pensions and other parts of the tax and welfare system, which mainly include public pension schemes, official early retirement schemes, implicit taxes on continued work at older ages, de facto early retirement schemes, and private pension schemes (OECD, 2006a, p.52). The other is employment protection legislation (EPL), including anti-age discrimination laws.

Pensions, Tax, and Other Welfare Benefits

Pension-related policies have provided financial incentives for older people to leave work and disincentives for them to remain in or return to work through an ‘income effect’ which refers to the tendency that ‘the higher are old-age pensions, the more attractive retirement is’, and a ‘substitution effect’, which matters with regard to the effect of ‘an extra year’s work to the flow of income both from earnings and from old-age pensions and other benefits’ (OECD, 2006a, p.52). Recent pension reforms in many countries, however, are seeking the dissolution or reversal of those effects and resulting in lengthening working lives. Increases in the statutory pension age, improved provision of financial incentives to work beyond pension age, and less or no early retirement schemes have been largely taken up as measures for the aim (OECD, 2013b, p.23). Table 4.1 which displays the current public and private, mandatory or quasi-mandatory pension schemes in the OECD countries informs the specific strategies for the three measures. In this part, the strategies and their effects will be briefly reviewed within the

scope of public pension schemes, private pension schemes, and early retirement schemes.

Table 4.1 Pension Ages and Financial Work Incentives/Retirement Disincentives by Type of Scheme in OECD Countries

	Scheme	Normal age	Increase (%)	Early age	Reduction (%)		Scheme	Normal age	Increase (%)	Early age	Reduction (%)
Australia	T DC	67 67	-	.. 60	-	Japan	Basic/ DB	65	8.4	60	6.0
Austria	DB	65	4.2	62	5.1	Korea	DB	65	7.2	60	6.0
Belgium	DB	65	0	62	0	Luxembourg	DB	65	..	57/60	0
Canada	Basic/ T DB	67 65	7.2 8.4	.. 60	7.2	Mexico	Min DC	65 65	0 -	60 any age/60	0 -
Chile	Basic/ T DC	65 65/60	-	.. any age	-	Netherlands	Basic	67	..	..
Czech Republic	DB	69*	6.0	64	3.6-5.6	New Zealand	Basic	65	..	..
Denmark	Basic/ T DC	67 67	5.8 -	.. ..		Norway	Min NDC/ DC	67 67	-	.. 62	-
Estonia	Points DC	65 65	10.8 -	62 62	4.8 -	Poland	NCD/ DC	67	-	..	
Finland	Min DB	65 68	7.2 4.8	63 63	4.8	Portugal	DB	65	4.0- 12.0	55	6.0
France	DB DB(Occ)	67 67	5.0 0	62 60	5.0 4.0-7.0	Slovak Republic	Points DC	67 67	6.0 -	65 65	6.5 -
Germany	Points	67	6.0	63	3.6	Slovenia	DB	65	4.0	60	3.6
Greece	DB	67	0	62	0/6.0	Spain	DB	67	2.0-4.0	65	6.0-8.0
Hungary	DB	65	6.0	..		Sweden	Min NDC DC	65 65 65	4.9-61 -	.. 61 55/61	4.1-4.7 -
Iceland	Basic/ T DB(Occ)	67 67	6.0	.. 65	7.0	Switzerland	DB DB(Occ)	65M/6 4F 65M/6 4F	5.2-6.3 4.5-5.0	63M/6 2F 58	6.8 6.35- 7.1
Ireland	Basic/ T	68	..	..		Turkey	DB	65	0	..	
Israel	Basic/ T DC	67M/6 4F 67	5.0 -	..		United Kingdom	Basic/ DB	68	10.4	..	
Italy	NDC	67	-	62	-	United States	DB	67	8.0	62	5.0/6.7

Source: OECD Pension at a Glance 2013, p.127

Note: DB = defined benefit; DC = defined contribution; Min = minimum benefit; NDC = notional defined contribution; Occ = occupational; T = targeted; .. = early retirement or deferral of pension is not available; - = benefits are automatically adjusted for early or late retirement in DC scheme; Where pension ages for men and women differ they are shown as M/F.

* The Czech Republic decided on an open-ended increase of pension age by two months per year (OECD, 2013b, p.9)

Public pension schemes

The main ways that public pensions affect individuals' work/retirement decisions can be summed up as the pension eligibility age, the generosity of pensions, and the degree of flexibility in combining income from work and pensions (OECD, 2006a). In the last decade, most of the 34 OECD countries have passed legislation to raise the pension age or the contribution requirements that earn entitlement to full pension benefits (OECD, 2013b, p.23). As shown in Table 4.1, an official pension age of 67 is now becoming more common, and some countries such as Czech Republic, Ireland and the United Kingdom have gone even further, moving to 68 or 69 years (OECD, 2013b). The same pension age for men and women has also come to be a clear trend across the OECD countries, with exception only of Israel and Switzerland (OECD, 2013b).

Although there is little work on how a rise in the pension age affects the labour force participation (Staubli and Zweimüller, 2013), increases in the pension eligibility age are known to affect working longer. Gruber and Wise (2002) found from their analysis of 12 countries, Belgium, Canada, Denmark, France, Germany, Italy, Japan, the Netherlands, Spain, Sweden, the United Kingdom, and the United States with very different social security programmes, labour market institutions, cultural histories, and other social characteristics that raising the age of benefit eligibility by 3 years increased the proportion of men aged 56-65 who were working by as much as 36 per cent over the long run. They concluded that the state pension was clearly the key factor in enabling and prompting people to retire, and a reform delaying benefit eligibility would reduce the substantial proportion of men aged 56-65 out of the labour force. More recent analysis that Mastrobuoni (2009) conducted in the US context showed that an increase in the normal pension age by 2 months delayed effective retirement by around 1 month.

In response to the combination of lower mortality rate, higher life expectancy, and lower fertility rate, many countries have also been cutting the benefits for the financial sustainability of pension systems. Pension reforms in the OECD countries since the early 1990s have reduced future public pension benefits on average by 20 per cent (OECD, 2011). While some have done it by changing pension contribution rates or financing mechanisms, such as building public pension reserves, others, by modifying

the calculation or indexation rules applicable to pension benefits under the existing systems or even further transforming the entire systems, such as from a defined-benefit (DB) scheme to a defined-contribution (DC) scheme or a notional defined-contribution (NDC) scheme (Martin and Whitehouse, 2008). Overall pension benefit cuts may prevent workers from retiring early and delay the timing of it to the official pension eligibility age and over while more generous benefits work as a work disincentive. Henseke (2011) observed among the OECD countries that, on average, countries with relatively generous pension systems experienced lower employment rates among persons aged 55-64, and more generous pension systems tended to lead to a more noticeable decline in employment after the ages 55-59. Along with this, a large number of the OECD countries have introduced benefit increments for deferral of pension take-up and/or benefit penalties for retirement before the statutory or minimum pensionable age as shown in Table 4.1 (OECD, 2013b). An extensive literature typically found that changes in retirement benefits may have significant impacts on the timing of retirement (Staubli and Zweimüller, 2013)⁵. However, compared to the benefit penalties for early retirement, the pension increment may not have sizable influence on work incentives when work and pension receipt after the normal pension age can be combined (OECD, 2013b). The financial penalties for early retirement and their effects will be discussed in the section on early retirement schemes.

Apart from the pension eligibility age and the generosity of pension benefits, how other institutional arrangements concerning pension receipts are set also influences working after the normal pension age (OECD, 2006a, p.59). As shown in Table 4.2, a number of countries have developed related rules to allow people to continue working and draw pensions at the same time. However, some countries have limits to combining pension receipts and working, particularly during a period between a life-time job and full retirement. In Poland and Slovenia, working while taking pension is simply not allowed for workers below normal retirement age, and in Spain, pension benefits are reduced according to the length of the working day if an individual below normal retirement age combine working and pension receipt. In Austria and Germany, earnings from work should be below a certain level for working individuals aged below 65 to receive full or reduced pension benefits. These limits are typically not applied to workers aged 65 and

Table 4.2 Limits to Combining Work and Pensions

Country	Rule	Country	Rule	Country	Rule
Austria	Below 65: above EUR 349.01/month the pension is fully withdrawn Above 65: no limit	Germany	Means-tested benefit for the over 64s: reduced by 30% of income earned if > EUR 180/month and fully withdrawn if income > of the full means-tested (i.e. EUR 180); For those aged below 65 on early statutory retirement: amounts exceeding EUR 400/month are deducted from pensions	Netherlands	No limits
Belgium	If above EUR 21,436.5 (single) the pension is reduced by the amount beyond the limit; If earnings are 15% above the threshold, the pension is fully withdrawn	Greece	Possible after age 55; Limited if monthly pension income is below EUR 733, the pension in this case is reduced by 70% for every extra euro	Poland	Limits below normal retirement age
Bulgaria	No limits	Hungary	Limit: 18 times the minimum wage (EUR 6,027)	Portugal	No limit, but working in the same company as before retirement is not allowed for three years after pension
Cyprus	No limits	Ireland	No limit for the state pension (contributory)*	Romania	It is only allowed to combine work and pension if pension is lower than the gross average wage (EUR 463/year)
Czech Republic	No limit; Additional annual 0.4% receiving full pension; There are restriction for early retirement	Italy	No limits; however, other social benefits (i.e. disability) or survivors' pensions are cut progressively if annual income is above EUR 23,826.40 or EUR 18,229.77, respectively	Slovak Republic	No limits
Denmark	Partial means test of supplementary pension	Lavita	No limits; the pension contribution rate is lower when combining work and pensions rather than for pension deferral	Slovenia	Limits below normal retirement age
Estonia	No limits	Lithuania	No limits	Spain	Under 65: pension reduced according to the length of the working day
Finland	No limits	Luxembourg	No limits; contribution paid when working are refunded at the end of the year	Sweden	No limits
France	No limits for the over-65s and for those aged between 60 and 65 who have contributed for at least 40 years	Malta	No limits; contribution rate: 10% of wage until 65 (then contribution stop)	UK	Pension credit is reduced by full income receipt as long as income is below EUR 168.77/week

Source: OECD (2014b), p.102

* In Ireland, there was a limit to earnings from work as EUR 38/week under the state pension (transition) payable between 65 and 66; however, the state pension (transition) has been abolished in January, 2014.

over. This suggests that the limits ostensibly do not act as a work disincentive, at least for those over the normal pension age. However, the limits to combining work and pension receipt in early old age can prevent those aged 65 and over from working in as much as an individual would hardly find a job after the normal pension age if s/he stopped working for pension benefits before reaching pension age.

Private pension schemes

Private pension schemes play a large role in pension provision in a number of countries, and these have been getting more important in recent years as pension reforms have reduced public pension entitlements (OECD, 2006a; OECD, 2013b). According to OECD (2013b), private pensions are mandatory or quasi-mandatory in 18 OECD countries and cover almost or more than 70 per cent of the working age population in Australia, Chile, Denmark, Estonia, Finland, Iceland, Israel, the Netherlands, Norway, and Switzerland and more than 40 per cent in Mexico and Slovak Republic; in further eight OECD countries, such as Belgium, Czech Republic, Germany, Iceland, Ireland, New Zealand, the United Kingdom, and the United States, voluntary private pensions cover more than 40 per cent of the working age population. Because of this trend, private pension schemes can exert an significant influence on work/retirement decisions (OECD, 2006a).

The ways that private pensions can affect individuals' work/retirement decisions are related to the earliest age at which benefits can be accessed and the replacement rate which shows the level of pension entitlement in retirement relative to earnings when working. The earliest age accessible to pension benefits vary by country and across schemes even within a country but is typically governed by some minimum age that tax regulations set up (OECD, 2006a, p.60). Deferring the age can exert pressure not only upon workers' work/retirement decisions but also on employers' utilisation of private pension for shedding older workers. Australia and the United Kingdom are adopting a higher minimum age for private pension benefits. Gradual rises of the age are scheduled in Australia over the period 2015-2025, and the United Kingdom raised the age from 50 to 55 in 2010 and will make a further increase from 55 to 57 in 2028. Besides the direct way of increasing the minimum accessible age to pension benefits, there are indirect

measures which may virtually put off the age of retirement. In Australia, the upper age limits for private pension compulsory contributions has been removed, and in Luxembourg, the rate of increase in pension savings has been lowered (OECD, 2013b, p.24). OECD (2013b, p.24) forecasts that if workers are to gain pensions at pre-reform levels under such arrangements, they will need to pay contributions for three extra years or accept an average entitlement in 2050 which will be approximately 12 per cent less than the present one.

Replacement rates also differ from country to country and from scheme to scheme even within a country. Among thirteen OECD countries, which have mandatory or quasi-mandatory schemes, replacement rates from the schemes for average earners range from 22 per cent to 39 per cent in eight; but, the rates are much higher than the range in Denmark, Iceland, Israel, and the Netherlands and considerably lower in Norway (OECD, 2013b, p.136). Since private pensions have been developed in many countries as public pensions have been relatively small, replacement rates in private pensions may significantly influence individuals' retirement income and thus their retirement decisions. Studies analysing labour market exit in the United Kingdom agree that a large portion of workers with private pension schemes, including occupational pensions, retire at age 55 when relatively generous benefits become available while workers are not encouraged to retire early by the flat rate state retirement pension scheme (Oswald, 1999). Meanwhile, the type of private pension scheme can affect the timing of relevant pension wealth accrual. Defined-contribution schemes that have become more prevalent in recent years arguably tend to require more years on the job for pension entitlement with an acceptable replacement rate than defined-benefit schemes because the former is based on an individual's amount of contribution and its investment performance while the latter is tied to workers' earnings, tenure of service, and age. Friedberg and Webb (2005) found in the United States that workers with defined-contribution plans retired two years later on average, compared to their counterparts with defined-benefit plans, and argued that the changes in pension structure from defined-benefit schemes to defined-contribution plans can help explain the rise in American retirement age. But, it should be noted that the defined-contribution scheme is promoted for improving financial sustainability rather than for encouraging working longer.

Official early retirement schemes

Early exits from the labour market have occurred mainly through provisions in the pension systems, formal early retirement schemes, or other social transfer programmes, such as disability or unemployment benefits (OECD, 2006a). Official early exit provisions in the pension systems and formal early retirement schemes with relatively low early pension eligibility age and generous entitlements were widespread across countries in response to growing unemployment among younger people. But, their effects which were below expectations with regard to unemployment have led to reducing or abolishing the formal early retirement schemes, interlinking with rising concerns about population ageing. As shown in Table 4.1, nine OECD countries, including Denmark, Hungary, Ireland, Israel, the Netherlands, New Zealand, Poland, Turkey, and the United Kingdom, do not allow early retirement in any mandatory part of the pension systems while the majority of countries have replaced their arrangement by increasing the early retirement age and reducing benefits. Meanwhile, the pathway through disability or unemployment benefit systems, which is not an official form of early retirement schemes, is still an effective route and will be dealt with in the section of de facto early retirement schemes.

A series of previous studies on pension provision and retirement have agreed a sharp increase in labour market exit at the age of first eligibility for retirement benefits (Gruber and Wise, 1999). Given this empirical regularity, raising the early retirement age is likely to be more effective in lengthening working life than increasing the normal pension age. Using two pension reforms in Austria which increased the early retirement age, Staubli and Zweimüller (2013) studied to what extent the increase in the early retirement age turned out to be an effective tool to increase employment of older workers and found that raising the early retirement age increased employment by 9.75 percentage points among affected men and by 11 percentage points among affected women. Vestad (2013) who estimated labour supply effects of an early retirement programme in Norway also had similar findings. If there had not been an early retirement option, 50 per cent of early retired pensioners would be working at the age of 66.5, which is a little below the Norway retirement age, 67; and if the age limit for early retirement had been 64 rather than 62, 70 per cent would be working at the age of 63.

On top of an increase in the early retirement age, the financial penalties for early retirement are also likely to restrain workers from retiring earlier than, at least, the normal retirement age. Hanel and Riphahn (2012) investigated how reduced benefits for early retirement affected female workers' retirement decisions after the 1991 reform of the Switzerland mandatory retirement insurance and reported that reduction in benefits by 3.4 per cent lowered the odds of retirement at age 62 from 46 per cent to 22 per cent.

'Tax force'

'Tax force' is Gruber and Wise's term referring to the 'burden' of implicit taxes on continued work (Heywood and Siebert, 2009, p.9). If public retirement pension benefits are raised, or eligibility ages, including early retirement/disability programmes, are lowered, implicit taxes on working increases (Heywood and Siebert, 2009, p.9). Based on their findings from the two consecutive analyses of eleven and twelve industrialised countries, including Belgium, Canada, Denmark (included only in the second analysis), France, Germany, Italy, Japan, the Netherlands, Spain, Sweden, the United Kingdom, and the United States, for the period from the 1960s to the mid-1990s, Gruber and Wise (1999; 2002) argued that there were a clear relationship between the public pension tax on work and leaving from the labour force, which was largely causal. In a similar vein, Duval (2003) estimated the implicit tax penalty of working an additional five years among OECD countries and mainly found that changes in implicit tax rates and standard retirement ages explained about one-third of the trend decline in older males' participation in the OECD between 1970 and 2000 (Duval, 2003, p.22, quoted in Heywood and Siebert, 2009, p.9). More specifically, the estimates suggested that in several European countries, including Austria, Belgium, France, Finland, Germany, Italy, and Luxembourg, there were substantial tax penalties to continuing to work after the age of 60 and also that the tax penalties were closely intertwined with higher probabilities of retirement before the age of 65 in those countries (OECD, 2006a, p.61). Van Soest and Vonkova (2014, p.247) also found from their simulations with the Dutch survey data that changing the rewards for delaying retirement from actuarially fair to 50 per cent of actuarially fair would lower the mean retirement age by 9.7 months.

However, Engelhardt's (2012) analysis using the first two waves (2004/05 and 2006/07) of the Survey of Health, Ageing and Retirement in Europe (SHARE) for eleven European countries, including Austria, Belgium, Denmark, France, Germany, Italy, the Netherlands, Spain, Sweden, Switzerland, and the United Kingdom, did not find any significant effect of implicit tax rate on the exit from the labour market. Moreover, it is questionable whether no large implicit tax on working beyond the pensionable age and delaying the receipt of benefits substantially encourages older adults to continue to work. Although Duval's (2003) estimates indicated that Denmark, Iceland, New Zealand, the Netherlands, and Turkey had around or below five per cent implicit tax on continued work for five more years in early retirement route as well as in regular old-age pension system in both 2007 and 2009 (OECD, 2014a, p.96), OECD's (2012) *Pensions and Labour Market Statistics* showed that the average effective age of retirement in Denmark and the Netherlands fell short of the official retirement age whereas the age was reasonably higher than the official one in Iceland, New Zealand, and Turkey, during the period of 2006-2011 (OECD, 2013c, p.22). Even where there are 'actuarially neutral'⁶ increases in pension entitlements for working extra years, a marked spike in retirement may occur around the earliest age at which workers can receive a pension (OECD, 2006a, p.57). According to OECD (2006a), the United States is a representative case, and Hanel and Riphahn (2012) explains it as the possibility of unobserved heterogeneity in preference for retirement which might influence both (dis)incentives and responses to them.

De facto early retirement schemes

The empirical regularity with regard to labour market exit at the age of first eligibility for retirement benefits sheds light on the odds that the abolition of official early retirement schemes can lead people to seek another possible way to leave work earlier than their normal retirement age with affordable financial benefits. This implies larger spillover effects of reforming early retirement schemes on other non-pension benefits. OECD (2006a) pointed it out that any efforts to reform formal incentive systems for early retirement could not make its purpose if they were weakened by other non-pension benefit programmes which allowed people to exit from work prematurely. In practice, disability or unemployment benefits are often taken by workers as alternative routes

into early retirement, especially where the benefits are relatively easy to access (OECD, 2006a; 2011). Duval (2003) found from his research across the OECD countries that social transfer programmes, including disability and unemployment benefits, had sizeable effects on the departure of older male workers aged 55-59 from the labour force. Staubli and Zweimüller (2013) found from their study on the effects of increased early retirement age on employment of older workers in Austria that raising the early retirement age had large spillover effects on the unemployment insurance programme. Registered unemployment among men increased by 12.5 percentage points and among women by 11.8 percentage points. Spillovers to the disability programme were relatively small; however, low-wage and less healthy workers, in particular, retired early through the disability programme or waited for being the new early retirement age with receiving unemployment benefits.

Although there are some examples of efforts to tackle those de facto early retirement schemes by tightening eligibility or restricting replacement rates, such as in Canada, Denmark, Finland, Italy, the Netherlands, Norway, Sweden, and the United Kingdom, the majority of countries have not made much progress in tackling the utilisation of the non-pension benefits for early retirement, mainly due to political resistance to change in those provisions for the vulnerable (OECD, 2006a).

Employment Protection Legislation (EPL)

Employment protection legislation in general

While pension and tax-related policies are more related to the supply-side of the labour market in as much as they affect individuals' work/retirement decision, employment protection legislation, including anti-discrimination law, concerns the demand-side of the labour market because it has influence on employers' employment/dismissal decision. Strict employment protection legislation can operate as a double-edged sword in labour market outcomes for workers. On the one hand, the legislation may lead to greater retention of workers because it raises firing costs; at the same time, it may reduce the number of hires since it increases hiring costs as well; and as a result, the net impact on employment rates is uncertain (OECD, 2006a, p.70). Daniel and Siebert's (2005) analysis conducted mostly in the UK and the US contexts found that stricter

protection provisions tended to lower hiring rates at both ends of the age spectrum while OECD (2004) suggested that the relationship between employment protection legislation and labour market outcomes was less clear for older workers than for other age and gender groups. Meanwhile, OECD (2011a) which used the index of the strictness of employment protection legislation as set out in OECD (2004) and compared the index with labour market outcomes for men aged 50-64, showed that there was a strong negative relationship between employment protection and both employment rates and hiring rates of older workers. However, OECD (2011a, p.73) added that more rigorous studies which controlled for other factors affecting employment rates of older workers, including OECD (2006b) and Dorn and Sousa-Poza (2010), showed a much weaker relationship between employment protection and labour market outcomes of older workers. Henseke (2011) also found that countries with relatively rigid employment protection laws, along with relatively generous pension systems, had lower employment rates among individuals aged 55-64, but a change just in employment protection did not improve the employment of older workers as such.

Although stringent employment protection legislation reduces the odds of dismissal among older workers, it, on the other hand, may raise unemployment duration of older jobseekers because employers tend not to newly hire (Siebert, 2005; quoted in Heywood and Siebert, 2009). While there are few studies on the relationship between employment protection legislation and labour market outcomes of older workers, research on the relationship between the legislation and unemployment has been recently active. Daniel and Siebert's (2005) work of the OECD countries showed the prediction; and Bertola, Blau, and Kahn (2007) also found the same pattern (Heywood and Siebert, 2009, p.11).

Anti-age discrimination legislation

Although legal provisions banning age discrimination have been introduced in a considerable number of countries, such as Australia, Canada, Czech Republic, Switzerland, the United Kingdom, and the United States, they are evaluated either not very effective or insufficient (OECD, 2006a). Anti-age discrimination law is a form of employment protection legislation, which also have two opposing effects on the status

of workers in the labour market (Heywood and Siebert, 2009). Lahey's (2008) results from the United States showed that older white male workers in states with anti-age discrimination laws were 0.2 percentage points less likely to be hired, worked 0.8-1.3 weeks less a year, were 0.5-0.7 percentage points more likely to report being retired, and were 1.6-3.0 percentage points more likely to report that they were not employed, compared to counterparts in states without the laws. Neumark and Button (2014) also examined in the US context whether stronger age discrimination protections helped older workers weather the Great Recession and found very little evidence for their positive effects. Rather, they concluded that stronger age discrimination protections were combined with more negative effects of the Great Recession. Lahey (2010) added in her further research the point that the US anti-age discrimination legislation have more recently acted as a means of keeping down the costs of entitlement programmes. According to her, European anti-age discrimination legislation, with less enforcement and more exemptions than the US one, could have smaller effects on employment among older workers.

Some countries have directly addressed the labour market to increase the participation rates of older workers by abolishing or increasing mandatory retirement ages (OECD, 2013b). In Australia, Canada, New Zealand, the United Kingdom, and the United States, for example, mandatory retirement is prohibited at any age as a way of combating age discrimination against older workers on the job market; and in France, Japan, and Sweden, minimum permitted mandatory retirement ages have been raised (Wood, Robertson, and Wintersgill, 2010, quoted in OECD, 2013a, p.85). According to a comparative review of international approaches to mandatory retirement conducted by Wood, Robertson, and Wintersgill (2010), anti-age discrimination legislation, with no other supporting policies to pull in older workers, did not have a significant impact on the participation rates of older people in the labour market. They found that employers often thought prohibiting mandatory retirement would increase their costs while it was not clear whether the prohibition would bring about actually the case, with the exception of countries where seniority wages were common. However, their findings suggested that age legislation could make employers to provide more opportunities and flexible conditions for older workers to work longer through phased transition to

retirement.

Age Discrimination in Working Life

The prevalence of early retirement brought about ‘an ‘early retirement culture’, which involved a perception of early retirement as ‘normal’ practice incorporated into individual retirement plans as well as companies’ policy, but also an increasing emergence of negative age stereotypes’ (Hofäcker and Unt, 2013, pp.163-164). Although early retirement has already been an outdated practice and working longer has been encouraged by governments and become more acceptable in societies, employers’ perception and treatment of older workers has not changed very much. In this context, disadvantages and discriminations that older workers face at the workplace can be an index to inform of their status in the labour market.

There is a large volume of research in the field of age discrimination against older workers at the workplace. Wood, Wilkinson, and Harcourt (2008) fully reviewed the literature on this research area, and it would be useful to summarise their discussion for an overview of it. They divided the existing research into three broad categories, ‘the underlying causes and consequences of age discrimination at the workplace’, its ‘nature and extent’, and ‘the effects of various governmental initiatives and policy options’ (Wood, Wilkinson, and Harcourt, 2008, p.426). Among the three, the review of research on the effects of government initiatives and policy options is omitted in this section because it was already discussed above. According to Wood, Wilkinson, and Harcourt (2008), research which explores the causes and consequences of age discrimination at the workplace is firmly based on theoretical perspectives, mainly neoliberal accounts and political economy. There are three strands of neoliberal accounts: the first argues that ‘older workers’ higher pay simply makes them less attractive to employers’; the second suggests that older workers often return to the labour market to get insecure and low paid jobs ‘as a lifestyle choice’; and the third argues that employers discriminate against older workers due to their lack of information on older workers’ productivity and reliance on ‘erroneous stereotypes’ (Wood, Wilkinson, and Harcourt, 2008, p.426). Political economy accounts which focus on ‘the relationship between culture and,

particularly institutions, in reinforcing age-based inequality at the workplace' (Wood, Wilkinson, and Harcourt, 2008, p.428) contend that older workers tend to bear in the context of industrial change a proportion of 'costs of periodic structural changes under capitalism', such as flexibility, leaner organisation, the fragmentation of the employment relationship, and the changing sectoral composition, particularly because 'it is more socially acceptable, even to the older workers themselves' and also because 'they are more easily persuaded and pressured' to take the costs as Taylor and Walker (1997, pp.307-308) note (Wood, Wilkinson, and Harcourt, 2008, p.429).

The second category of research which informs of the nature and extent of age discrimination at the workplace shows that older workers are more likely to be discriminated against in recruiting and hiring (Urwin, 2004; Walker, 1993; Sargeant, 2001, quoted in Wood, Wilkinson, and Harcourt, 2008), redundancy situation (Arrowsmith and McGoldrick, 1997; Sargeant, 2001; Walker, 2005, quoted in Wood, Wilkinson, and Harcourt, 2008), and promotion and training (Walker, 1993, quoted in Wood, Wilkinson, and Harcourt, 2008), also more likely to be dismissed as a result of the negative perception of older employees held by managers (Johnson and Neumark, 1997, quoted in Wood, Wilkinson, and Harcourt, 2008), but less likely to find jobs while leaving the labour force (Rix, 2005; McGregor and Gray, 2001, quoted in Wood, Wilkinson, and Harcourt, 2008) and hence, more likely to exit the labour force permanently as Neumark (2003, quoted in Wood, Wilkinson, and Harcourt, 2008) points out. More critical literature argues that older workers often face an unfavourable 'choice between poverty and workplace discrimination' (Wood, Wilkinson, and Harcourt, 2008, p.432) as the costs of social welfare have increased with the population ageing. This wide range of discrimination against older workers is characterised as being more related to stereotypes, prejudice, and age culture combined with changes in demographics and economic structure in as much as findings from a rich body of research on the relationship between age and productivity, which has been regarded as a prominent factor to explain older workers' disadvantages at the workplace, are inconsistent. Another nature of discrimination against older workers is that the discrimination 'can be concealed in a range of ways' (Wood, Wilkinson, and Harcourt, 2008, p.435), for example, relating to equal opportunity in hiring, pay discrimination,

and sectoral attributes, which force older employees out into retirement.

So far, research on older workers which illustrates their status in the labour market has been reviewed. It suggests the fact that the research on older workers has focused exclusively on employment issues, including hiring, dismissal, redundancy, retirement, and discrimination, and also the one that older workers are likely to be vulnerable in the labour market. This implies that there is a critical research vacuum in as much as older workers' vulnerability found in one dimension of their working life, such as employment issues, is bound to lead to various dimensions, including wages and earnings. That is, the need for research about the issues of wages and earnings and policies relating to income from work among older workers, with a focus on their vulnerability in the labour market is addressed. Studying the effect of the minimum wage focusing on older workers may answer the need, in as much as the minimum wage is a public policy which intervenes in wages and earnings for vulnerable workers in the labour market. However, compared to an enormous amount of research about the effect of the minimum wage, older workers tend to have long been ruled out in this research field. This point will be shown in the following part of this chapter through a review of studies which explored the effects of minimum wages focusing on older workers or including them in their analysis. Note that the review in the following part of this chapter is to provide an overview of the empirical studies and does not cover theoretical literature which informs of major issues, assumptions, and hypotheses in the research field of the effect of the minimum wage. The theoretical literature will be discussed in Chapter Five where an alternative framework for understanding the effect of the minimum wage is proposed alongside the research methods for this thesis. This discussion will examine particularly the extent to which dominant theoretical accounts deal with the issue of the minimum wage in terms of the 'disruption' made by its introduction or uprating and presume actors' rationality in the labour market.

Minimum Wages and Older Workers

Overview

The effect of the minimum wage has been intensively studied, particularly since the renaissance of the minimum wage in the 1990s. The economy that the research covered has also expanded from developed countries, including the United States and the United Kingdom, to developing countries, especially Latin America, from that period.

However, the research about the effect of the minimum wage, which has been carried out dominantly by economists, was mainly concerned with the aggregate effects for the whole working-age population (aged 15-64) in a state, industry, or firm level, and a significant number of them concentrated on youths and young workers under the age of 25. Fang and Gunderson's (2009) work about the effects of minimum wages on employment of older workers was the only study that focused on the impact on older workers as they stated. It was recently followed by Lanot and Sousounis (2017) which explored the degree of substitutability between labour inputs caused by the minimum wage, paying special attention to older workers. Apart from these two that have exclusive attention to older workers, a few studies linked the effects of the minimum wage with older workers by including results for older workers as a part of their analyses or through using advanced ages as a factor which may affect employment, wage, income, and poverty. In this part, Fang and Gunderson's (2009) and Lanot and Sousounis' (2017) works are first reviewed, and then the studies which linked the effects with older workers will be surveyed (Table 4.3). This review aims to get an overview of the scope and main findings of studies which have been done about the effect of the minimum wage relating to older workers.

Table 4.3 Studies of Minimum Wage Effects and Older Workers

Study	Minimum wage variation	Group	Data	Results in relation to older workers
<i>Studies Focusing on the Effects on Older Workers</i>				
Fang and Gunderson 2009	Provincial variation during 1993-1999	Older workers 50 years or older	SLID, 1993-1999 (Canada)	Statistically significant and positive effect on employment of older workers
Lanot and Sousounis 2017	National minimum wage rates during 1999-2010	Various ages in low paying sectors	Quarterly LFS and ASHE, 1997-2010 (U.K.)	Statistically significant effect on changes to relative wages and relative wage bills but not to relative employment in the workforce age composition; No substitution between young workers aged 16-21 and older workers aged 55 and over
<i>Studies Linking the Effects with Older Workers</i>				
<i>Employment</i>				
Gramlich 1976	Federal minimum wage increases in 1961, 1967, and 1974	Teenagers and adult workers	U.S. Manpower Administration's National Longitudinal Survey (quarterly), 1948-1975 (U.S.)	Rise in part-time employment for male workers aged 65 and over
Alpert and Guerard 1988	Federal minimum wage rates during 1965-1979	Nonwhites, teenagers, nonwhite teenagers and older workers aged 55 plus	Current Population Survey (monthly) 1965-1979 & 1980-1981 (U.S.)	Neither increase in unemployment nor decrease in employment for workers over age 55
Van Soest 1989	Simulated decline in statutory minimum wage	Various ages	Socio Economic Panel (1 st wave) 1984 (Netherlands)	Decrease in unemployment for both males and females aged 55-64 by 37% and 21%, respectively if minimum wage rate reduced by 10%
Dodson 2002	Kaitz minimum wage index (ratio of the federal minimum wages to the average hourly earnings for each industry at the county level)	Prime working age population (15-64)	Regional Economic Information System; West Virginia Bureau of Employment Programs, 1988-1995 (U.S.)	No significant correlation between the number of persons aged 65 plus and county-level employment
Phimister and Theodossion 2009	Introduction of national minimum wage in 1999	Men and women in various ages	BHPS 1992-1998, 1999-2005 (U.K.)	Significant increases in the high pay exit probability for men aged 45-56 while significant increase in unemployment probability for women aged 45-56; reduction in expected duration of low pay spell for both

Study	Minimum wage variation	Group	Data	Results in relation to older workers
<u>Employment (Cont')</u>				
Comola and Mello 2011	Kaitz index (ratio of minimum-to-mean wage for formal-sector workers)	Individuals aged 15-65 in formal and informal sectors	National Labour Force Survey (<i>Sakernas</i>), 1996-2004 (Indonesia)	Significant and positive correlation between the population aged 56-65 and unemployment
<u>Wage Mobility</u>				
Smith and Vavrichek 1992	Federal minimum wage in 1981	Minimum wage workers 16 years or older	1984 & 1985 panels of Survey of Income and Program Participation, 1983-1987 (U.S.)	Older minimum wage workers aged 55 or older, less likely to experience a wage gain and more likely to experience smaller pay increase than young and middle-aged workers
Shannon 1996	Provincial minimum wages	Individuals aged 16-64 who held at least one paid job in 1986	Canadian Labour Market Activity Survey, 1986 (Canada)	Rise in wages with age up to age 55-64
Long 1999	Federal minimum wage in 1991 (or state minimum wages during 1991-1995, if higher)	Minimum wage workers 15 years or older	1992 & 1993 panels of Survey of Income and Program Participation, 1991-1995 (U.S.)	Older workers, least likely to experience real wage gains and move up the real earnings ladder
<u>Income Inequality</u>				
Volscho 2005	State minimum wages in 1959, 1969, 1979, 1989, and 1999	Family income	State and Metropolitan Area Data Books, 1979 1986, 1991, 1998	No significant effects of the percentage of the population aged 65 plus on family income inequality
Wu, Perloff and Golan 2006	Federal and state minimum wages during 1981-1997	Entire income distribution	March Current Population Survey, 1981-1997 (U.S.)	No significant effects of the percentage of the population aged 59 plus on income inequality in both urban and rural area
<u>Poverty</u>				
Sabia and Burkhauser 2010	State and federal minimum wage increases during 2003-2007; newly proposed federal minimum wage rate for next increase	Individuals aged 16-64 in household with income-to-needs ratio below 1.5	March Current Population Survey, 2004-2008 (U.S.)	No significant effect of the share of older individuals aged 55-64 on poverty
Campolieti, Gunderson and Lee 2012	Provincial minimum wage increases during 1997-2007	Individuals aged 16-64 in household with income-to-needs ratio below 1.5	Survey of Labour and Income Dynamics, 1997-2007 March LFS 2008 (Canada)	No significant effect of the percentage aged 54-64 on poverty

Studies Focusing on the Effects on Older Workers

The two studies which focused on the impacts on older workers of the minimum wage, Fang and Gunderson's (2009) and Lanot and Sousounis' (2017) were mainly concerned with their employment, even though the latter also includes the results of wages. Fang and Gunderson (2009) carried out a study of the employment effects for workers aged 50 and over of minimum wage increases in different provincial jurisdictions. Using the longitudinal data of the Survey of Labour and Income Dynamics in Canada for the period of 1993-1999, they compared employment transition probabilities of workers affected by minimum wage increases with a range of comparison groups in which individuals were in a jurisdiction that did not have a minimum wage increase but their wage had one of a series of increments above or shortfalls below the minimum wage in their jurisdiction. The results showed that the minimum wage increases had statistically significant and positive effects on the employment of older workers and the effects were robust across various comparison groups and measures of the minimum wage increases. This finding was theoretically unexpected and against the adverse effects which were widely found in the early research performed before the 1990s⁷. Most of all, it was opposed to the negative impacts which were estimated for youths in Canada based on the same period, specifications, and dataset in Campolieti, Fang, and Gunderson's (2005). Fang and Gunderson (2009) considered as likely reasons for the unusual finding employers' efficient practices in other cost factors, employees' efficiency wage response where the higher wages induced higher productivity, employers' monopsonistic behaviour, publication bias, and the substitution effect, which, except for publication bias, will be discussed in the theoretical literature review part of Chapter Five. They argued that the substitution effect was the most credible because increases in the employment of older workers could occur if employers substituted away from the least productive workers towards the more productive when both were subject to a minimum wage increase, in which case, the least productive were arguably teenagers with few skills and little experience, and those more productive were arguably older workers with considerable experience (Fang and Gunderson, 2009, p.385).

The substitutability between younger and older workers in low paying jobs, however, was not supported by succeeding work which paid special attention to the effects on

older workers of the minimum wage. Lanot and Sousounis (2017) studied the effect of the National Minimum Wage on the workforce age composition within the low paying sectors of the British economy, using two pseudo panels which were constructed from each of the UK Quarterly Labour Force Survey (LFS) and the Annual Survey of Hours and Earnings (ASHE) over the period of 1997-2010. They estimated the effects of the fraction of those affected by the minimum wage in each age band (16-17 year olds, 18-20 year olds, 21 year olds, and 22-54 year olds) on the changes to wages, wage bills, and employment of each age group relative to older workers aged 55 and over and then measured the elasticity of substitution between the four younger age groups and older workers. The results showed that the introduction and the regular upratings of the UK National Minimum Wage had a significant effect on the changes to the relative wages and to the relative wage bills but not to relative employment and also that the elasticity of substitution was close to zero between young workers aged 18-20 and older workers aged 55 and over and around 0.79 between those aged 22-54 and older workers. Lanot and Sousounis (2017) concluded that the results implied significant complementarity between younger and old employees. Unlike Fang and Gunderson's (2009), Lanot and Sousounis' (2017) research does not provide a direct evidence of the employment effect for older workers. However, their findings inform that the employment of older workers is likely to be affected by the minimum wage independent of the employment effects for other age groups.

In sum, the two empirical studies which focused on or paid special attention to the impact of the minimum wage on older workers were mainly interested in the issue of employment, and their findings were theoretically unexpected in as much as the positive employment effect was not predicted by the dominant economic theory of the minimum wage, on the one hand, and as the substitution effect which was a possible account supported by the mainstream theory for the positive employment effect for older workers was betrayed, on the other hand. This existing evidence may address the needs of accumulating more empirical evidence, enlarging the subject matter other than employment, and seeking an alternative explanation based on the review of established theoretical accounts.

Studies Linking the Effects with Older Workers

As mentioned earlier, there are a few studies which linked the effects of minimum wages with older workers. Some of them incorporated the results for older workers as a part of their analysis, and others included older people in their analysis for controlling the demographic effect or testing age effects. Compared to the studies which focused on the impact on older workers, the findings from the ones which linked the effects with older workers cover relatively a variety of subject matter, including employment, wage, income, and poverty.

Employment

Gramlich (1976) addressed the issue of whether prevailing estimates of disemployment were high enough to make low-wage workers worse off from increases in the minimum wage and examined the impact of minimum wages on the wage structure, employment demands, and family income distribution, using the US Manpower Administration's National Longitudinal Survey for the period of 1948-1975. He mainly found that as a minimum wage increased beyond the range of 40 to 50 per cent of the median wage, more workers were likely to lose their jobs or have to take part-time jobs, and higher income families were more likely to benefit from the increase. Particularly for older workers, he indicated that increases in the minimum wage resulted in a rise in part-time employment for male workers aged 65 and over. Meanwhile, Alpert and Guerard (1988) investigated the relationship between employment, unemployment, and the minimum wage, using the US Current Population Survey for the period of 1965-1981, and found that an increase in the minimum wage neither increased unemployment nor reduced employment for workers aged 55 and over in the same way as for other workers, except male teenagers aged 16-19 years and non-white males over the age of 20. Phimister and Theodossiou (2009) included the results for workers aged 45-56. They examined gender differences in the duration of low pay employment spells prior to and after the introduction of the UK National Minimum Wage in 1999. Their findings showed that the effects of many covariates on the expected duration, including age and education, were often less for women than men, and the differences generally declined after the introduction of the minimum wage. Especially for those aged 45-56, it was reported that

among male workers, the high pay exit probability significantly increased, unemployment probability was flat, and the expected duration of low pay employment spell was much reduced after the introduction of minimum wage, whereas among female counterparts, the high pay exit probability decreased, unemployment probability increased, and the expected duration was reduced.

Other studies on the employment effects of minimum wages used the older population aged 50 or older as a control indicator of demographic effects or an explanatory variable for age effects. That is, advanced age was assumed to be a socioeconomic factor that affected labour market outcomes rather than a target age group to be explored. Van Soest (1989) analysed the impact of minimum wage regulations in the Dutch labour market, following the two-equations model introduced by Meyer and Wise⁸ which was composed of a wage equation and an equation to explain labour market participation. In the model, the wage equation assumed that, in absence of minimum wage regulations, the hourly before-tax rate equaled the worker's marginal net productivity, which depended on personal characteristics (p.280), and individuals' age and elderly status (age of 65 and older) were used as explanatory variables for the wage and employment equations. The model was estimated with data from the first wave of the Socio Economic Panel collected by the Dutch Central Bureau of Statistics (CBS) in 1984. The estimation results from the two-equations model showed that, for older people, productivity decreased with age, which thus had negative impact on their wage rates, and also participation probability fell with age although there was a big gap in absolute values between men and women. Then, the estimation results were used for simulating the case that all minimum wage rates were reduced by 10 per cent. Van Soest (1989) found that a 10 per cent reduction of before-tax minimum wage rates would lead to a 28 per cent decrease of involuntary unemployment which was explained by the gap between productivity and the minimum wage rate. Particularly for older workers, the reduction of minimum wage rates by 10 per cent would decrease by 37 per cent and 20.8 per cent of involuntary unemployment for males and females aged 55-64, respectively and 5.5 per cent and 13.6 per cent for each counterpart aged 65 and older.

Dodson (2002) also used the older population aged 65 and older as an independent variable in his study on the employment effect of minimum wages in West Virginia. He reported that the number of persons aged 65 and older was not significantly correlated with county-level employment. However, the estimation results for older workers were not specified because the main concern of the study was the effects on the ratio of total county employment to the county population aged 15-64. In Comola and Mello's (2011) research, the share of the population aged 56-65 was used as one of the controls. They studied how decentralized minimum wage setting would affect unemployment, formal-sector employment, and the incidence of informality in Indonesian urban areas, and mainly found that an increase in the Kaitz index, the ratio of the minimum wage to the average wage of the working population, destroyed jobs in the formal sector, but those job losses were more than compensated for by the expansion of the informal sector. Their findings included the results that, for the entire working-age (15-65 years) population, the Kaitz index was negatively signed and statistically significant in the unemployment equation while the share of the population aged 56-65 years is positively significant in the equation, and further that the positive demographic effect on unemployment was much greater in magnitude per unit change than the negative effect of changes in the Kaitz index.

Wage Mobility

Smith and Vavrichek (1992) examined the earnings mobility of workers employed at the minimum wage in the United States, using longitudinal data from the 1984 and 1985 panels of the Survey of Income and Program Participation for the period of 1983-1987. They found that 63 per cent of workers who were earning the minimum wage in the mid-1980s were earning higher wages one year later, with a typical increase amounting to almost 20 per cent, but a significant number of workers who mostly did not have a high school diploma or worked on a part-time basis did not advance beyond the minimum wage during the observed period of time. More specifically relating to older workers, results indicated that minimum wage workers aged 55 or older were less likely to experience a wage gain during the mid-1980s and their pay increases were smaller than young and middle-aged workers. Their findings are consistent with Long (1999). Using data from the 1992 and 1993 panels of the Survey of Income and Program

Participation for the period of 1991-1995, Long (1999) also analysed earnings mobility among persons employed in minimum wage jobs in the United States and confirmed many of the findings reported by Smith and Vavrichek (1992). Results showed that older workers aged 55 and over were the least likely to experience a real wage increase whereas about 64 per cent of minimum wage workers were paid a higher wage in real terms one year later, with the 30 per cent average increase in pay. In neither of the two studies was there further discussion on why the wage growth among older minimum wage workers was exclusively lower than the one of young and middle-aged workers employed in minimum wage jobs. Instead, they commonly regarded elderly status as one of the traits that affected the size of real wage gains within one or two year after a minimum wage increase. Shannon (1996) also used age dummy, including age group 55-64, as a regressor in his study on the effects of provincial minimum wages on the size and composition of the gender wage gap in Canada. He found from the analysis of the Canadian Labour Market Activity Survey for 1986 that minimum wages reduced the wage gap substantially for young workers aged 16-24 and less so for adults aged 25-64, which was most attributable to the adverse employment effects of minimum wages, and wages rose with age up to the age band 55-64.

Income Inequality

A minority of studies about the effects of minimum wages on income inequality included the proportion of older population as an explanatory variable or a control of demographic characteristics, but none specified the effects of minimum wages for older persons. Volscho (2005) studied the effects of state minimum wages on family income inequality in the United States and used the percentage of older persons aged 65 and over as a control variable. Using decennial state data covering 1960-2000, he tested the hypothesis that states with higher minimum wages had lower levels of family income inequality. Results showed that, although the relation between the minimum wage and income inequality was non-linear, the state minimum wage over a certain level reduced family income inequality, and there was no significant effect of older population. With regard to the effect of older population, Wu, Perloff, and Golan (2006) found the same result. Using Current Population Survey data for the period of 1981-1997, they examined the effect of income tax rates, the minimum wage, and all the major

government welfare and transfer programmes on the evolution of income inequality for urban and rural areas by state in the United States. In the study, they used the percentage of population aged 59 or older as an independent variable and found that the age variable did not have statistically significant effects on income inequality in both urban and rural areas while increases in minimum wages raised both pre-tax and post-tax income inequality only in urban area.

Poverty

As with the studies about the effects on income inequality, a small number of studies which explored the effects of minimum wages on poverty reduction used the share of older individuals as one of time-varying socioeconomic controls, and none specified the effects of minimum wages for older people. Using data from the March Current Population Survey, Sabia and Burkhauser (2010) mainly found that state and federal minimum wage increases between 2003 and 2007 had no effect on state poverty rates in the United States, and a proposed increase in federal minimum wage from \$7.25 to \$9.50 would be more poorly targeted to the working poor than was the last federal increase from \$5.15 to \$7.25 when simulating the case. In this study, it was indicated that the percentage of older individuals aged 54-64 had statistically insignificant effects on poverty rates both of all individuals and of working individuals. Meanwhile, Campolieti, Gunderson, and Lee (2012) estimated the effect on poverty for Canada using data from the Survey of Labour and Income Dynamics for the period of 1997-2007. Their main findings showed that minimum wages did not have a statistically significant effect on poverty, and only 30 per cent of the net earnings gain from minimum wage increases would go to the poor while about 70 per cent spill over into the non-poor. However, this study was consistent with Sabia and Burkhauser (2010) in terms of statistically non-significant effect of the share of older individuals aged 54-64.

Conclusion

This chapter reviewed two research fields, research about the status of older workers in the labour market and research about the effect of the minimum wage, with special attention to older workers, in as much as they dealt with one of the two axes in subject

matter for this thesis. The review suggests that the two research fields have developed apart from each other with no apparent common interest. Research about the labour market status of older workers has focused exclusively on employment issues, including hiring, dismissal, redundancy, retirement, and discrimination. This informs of older workers' vulnerability in the labour market and, at the same time, addresses the need for research about the issues of wages, earnings, and policies relating to income from work among older workers, with a focus on their vulnerability. Research about the effect of the minimum wage may answer the need in as much as the minimum wage is a public policy that intervenes in wages and earnings for vulnerable workers in the labour market. But, despite an enormous amount of work in research about the effect of the minimum wage, older workers have long been ruled out in the research field. Very few empirical studies focused on or paid special attention to the impact of the minimum wage on older workers, having the main interest in the issue of employment. A minority of studies incorporated the results for older workers as a part of their analysis, and a few others included older people in their studies only for controlling the demographic effect and testing age effects. The findings from the very few studies showed that the effects of the minimum wage for older workers were theoretically unexpected and hard to understand within the mainstream theory of the minimum wage.

As noted earlier, the existing empirical evidence on the effect of the minimum wage on older workers addresses the need to gain more empirical evidence, enlarge the subject matter other than the issue of employment, and seek an alternative explanation based on the review of established theoretical accounts. Aiming at responding to this need through the later parts of this thesis, the following chapter will discuss a variety of theoretical perspectives of the minimum wage and then develop a research design for this thesis.

Notes

¹ The industrialism theory argues that the effect of public pension policy is limited, stressing the effects of economic growth. However, determinants to explain the labour force participation of older population may change over time. According to Pampel and Weiss (1983), economic growth is the best predictor of the labour force participation during the early time periods whereas for later time periods pension programmes may have larger effects on the participation than economic development variables.

² The results of their examination pointed to the structural conditions of work organisation and economic actors as the main driving forces of early retirement.

³ The basic idea of Figure 4.1 was derived from Szinovacz's (2003, p.23) 'retirement decision process.'

⁴ Austria, Denmark, France, Germany, Greece, Italy, the Netherlands, Spain, Sweden, and Switzerland were included in the analysis.

⁵ See Burtless, G. (1986). Social security, unanticipated benefit increases, and the timing of retirement. *The Review of Economic Studies*, 53(5), 781-805; Krueger, A. B. and Pischke, J. (1992). The effect of social security on labour supply: A cohort analysis of the Notch generation. *Journal of Labour Economics*, 10, 412-437; Borsch-Supan, A. and Schnabel, R. (1998). Social security and declining labor-force participation in Germany. *American Economic Review*, 88(2), 173-178; Coile, C. C. and Gruber, J. (2007). Future social security and entitlements and the retirement decision. *Review of Economic Studies*, 89(2), 234-246; Liebman, J. B., Luttmer, E. F. P., and Seif, D. G. (2009). Labour supply responses to marginal Social Security benefits: Evidence from discontinuities. *Journal of Public Economics*, 93, 1208-1223; and Manoli, D. and Weber, A. (2010). International substitution in labor force participation: Evidence from policy discontinuities. IZA Discussion Paper No. 5248. All were quoted in Staubli and Zweimüller (2013, p.18).

⁶ According to Queisser and Whitehouse (2006), 'actuarial' has been increasingly used in the analysis of pension systems and retirement incentives. They discuss two actuarial concepts, 'actuarial fairness' and 'actuarial neutrality,' and define them as in the following:

'Actuarial fairness, which requires that the present value of lifetime contributions equals the present value of lifetime benefits. Actuarial fairness relates to the entire lifetime of contributions and benefits.';

'Actuarial neutrality, which requires that the present value of accrued pension benefits for working an additional year is the same as the year before (meaning that benefits increase only by the additional entitlement earned in that year). Conversely, retiring a year earlier should reduce the pension benefit both by the entitlement that would have been earned during the year and by an amount to reflect the longer duration for which the pension must be paid. Actuarial neutrality is a *marginal* concept, relating to the effect of working an additional year.'

(Queisser and Whitehouse, 2006, p.4)

'Actuarial neutral' in this thesis is loosely used for meaning no implicit tax on working beyond the pension eligibility age.

⁷ The first-generation studies are well described in Card and Krueger's (1995), and the new generation ones published since the 1990s are comprehensively reviewed in Newmark and Wascher's (2008).

⁸ Meyer, R. and Wise, D. (1983). The effects of the minimum wage on the employment and earnings of youth. *Journal of Labor Economics*, I, pp. 66-100.

Chapter Five

Theoretical Framework and Research Methods

Introduction

Studies about the effect of the minimum wage rely primarily on mainstream economics. The neoclassical paradigm has long dominated ideas about the effects, and orthodox neoclassical models portray that the minimum wage entails adverse employment effects and is an ineffective social policy tool for helping poor families (Neumark and Wascher, 2008, p.249). However, as the disemployment effect has not been supported by many of empirical studies, monopsony models which modify the key assumptions embedded in the neoclassical model have expanded the explanatory power of the economic theory, opening the door for positive or neutral employment effects. Meanwhile, the Keynesian paradigm, which supports government interventions in response to market failure in contrast with the neoclassical perspective, has emerged in recent years as an alternative economic approach for research on the effects of minimum wages. This perspective argues that the minimum wage would stabilise the macroeconomic conditions, preventing deflationary development, especially in period of economic crisis and under weak union power, and helping to create a more equal income distribution with changes in the structure of wages and the distribution within the working class (Herr, Kazandziska and Mahnkopf-Praprotnik, 2009). However, both the neoclassical view and the Keynesian approach rules out the political nature of the minimum wage from its explanation by excluding political means from government interventions. Relatively rare as they are, other alternative explanations can be sought in political economy perspective. A problem of the political economy approach to the minimum wage is that they are concerned with what other factors than economic ones make people support or oppose the minimum wage rather than how the minimum wage affects workers.

The first part of this chapter discusses those existing theories of the minimum wage and seeks an alternative theoretical framework for an enhanced understanding of the effects of the minimum wage which contains both political and economic attributes as a public

policy. As mentioned in Chapter Four, the discussion of the existing theories aims at being advised of the extent to which they deal with the issue of the minimum wage in terms of the ‘disruption’ made by its introduction or uprating and assume its stakeholders’ rationality in the labour market, and thus at providing leads for seeking an alternative framework founded on practical limitations of the existing theories. Then, the second part develops a research design outlining research methods, data, and analyses procedures, which are employed in later chapters of this thesis. In this part, the necessity to employ a contextual analysis with qualitative data is argued, in that the alternative theoretical framework sought in the first part of this chapter allows for the influence of political attributes of minimum wage policy on top of its economic ones.

Economic Effects of Minimum Wages in the Neoclassical Paradigm¹

Distribution Effects

Compared to the elaboration for the employment effect which will be presented in the following section, the theoretical account of the effect of the minimum wage on the wage distribution has been relatively less advanced. However, economic theory grounded in the neoclassical paradigm predicts that minimum wages bring about mainly two effects in the wage distribution, a spike and spillovers. If it is adequately enforced and complied with, the minimum wage will cut off or thin out the lower part of the wage distribution (Neumark and Wascher, 2008, p.107). This causes wages initially below the minimum wage either to disappear or to push them up to the new minimum wage, creating a spike at the minimum (Dittrich, Knabe, and Leipold, 2014, p.792). Also, an increase in the minimum wage can lead to changes in the wage interval above the minimum wage for several reasons. The simplest neoclassical models which assumes two types of labour, skilled labour and unskilled labour, or only one type of skill with different degrees of it among workers, does not suggest a spike in the wage distribution but predicts a wage boost for workers already paid above the minimum wage through the substitution of skilled workers or those with more skill for unskilled workers or those with less skill. However, in response to the spike of the wage distribution observed at the minimum wage and the spillover found more noticeably in

wages only a little higher than the minimum, the model developed by Pettengill² explains the spike either as a result of the fall in employment of workers directly affected by the minimum wage until the marginal revenue product of workers in that group increases to the point that it is equal to their wage or as a result of their upward adjustment of effort for productivity improvement (Neumark and Wascher, 2008, pp.109-110). This model assumes jobs with different sensitivity of worker productivity to skill as well as a continuous distribution of worker skills and a labour market equilibrium characterised by an upward-sloping wage curve that relates wages to skill, and regards the sensitivity of productivity to skill as the reason for the spillover through ‘a greater degree of substitutability between workers whose skill levels are relatively close than between workers whose skill levels are quite different’ (Neumark and Wascher, 2008, p.109). A highly skilled worker in a job for which productivity is less sensitive to skill would be only marginally more productive, but paid a lot more, than a low skilled worker and thus tends to be hired in a job for which productivity is more sensitive to skill. Accordingly, the minimum wage leads to the substitution of slightly higher low skilled workers for the lowest skilled workers rather than of those with quite different levels of skill, and raises the wages of the former by more than the ones of the latter (Neumark and Wascher, 2008, p.109).

Monopsony models which assume the existence of frictions in the labour market which allows employers to have potential market power over their workers (Manning, 2003, p.4) also predict similar effects on the distribution of wages. In the original Burdett-Mortensen model in which each employer posts a wage and employees randomly search employers for a job paid at a higher wage (Burdett and Mortensen, 1998, p.258), spikes are not expected because employers offer a wage slightly higher than the one paid by a mass of firms (Manning, 2003, p.327; Neumark and Wascher, 2008, p.111). But, Manning understands it as a result of ‘a discontinuity in the labour supply function facing each firm at every wage that is paid by a mass of firms’ and suggests that taking non-pecuniary firm features into account, such as ‘heterogeneity in the evaluation of non-wage characteristics of jobs or mobility costs,’ allows to generate a spike in the distribution of wages by eliminating the discontinuity in the labour supply function (Manning, 2003, p.327; Neumark and Wascher, 2008, p.111). This equilibrium search

model predicts spillovers concentrated among jobs paying just above the minimum wage as well (Neumark and Wascher, 2008, p.110) because reduction in the wage gap between higher-wage firms and lower-wage firms caused by an increase in the minimum wage leads to increases in the elasticity of the labour supply curve to an employer and consequently, induces employers to pay higher wages, but this effect declines as one moves up in the wage distribution (Manning, 2003, pp.328-329). A structural search model, in which Flinn (2002; 2006, p.1021; 2010) assumes wage bargaining as well as search frictions in the labour market, illustrates that the imposition of a binding minimum wage constrains matches between employers and workers who are worth being paid less than the minimum wage, and the constraint produces an equilibrium wage distribution with a mass point at the minimum wage and continuously distributed wages above the minimum under the condition that match values are themselves distributed in succession. Meanwhile, an efficiency wage model developed by Grossman (1983, p.361) assumes two types of labour, skilled labour which reduces its effort following a relative wage deterioration and unskilled labour whose effort does not vary with changes in relative wages, and explains that the spillover effects of the minimum wage are generated through two channels, the equity effect and the substitution effect. This is, employers directly raise other wages above the minimum wage as it increases in order to maintain the effort of skilled labour and the optimal level of productivity, on the one hand, and they lay off minimum wage workers and hire more skilled ones, on the other hand (Grossman, 1983, p.366).

Alongside the effects on the distribution of wages, the effects on the distribution of incomes and on poverty are another chief distributional concern of minimum wage policy. As shown in Chapter Four, the focus of the research about the effects on the distribution of incomes and on poverty shifts from individuals' welfare to families' economic well-being, but this subject matter has also been theoretically less developed. The main reason would be that the implication of the effects of the minimum wage on welfare is concerned not only with distributional effects but also with other issues of minimum wage policy, including employment effects and the relationship between low-wage workers and low-income families and between low wages and poverty. Employment effects have been particularly paid great attention because of their

expected adverse impacts that would impede the distributional goal of minimum wage policy. The simple neoclassical model which does not assume market imperfection explains that minimum wages create distortion that particularly results from negative employment effects and reduces welfare, and it suggests that the desired distributional goals would be better achieved by tax-and-transfer system to avoid the distortion (Gramlich, 1976, p.410; Neumark, Schweitzer, and Wascher, 2005, pp. 867-868; Neumark and Wascher, 2008, p.142). Models that modify the assumptions of the neoclassical model imply ambiguous welfare effects based on employment effects. Flinn (2002; 2006; 2010) uses the value of unemployed search as the welfare criterion in his structural search model. He argues that positive changes in the distribution of wages in response to increases in the minimum wage can be misunderstood in disregard of employment effects, and that neither an absence of employment effects nor disemployment effects necessarily mean improvement or deterioration in welfare respectively because changes in the distribution of wages can affect the value of the unemployed search. Rebitzer and Taylor (1995, pp.253-254) also contend in their wage efficiency model that a minimum wage can lead to economic well-being by increasing employment in the long run as well as in the short run but can have ‘a seemingly perverse positive employment effect’ when the efficiency wage a firm must pay increases with employment for the reason that increasing a firm’s employment raises the risk of unemployment for other workers under uncertainty as to product demand. In this regard, they suggest that the implication of the minimum wage effects on welfare would be better detected by empirical works rather than theoretical appeals with regard to employment effects.

Meanwhile, a theoretical attempt which shifts its focus from employment effects to the effects on the distribution of incomes or on poverty for measuring the effect of the minimum wage on welfare is rare. Fields & Kanbur (2007) only provided a theoretical framework based on income-sharing and demonstrated how four factors - the degree of poverty aversion, the ratio of the minimum wage to the poverty line, the elasticity of labour demand, and the extent of income-sharing – result in a rise, a fall, and no change in poverty level. In the succeeding paper, they showed that wage differentiation, employment in high-wage and low-wage jobs, and the elasticity of labour demand with

respect to the minimum wage determine the direction of the poverty change (Kapelyuk, 2014, p.8).

Employment Effects

As implied earlier, the effects of the minimum wage on employment have been the most prominent issue in its policy evaluation, and hence much of the theoretical debate about the minimum wage centres on this issue. The logic of the neoclassical standard model of the minimum wage is quite simple with respect to the employment effects. It assumes that labour and product markets are competitive, the labour covered by the minimum wage is homogeneous, products are turned out with a combination of capital and labour of which both are perfectly informed about the labour market, and all workers are covered by the minimum wage (Neumark and Wascher, 2008). In such a perfectly competitive labour market, the wage is set by the meeting point of the supply of and the demand for labour, and the magnitude of employment is determined by the equilibrium wage. If a minimum wage is fixed at above the equilibrium wage, a firm's marginal cost of production is raised, which gives rise to an increase in the price of products, a fall in the demand for products, and finally a decrease in production. As a result, employers adjust their businesses by reducing employment, in particular of low-wage workers, who will be relatively overpaid compared to their contribution to the firms' revenue under a minimum wage higher than the equilibrium wage (Card and Krueger, 1995) and by substituting capital for labour in the production process (Neumark and Wascher, 2008). In this simplified account, the market equilibrium wage is impersonally applied to all firms, which means that firms do not choose wages paid to their employees, workers are treated in the same manner as other inputs that employers buy, such as machinery or electricity, are, and all employers purchase labour as much as they want at the same market price (Card and Krueger, 1995).

The assumptions that this standard model postulated, however, ruled out many other aspects of the operation of the labour market and the effect of the minimum wage, and extended models to remedy shortcomings of the standard model have been developed. The first question that an extended model addresses is whether all workers are covered

by the minimum wage. In less developed countries, the coverage of minimum wages is often limited, and noncompliance is high. The two-sector models explain that the sector not covered offers alternative opportunities to workers who cannot find the jobs in the sector covered and thus the aggregate employment losses associated with an increase of the minimum wage can be alleviated even though employment in the sector covered decreases (Card and Krueger, 1995; Neumark and Wascher, 2008). Welch (1976) argues that, with partial minimum wage coverage, jobs in the sector covered are restricted and labour supply in the sector not covered increases as wages in the sector covered are bound to above-equilibrium levels. The shift in labour supply could lead to a rise in employment and a fall in wages in the sector not covered. Welch's model assumes that workers not chosen by employers in the sector covered work in the sector not covered if the wage is higher than their reservation wage. Meanwhile, Gramlich (1976) and Mincer (1976) presume that workers choose their sector based on the expected earnings in each sector which refer to 'wage times probability of having a job' (Brown, 1988, p.136). When the expected earnings in the sector covered are higher than wages in the sector not covered, workers who do not get a job in the former flow into unemployment whilst they work in the sectors not covered when wages in that sector are higher than the expected earnings in the sector covered. Thus, in the case that displaced workers remain unemployed until they can get a job in the sector covered, wage rise caused by an increase in the minimum wage would not have a significant impact on employment and wages.

The second question is whether the workers covered by the minimum wage are homogeneous. An extended model assumes two skill groups, skilled workers and lower skilled workers. If a minimum wage increases, skilled workers are substituted for lower skilled workers as the employers' demand for skilled ones rises; and as a result, although the overall employment still declines due to the substitution effects of non-labour inputs for lower skilled workers, the scale of the total drop in employment will be smaller than the fall in lower skilled workers (Neumark and Wascher, 2008). However, responding to the fact that the observed distribution of wages is apt to be relatively continuous rather than discrete, another alternative model assumes that the distribution of wages reflects the distribution of skills which is formed by different

amounts of human capital among different workers (Brown, Gilroy, and Kohen, 1982). In this model, human capital is held together by education, experience, motivation, and ability, the labour market pays for an 'efficiency unit' of human capital, and each individual is a substitute in production (Card and Krueger, 1995). Under these assumptions, the presence of the minimum wage indicates a rise in the market price of human capital and unemployed status of workers with value of marginal product below the minimum wage, which leads the entire distribution of wages, which has the left tail truncated at the minimum, to rightward movement (Card and Krueger, 1995). In sum, this model predicts that the larger the increase in the market price of human capital induced by the minimum wage is, the smaller the elasticity of demand for human capital in the labour market is, which brings about reduction in employment among low-wage workers, and the higher wages for other workers are (Card and Krueger, 1995).

The third issue is that the standard model assumes an economy with only one industry. Bearing the point in mind, Neumark and Wascher (2008, p.52) argue that extending the model to include more than one industry with consideration for plausible substitution by consumers between goods produced in different industries requires to allow for possible general equilibrium cross-industry effects. If two products produced in separate industries are substitutable for each other, and a minimum wage raises the cost for one product more than for the other, the demand for the product which is produced with a smaller share of minimum wage labour in costs will increase, leading to a growth in the demand for less skilled workers in the industry producing the substitute (Neumark and Wascher, 2008, p.52). Neumark and Wascher (2008) cited as an example the possibility that, with an increase in the minimum wage, the demand for minimum wage labour could shift from other types of restaurants to the fast food industry when the latter has the lower cost share of minimum wage labour than the former. They noted that the prediction of the standard neoclassical model was not made on an industry-by-industry basis, and thus a failure by researchers to find a negative employment effect in an industry should not be regarded as inconsistent with the theory (Neumark and Wascher, 2008, p.52).

The fourth problem is whether the minimum wage has the same effects on employment and average hours worked per employee. In response to two different findings from Card and Krueger's (1995) and Neumark and Wascher's (2000) studies on the effects of the New Jersey minimum wage, Michl (2000) proposed an extended model that distinguished the number of workers and their average working. Although labour input and employment are often used interchangeably, labour input is the product of employment and average hours worked per worker (Neumark and Wascher, 2008). In the extended model, employers could cut back on labour inputs in response to an increase in the minimum wage, either simply by dismissing workers or by reducing working hours per employee (Michl, 2000, p.265). Particularly for the latter case, an employer can hire more workers, in principle, with the margin associated with a reduction in average hours worked per employee, though the firm's total demand for work hours declines (Michl, 2000, p.265). Strobl and Walsh (2008; 2011) further expanded the model by allowing firms to choose combinations of the number of workers and hours worked per employee in their production. In this case, the effects of minimum wages on labour input are ambiguous and differ across firms and industries because the changes in the two components of labour input, employment and average hours worked per employee, are inversely related in response to the minimum wage increase, and firms' total work hours may even rise if there are small fixed costs for hiring workers.

The final question is whether short-run and long-run effects of minimum wages on employment are consistent. An extended model which distinguishes the two effects claims that short-run and long-run adjustments to a change in the minimum wage are quite similar because the high turnover among minimum wage workers makes hiring and firing costs insignificant (Neumark and Wascher, 2008, p.52). Providing the findings from their case study of fast-food restaurants, Card and Krueger (1995) contended that a negative employment effect would be expected within a few months after an increase in the minimum wage because employers hiring minimum wage workers can adjust their staffing levels flexibly with no large costs of hiring and firing due to the high turnover rates of workers, but the effect will decrease over time as the real value of the minimum wage diminishes. However, recognising the possible gap

between short-term and long-term effects, Hamermesh (1995) argues that ‘sizeable adjustment costs for capital or other inputs can result in lags in the adjustment of labour’ even if the costs of adjusting labour input are small (Neumark and Wascher, 2008, p.52). Along the lines of Hamermesh’s argument, Neumark and Wascher (2008, p.53) define the short-run effects as ‘the change in employment over a period during which the capital stock is fixed’ and maintain that the decline in less-skilled labour will be mitigated until firms can substitute capital for less-skilled labour in response to an increase in the minimum wage.

Despite the theoretical insights the standard model provides and the considerable modification throughout the extension of the standard model, the most obvious difficulty with the neoclassical models of the minimum wage is that of explaining the existence of neutral or even positive employment effects of minimum wages on affected workers. Allowing for Fang and Gunderson’s (2009) findings shown in Chapter Four, it is important to build an explanatory basis for neutral or positive employment effects, particularly for the research that focuses on the impact on older workers. Although the extended neoclassical models that add some supplementary conditions partially acknowledge the likelihood of non-negative employment effects, the fundamental inclination heads for adverse ones. A general feature of the neoclassical competitive model is the assumption that firms are ‘price-takers in the labour market’ and ‘there is no firm-specific component of wages’, but this assumption is an oversimplification (Card and Krueger, 1995, p.369). Another major difficulty with the neoclassical models is that their explanations are based on arithmetical calculations, which assumes that employers and workers have all the information needed for their rational decision-making. For example, provided that workers who do not get a job in the sectors covered remain unemployed when the wages times probability of having a job in that sector are higher than the ones in the sectors not covered, it is highly questionable whether all the workers always make the same choice in practice under a certain combination of conditions, on the one hand, and whether they are well informed of, at least, the probability of having a job even if a wage rate is applied to all firms in a certain sector, on the other hand. Moreover, the neoclassical models do not consider the interaction between the demand change for low-wage workers and workers’ behavioural responses,

which result from a rise in the minimum wage. For instance, low-wage workers can improve their productivity motivated by an increase in the minimum wage, and this would lead to no demand change for the workers. Also, if required on-the-job-skills are different between industries, low-wage workers might hesitate to shift from one industry to another in accordance with the demand change for them in each industry.

As the adverse employment effect predicted by the neoclassical models has not been firmly supported by empirical studies since Card and Krueger's (1994) seminal work was published, and theoretical and empirical debates on the effect of the minimum wage have been intensely revived, the monopsony model became prominent, paving the way for positive or neutral employment effects. This model discusses exceptional cases from the viewpoint of the neoclassical labour market model (Herr, Kazandziska, and Mahnkopf-Praprotnik, 2009, p.19). In the textbook monopsony model, individual firms face an upward-sloping labour supply curve which mirrors homogeneous labour and have some market power over wages to attract more workers. A single firm, a so-called 'monopsonist' sets a wage at the level that the marginal cost of labour and the marginal revenue product of labour are even (Robinson, 1933, recited from Card and Krueger, 1995 and Neumark and Wascher, 2008). The monopsonistic market equilibrium wage is, however, determined on the labour supply curve being lower than the marginal cost of labour curve, and thus the gap between the wage and the marginal revenue product of labour, what Pigou and Hicks referred to as 'exploitation' (Manning, 2003, p.49), occurs. Also, the level of employment that results from the equilibrium wage is lower than the one in the neoclassical competitive model because the marginal cost of labour mounts more sharply than the wage as the monopsonist has to pay the higher wage to all its workers (Ehrenberg and Stewart, 1997; Neumark and Wascher, 2008). Under these circumstances, all cases of employment effects can be embraced. A minimum wage fixed between the equilibrium wage and the point where the marginal cost of labour is equated to the marginal revenue product of labour leads to an increase in employment as the minimum wage reduces the marginal cost of labour. A minimum set at the point where the marginal cost of labour curve meets the marginal revenue product of labour curve has a neutral employment effect, and any further increase beyond the point brings about a reduction in employment.

The point that a monopsonist faces an upward-sloping labour supply curve assumes that the elasticity of labour supply is not perfectly infinite. This assumption is the most key feature that clearly discriminates the monopsony model from the neoclassical model and allows each monopsony model demonstrated in different ways. The traditional static monopsony model postulates a single buyer of labour as an example of the imperfect elasticity of labour supply. An early labour market example is the ‘company town,’ where a single employer dominates, such as coal mining communities in rural areas (Ashenfelter, Farber, and Ransom, 2010, p.204). Ulsan city in the southeast part of South Korea where Hyundai dominates with motor and shipbuilding industries could be a present example. Under the static framework, some empirical studies validated the assumption in several specialised labour markets, such as nurses (Sullivan, 1989; Staiger, Spetz and Phibbs, 2010) and school teachers (Landon and Baird, 1971; Falch, 2010). However, neither is the company town common in the present labour market nor is there any evidence of the limited elasticity of labour supply in low paid jobs. In this regard, the traditional static monopsony model is regarded as just an intellectual curiosity, not being relevant, particularly in the low-wage labour market. Critics of the model suppose that the elasticity of labour supply to a certain firm is nearly infinite unless the firm actually employs a considerable proportion of the total potential workers, which belief is derived from the sphere of industrial organisation, where a certain employer’s market power is reckoned to be correlated with the employer’s market share (Card and Krueger, 1995, p.373). But, in the low-wage labour market, the employers are normally considered as small firms which monopsonistic power is often insignificant.

Making it more plausible in an industry with a large proportion of small firms, the dynamic monopsony model, which was formulated by Burdett and Mortensen (1989)³ and advanced by Manning (2003), attributes the limited elasticity of labour supply to search-related frictions in the labour market. The dynamic model assumes that, due to the job search frictions, workers have imperfect information about the wages provided by employers, and firms have monopsony power on wages even against many competitors (Ashenfelter, Farber and Ransom, 2010). The basic idea of the dynamic model is that the firm sets a wage at which the number of new hires balances the

number of turnovers (Card and Krueger, 1995), and thus the firm's employment corresponds to an equilibrium between the flow of workers in and those out of the firm (Ashenfelter, Farber and Ransom, 2010). In this so-called general equilibrium model of oligopsony, a binding minimum wage increase can lead to employment gains, particularly at smaller, low-wage firms, by reducing turnovers and raising hires (Card and Krueger, 1995, pp.380-381). This is possible not only because the minimum wage increases the odds that some workers will be provided a wage offer higher than their reservation wage, but also because it leads firms already paying above the minimum to give their wage offer a raise as well (Neumark and Wascher, 2008, p.56). Card and Krueger's (1994) analysis of the effect of the New Jersey minimum wage on fast-food restaurants provides empirical evidence, finding that employment increased among restaurants initially paying the lowest wages and was stable among restaurants already paying more than the new minimum wage.

Apart from the static and dynamic monopsony models driven by the assumption that firms can attract and maintain more workers by paying a higher wage (Card and Krueger, 1995), Rebitzer and Taylor (1995) developed an efficiency wage model in which employers economise on monitoring costs by paying above-equilibrium wages (Boal and Ransom, 1997, p.95). This model assumes that workers have some discretion over the level of effort on the job, and firms can pay a higher wage to induce greater effort of employees and threaten to fire employees who shirk (Card and Krueger, 1995; Neumark and Wascher, 2008). Firms need to monitor employees' efforts, but an employer's monitoring ability is supposed to decrease as a firm's size is increased. If a firm increases employment, it must raise wages to discourage shirking in lieu of its weakened ability to monitor. This brings about an upward-sloping labour supply in the long run (Boal and Ransom, 1997), and leads the marginal cost of labour to be higher than the offered wage. Under these circumstances, imposing a binding minimum wage slightly above the equilibrium wage induces firms to put less resources for monitoring work effort and increase their level of employment instead (Neumark and Wascher, 2008, p.55). An implication of the efficiency wage model is that employers who are concerned about low-wage workers' shirking on the job will not offer subminimum wages because workers being paid a subminimum would choose the desire to shirk on

the job rather than the value of keeping the job (Card and Krueger, 1995, p.382; 2000, p.342) whereas those being paid over the subminimum would be concerned about losing their jobs.

Empirical studies show that monopsonistic behaviour is found across the considerable number of employers in a variety of countries and labour markets even though it is not universal. With reference to the effects of the minimum wage, monopsony models have critical implications by opening a door for theoretical underpinning of non-negative employment effects. In addition, equity issues are always considered in the background in the monopsony literature because the wage is regarded as an important factor of economic welfare, specifically for low-wage workers (Boal and Ransom, 1997, p.87). However, it may be asked whether the model can provide a universal explanation for the employment effect of the minimum wage, regardless of the level of analysis.

Monopsony models before the general equilibrium model of oligopsony fundamentally rely on firm-based modelling. It is obvious that a single result from a monopsonist cannot be generalised in the labour market. Even in general equilibrium models, a related problem remains. Noting that general equilibrium models distinguish between the elasticity of labour supply to the labour market as a whole and to individual firms in as much as the former determines an aggregate employment effect of the minimum wage while the latter determines the gap between the marginal product of labour and the wage, Manning (2003) argues that any measure of the impact on aggregate employment must take firms' heterogeneity into account because individual firms would otherwise choose different wages and thus will have different employment effects in the imposition of the minimum wage. But, most of the monopsony models, including the general equilibrium models, do not incorporate heterogeneity in workers' productivity which would be a key factor to give an account of a firm's heterogeneity, particularly in terms of the level of employment. If all workers are assumed not to be equally productive, monopsonistic firms with more productive employees than their competitors can be supposed, for example. Faced with the imposition of a binding minimum wage, those firms might not raise employment even if there is still a gap between the marginal product of labour and the minimum wage. The firms, facing a minimum wage slightly above the monopsonistic equilibrium wage, could even discharge some employees with

relatively less productivity in the hope that the rest of employees would improve their productivity motivated by the increase in the minimum wage. However, the monopsony models do not explain what the institutional forces are at play in practice or what the role of wages is in the production process (Edwards and Gilman, 1999). Although the latter is the focus of the efficiency wage model, higher wages as ‘a substitute for the costs of supervision’ are criticised as unlikely and implausible (Edwards and Gilman, 1999, p.23). This is, ‘employees will avoid their duties if they can, and employers thus face costs of supervision’ (Edwards and Gilman, 1998, p.9), regardless of the wage level.

Economic Effects of Minimum Wages in the Keynesian Paradigm

Distribution Effects

Critical of the absence of a macroeconomic approach in the theoretical debate which has been led mostly by the neoclassical view (Herr, Kazandziska and Mahnkopf-Praprotnik, 2009, p.5), the Keynesian model explains the effects of minimum wages in the context of the interaction between the labour market and the national economy. The Keynesian approach which was first advanced in the 1930s is set against a claim for market self-regulation and instead focuses on systemic market failure to be resolved by government intervention. The neoclassical approach recognizes the odds of market failure but defines the failure as a bad fit between production and the wants of individuals with purchasing power, which does not occur in an aggregate manner (Caporaso and Levine, 1992). By contrast, the Keynesian approach argues that the market mechanism systemically fails to assure adequate purchasing power and underutilise the existing productive capacity, and this aggregate demand failure results from the instability of the process of reproduction and growth in a capitalist economy (Caporaso and Levine, 1992, p.100). The source of the instability is the self-reinforcing or cumulative nature of the processes that the movements of output, investment, employment, and prices are involved in ‘a leakage from the economic circular flow’ which does not stimulate any comparable demand (Caporaso and Levine, 1992, p.103, p.118). The systemic failure of aggregate demand requires government intervention, but a key point here is that the

intervention should adopt ‘administrative ways rather than political means’ (Caporaso and Levine, 1992, p.101), and the government develops a stabilization policy that affects the economic circular flow, typically using government spending and taxes, to secure the macroeconomic conditions needed (Caporaso and Levine, 1992, pp.119-121).

According to the Keynesian explanation of the minimum wage effects which was explored by Herr, Kazandziska, and Mahnkopf-Praprotnik (2009) and Herr and Kazandziska (2011), minimum wages can perform two important roles in the Keynesian paradigm, preventing deflationary developments, especially in a period of economic crisis and weak union power, and changing the wage structure among wage earners. In a closed economy, changes in profit rates, prices of natural resources, and taxes may affect changes in the price level, but none of them can solely give rise to an inflationary or deflationary process (Herr, Kazandziska, and Mahnkopf-Praprotnik, 2009, p.7). By contrast, changes in the wage-price spiral can bring about those processes by itself, and in this regard, nominal wages can be regarded as the nominal anchor which is a precondition for the functioning of capitalist economies (Herr, Kazandziska, and Mahnkopf-Praprotnik, 2009, pp.7-8). That is, when nominal wages increase by the wage norm which refers to following the medium-term trend of productivity changes and the inflation target of the central bank, they become the nominal anchor for the price level and prevent deflation (Herr, 2002; Herr and Kazandziska, 2011). In the same vein, minimum wage increases attuned to the wage norm support or become a nominal wage anchor and avert a wage-price deflationary spiral by keeping down the erosion of nominal wages (Herr, Kazandziska, and Mahnkopf-Praprotnik, 2009, p.8; Herr and Kazandziska, 2011, pp.4-5). To achieve this goal, the Keynesian theory recommends that the minimum wage should be adjusted annually with a rate high enough to give benefits to the lowest wages and also affect a sufficient number of employees (Herr and Kazandziska, 2011, p.5; Ghani, 2016, p.2).

In the Keynesian approach, changes in nominal wages cannot fundamentally change the distribution of national income between wages and profits because wages affect the price level (Herr, 2009, p.952). However, minimum wages have distributional effects among wage earners (Herr, Kazandziska and Mahnkopf-Praprotnik, 2009, p.10). If all wages change by the wage norm, the wage structure will not change, in which there is

no improvement in real income among low-wage workers. But, if minimum wages increase faster than the average wage, the wage structure will be compressed from the bottom, which increases real income and purchasing power among the low paid and enhances the potential of minimum wage policy for combating poverty (Herr and Kazandziska, 2011, p.5). In another case where minimum wages increase attuned to the wage norm but the average wage level is raised higher than the wage norm, wage dispersion will deepen, and hence increasing minimum wages based on the average wage level is required (Herr and Kazandziska, 2011, p.5).

Employment Effects

Herr, Kazandziska, and Mahnkopf-Praprotnik (2009; 2011) argue that the minimum wage does not have any systematic employment effects, and they remain theoretically open in the Keynesian paradigm (Ghani, 2016, p.2). Changes in the wage level are assumed to lead to changes in prices but not to directly induce changes in employment in this approach (Herr, Kazandziska, and Mahnkopf-Praprotnik, 2009, p.9; Herr and Kazandziska, 2011, p.3). The new structure of prices altered by an increase in the minimum wage will change not only the technology and the structure of production but also the structure of demand (Herr and Kazandziska, 2011, p.6). Higher minimum wages may raise the level of consumption particularly because low-income households show a higher propensity to consume compared to high-income households, which will lead to a positive impact on aggregate demand, output, and employment (Herr and Kazandziska, 2011, p.6). However, in some industries, such as security or cleaning, increases in wages may refer to increases in price that leads to decrease in demand and employment (Herr and Kazandziska, 2011, p.6). But, even in this case, those who remain employed can consume more with higher income, and also, as products in one industry can be inputs in another, the chain reaction of changes in prices will be provoked with an obscure outcome in employment on a macroeconomic level (Herr and Kazandziska, 2011, p.6).

With regard to the effects of the minimum wage, the Keynesian's main concern is whether the policy helps to stabilize aggregate demand by enhancing purchasing power

among low-income households and to prevent deflationary development. A prerequisite for this goal is that minimum wages should increase at least in line with the medium-term productivity changes and the inflation target of the central bank. Increases faster than the average wage level will bring about a compression of wage structure from the bottom and a reduction in poverty. The Keynesian approach has little interest in the mechanism whereby the minimum wage influences individuals. In this vein, it addresses only three cases where the distribution of wages is differently adjusted in response to the increase in the minimum wage and does not elaborate the theoretical relationship between changes in wages and changes in employment. This makes it difficult to understand a variety of effects of the minimum wage found in empirical studies. Further to this, the Keynesian approach stresses only administrative intervention and disregards the point that a minimum wage rate is essentially set through a political process, although it takes several cases into account with regard to the level of the minimum wage.

The Political Economy of Minimum Wages

What Makes Some Support and Others Oppose the Minimum Wage?

Both the neoclassical view and the Keynesian approach discussed so far rule out the political nature of the minimum wage from their explanations. But, the minimum wage as a public policy is a collective process, and its outcomes are shaped by both ‘the domain of politics and the domain of markets as two sides of the same coin’ (Bickers and Williams, 2001, p.x). Hence, its effects should be explained allowing for both domains. This leads us to seek a political economy perspective for a more plausible, real-world account of the effects of minimum wages. The existing theoretical explorations underlying the political economy of minimum wages, however, focus mainly on questions about what other reasons than economic ones make some support and others oppose minimum wages, rather than on questions about how minimum wages affect workers. These rely on voter behaviour or trade unions and are mostly set in the US context.

West (1974) argues that the success of proposed legislation, including the minimum wage, depends on the median voter group because politicians pay attention mainly to the group's preferences, but the group does not match up with those who are affected by the minimum wage. The median voter group is not homogenous in terms of the minimum wage. While some individuals, particularly who are affiliated to trade unions, may be in favour of the legislation because their bargaining power will increase, the majority in the median group are those whose real incomes may decrease with the adverse price effects and small employers who are not typically wealthy businessmen (West, 1974, pp.134-135). Some of the non-union median voters may have altruistic virtue besides self-interest, based on the informed effects of the minimum wage (West, 1974, p.134). In this regard, West (1974) suggests in his theoretical model that the probability of support for minimum wages is determined by the voting significance of the group affected by the minimum wage, the proportion of non-union individuals and small business employers, effects of the minimum wage on the median voter group, the extent to which sub-groups in the median voting group are politically organised, and the degree to which voters perceive the adverse effect of the minimum wage (West, 1974, p.135).

More recently, Adam and Moutos (2011) constructed a political economy model to show political support of median voters for the minimum wage in the context of whether they would agree to replace the existing minimum wage with wage subsidies. Their model assumes that there are a fixed number of households and many perfectly competitive firms, and the majority of households earns income only from labour (Adam and Moutos, 2011, p.171). This implies that most voters are workers whose income is derived from the sale of their labour or from unemployment benefits, and the imposition of a minimum wage will reduce employment but increase aggregate wage income and the income of those who remain employment (Adam and Moutos, 2011, p.172). Adam and Moutos (2011) predict that, if the fiscal cost of wage subsidies are covered on by the increase in the wage income tax, median voters would not support the replacement of minimum wage with wage subsidies, but, if the cost is paid by firms through higher profit tax rates, wage subsidies can get broad political support from the median voter (Adam and Moutos, 2011, p.173).

Meanwhile, attempting to recast the argument on support for the minimum wage, Waltman (2000) argues that the reason why widespread public support for the minimum wage does not lead to the American electorate's support for its legislation is lack of mobilisation which results not only from the fact that minimum wage workers, mostly young, less educated, and poor, have a strong tendency not to vote and are unlikely to maintain their political will for their own economic interests, but also from the fact that there is the disparity between proponents' scientific knowledge-based approach and morals and ethics-based perception of the minimum wage among the public and the potential mobilisers, such as politicians and trade unions. Waltman (2000, p.142) suggests that minimum wage advocates need to recast the debate away from an individualistic framework 'toward a common good of society' as emphasised in 'the progressive era rhetoric of civic republicanism' (Prasch, 2001, p.356) .

Compared with those who build their arguments upon voters' behaviour, some social scientists hypothesize that minimum wage policy has been driven by the pressure of organised constituent groups that support or oppose the minimum wage in their own interest (Neumark and Wascher, 2008, p.253). Trade unions are regarded as one group able to organise a large bloc of voters in favour of the minimum wage because it gives the incentive of rises in demand for higher skilled unionised workers to unions representing workers in higher-wage industries (Neumark and Wascher, 2008, p.253) as well as the incentive of increases in wages to unions representing those in low-wage industries and also reduces competition in low-wage industries (Simons, 1944, pp.10-11). Assessing the potential constituent groups in terms of the relative size of each and the significance of minimum wage laws in their voting decision, Keech (1977) argues that three important points enable the minimum wage politically viable. First, individuals who benefit from an increase in the minimum wage are likely to consider the minimum wage more heavily in their voting decision than those who do not (Keech, 1977, p.136). Second, unlike West's (1974) argument presented earlier, the perception of the adverse effect of the minimum wage would have little influence on most voting decision. Third, workers who are paid slightly above the minimum wage, support the increase in the minimum wage to reduce competition from lower wage counterparts, and are represented by trade unions would have the greatest organisational power.

Cox and Oaxaca (1982) provide a more stylised theoretical model to predict the support or opposition of the minimum wage among competing interest groups in the context of an equilibrium model which assumes the unionised sector uses skilled labour and capital as inputs while the non-unionised sector uses unskilled labour, skilled labour, and capital as inputs (Neumark and Wascher, 2008, p.254). In this model, an increase in the minimum wage raises wage costs in the non-unionised sector, which leads to increases in the price of their products and the substitution of products produced in the unionised sector for ones produced in the non-unionised sector. This product market substitution drives an increase in the demand for union labour and its employment (Cox and Oaxaca, 1982, p.552), and hence, trade unions have an incentive to support the minimum wage for their own self-interest (Neumark and Wascher, 2008, p.254). By contrast, an increase in the minimum wage reduces the real rental rate of capital and harms the economic self-interest of capitalist, though the economic self-interest of capital is not necessarily the same with the interest of corporation executives in the minimum wage legislation (Cox and Oaxaca, 1982, p.542). Cox and Oaxaca's explanations are based on the assumption that politicians use their vote for maximising utility of re-election and it 'depends on the relative importance in the political marketplace of competing interest groups' (Cox and Oaxaca, 1982, p.552).

Meanwhile, Hayes (2007) identifies the minimum wage as a redistributive policy with three different patterns of politics according to whether interest groups are organised or not. The first pattern refers to the case that the issue of the minimum wage lies dormant because low-wage workers, the primary beneficiaries of the minimum wage, fail to organise themselves and thus effective demand for an increase in the minimum wage is hard to be formed whereas there is constant, intense opposition to an increase in the minimum wage from business groups. This case is particularly harmful to low-wage workers 'because the wage has never been indexed against inflation' and thus 'the real value of the minimum wage declines' (Hayes, 2007, p.469). The second pattern is the case that the minimum wage issue constitutes 'the ongoing struggle between labour and business over shares of national income' as trade unions take up the issue even if beneficiaries fail to mobilise (Hayes, 2007, p.470). In this pattern of politics, a relative power of labour and business is correlated with the magnitude and frequency of the

minimum wage increase⁴. The third pattern is the case that, along with the decline in trade unions, proponents of the minimum wage increase take a new strategy, such as ‘a combination of tax breaks and subsidies to business’ to offset the increase in wage costs (Hayes, 2007, p.471). In this case, an increase in the minimum wage shifts the cost from employers to taxpayers and consumers rather than redistributes income from employers to low-wage workers.

The Level of the Minimum Wage and its Fixing Process

A different political economy explanation relating to the minimum wage has been addressed by Brown (2009). Paying attention to the importance of the minimum wage fixing process with regard to the level of the minimum wage, Brown (2009) analysed the shifting internal dynamics of the Low Pay Commission and its negotiations over the level of the minimum wage in the British context. He argued that confrontation between Commissioners with diverse backgrounds was unavoidable on the issue of the level of the minimum wage but the position of the Commissioners were complex, which led to the negotiation ‘in a pluralist way’ (Brown, 2009, p.441). Within the Commissioners’ group with a trade union background, there were different interests relating to increases in the minimum wage by sector, and the Commissioners’ group with a business background also differed by firm size. Despite the ambivalent interests within each group, the union Commissioners were consistent in the upward direction of their influence ‘with the strong egalitarian ethos’ while the employer Commissioners were in the downward direction of ‘their influence as one of restraint on the union Commissioner’ (Brown, 2009, p.442).

The existing theoretical explanations of the minimum wage from the political economy perspective give limited insight into how political power shape the effects of the minimum wage on workers. Most of the political economy approaches in common sees government as an interest group in pursuit of re-election, and this results in confining the role of the state in the policy process to a ‘casting voter’ who makes a decision based on a refined calculation of which group would be more helpful for their re-election between employers and employees. Further, policy typology-based

explanations tend to be derived from Lowi's early premise that '*policies determine politics*' (Lowi, 1972, p.299, see Lowi 1964, p.688), from which Lowi (1988, p.726) later stepped back by acknowledging both directions of causal relationship between policy and politics. This may lead to an explanatory vacuum of policy outcomes produced or reproduced by the political process and overlook the changing nature of policy outcomes which brings about variations in the effects of the policy. Unlike other strands of the political economy explanations, Brown (2009) paid attention to the importance of the minimum wage fixing process with regard to the level of the minimum wage. However, he did not propose an explanation of the relationship between the fixing process and minimum wage effects.

A Proposed Political Economy Framework for Understanding the Effects of Minimum Wages

The above discussion of the existing theoretical accounts of the minimum wage tells us that the mainstream economic theory provides predictions about changes in wages, income, employment, and price, based on the view that the introduction or uprating of the minimum wage is a 'disruption to the normal labour market' and the assumption that employers and employees are rational actors who respond to the disruption towards minimising losses and maximising gains. The modified models and the alternative economic theory relax the view of the minimum wage as a disruption. However, they keep leaning on the assumption of rational individuals in the labour market. Since economic theories of the minimum wage, especially ones grounded in the neoclassical paradigm, explain the fundamental mechanisms of how agents in the labour market behave in response to the external stimulus, they are obviously indispensable for exploring the effects of the minimum wage. But, as mentioned earlier, the predictions of the mainstream economic theory are not supported by many empirical studies, and some of the findings, including Fang and Gunderson's (2009) presented in Chapter Four, are not clearly understood even by modified models or alternative economic theory. Accordingly, two significant questions may arise. One is whether individuals behave rationally in the labour market, and the other is whether the effects of minimum wages can be explained as the outcome of those repeated actions. The inconsistency between

theoretical predictions and empirical findings implies that agents in the labour market might not repeat their actions when facing similar situations and that the effects of minimum wages may be contextualised by reflective behaviours. Whether individuals repeat rational actions in a similar labour market situation is not a focus of concern in this thesis, which would be a merited question for the field of economics, in particular for behavioural economics or labour economics. What this thesis pays attention to as regards the questions and implications being addressed above is the potential of observable reflective behaviours which may allow better understanding of the minimum wage effects. At this point, it should be noted that the minimum wage is a public policy produced through the political process. A set of policy outputs resulted from stakeholders' reflective actions in the minimum wage policy process would contextualise the effects of the policy, in as much as they embrace a variety of intents formed by debates and decisions in the process. In this regard, this section seeks a theoretical framework which would complement the explanatory vacuum of existing theories with a lens of putting more weight on the policy process behind the minimum wage.

Minimum wage policy can be a political arena of keen power competition among the key stakeholders in as much as it is involved not only in regulating the behaviour of employers (Hayes, 2007, p.467) but also in redistributing profits from employers to employees (Levin-Waldman, 2011). This suggests that, bearing on minimum wage policy, power is neither equally distributed nor unchangeably structured among the key stakeholders, and its dynamics dominate the policy process. The dynamics of power in terms of the minimum wage rely on the extent to which each stakeholder, in particular employees, can be collectively organised and mobilised for or against the minimum wage (Eyraud and Saget, 2005; Hayes, 2007; Neumark and Wascher, 2008). Labour unions enable employees to have the force to make their voice heard more effectively and form a pivotal authority for obtaining favourable outcomes. However, the union density of low-wage workers is typically very low, and they are seldom collectively organised not only because they are directly and indirectly pressured by their employers into not joining trade unions, but also because they are often physically scattered by their workplaces (Hayes, 2007). Besides, some of trade unions speak for higher-skilled

workers with higher pay (Simons, 1944; Kau and Rubin, 1978), and this possibly leads them to be indifferent to or even to oppose the minimum wage in their members' own self-interest. But it has long been recognised that labour unions representing higher-skilled workers have an incentive to support the minimum wage because it may increase labour demand for higher-skilled unionised workers (Neumark and Wascher, 2008) or play the role of a wage floor to boost overall wage levels. In this regard, labour unions typically spend a significant amount of time and resources on campaigning and lobbying for minimum wage increases. They call for favourable public opinions and try to have prominent political leaders on their side in order to get greater leverage for an increase in the minimum wage.

Business groups have been effectively organised throughout the history of the minimum wage (Levin-Waldman, 2001; Waltman, 2000, cited from Hayes, 2007, p.473). They exert influence on the policy process, primarily using their instrumental power, 'which stems from political resources, such as informal ties to politicians and bureaucrats, appointment or election to government office,' including finance ministers or central bank heads, and 'core constituency relationship with political parties' as well as from 'organisation, money, technical expertise, and media access, all of which place business in a stronger position to lobby, orchestrate collective action, command authority in policy debates, finance campaign, and/or shape public opinion' (Fairfield, 2015, p.420). However, business interests in terms of the minimum wage can differ by the size of a firm. Small businesses routinely oppose an increase in the minimum wage because they typically hire more unskilled labour and thus are likely to be more directly affected by the increase, whereas the position of big firms, of which many are only marginally affected by an increase in the minimum wage, is theoretically ambiguous since they may oppose higher minimum wages in order to have more leverage in wage bargaining but could support higher minimum wages to 'eliminate lower-cost rivals (Rustici, 1985, p.120)' (Dickson and Myatt, 2002, p.60; Neumark and Wascher, 2008). There is also a gap in resources and organisational cohesion for political influence between small and big business groups. Big business organisations can exert strong influence for their own self-interests in the policy process, utilising the ample resources described above and insignificant free-rider problems. By contrast, small firms' associations 'are a diffuse

group with free-rider problems' (Dickson and Myatt, 2002, p.60) and may not have sufficient resources to lobby effectively, organise collective action, dominate policy debates, finance campaign, and shape public opinion, but 'echo(ing) the free market editorial writers' (Waltman, 2008, p.27). In this regard, they often devote their efforts to minimising an increase in the minimum wage rather than to blocking any increase in and of itself (Waltman, 2008). These potential differences in interests and resources between small and big businesses may create variations in the intensity of business opposition as a whole to (or possibly support for) the minimum wage. Nonetheless, 'business interests remained and remain adamantly and resolutely opposed to the whole idea of a minimum wage' (Waltman, 2008, p.3) because it interferes with 'a basic business decision (Waltman, 2008, p.3) and 'their entrepreneurial liberty' (Levin-Waldman, 2001, p.105) and 'legitimizes governmental regulation in general' (Waltman, 2008, p.3). 'Much of the intensity of business opposition centres around the law's intrusion into the private relationship between employers and employees' (Hayes, 2007, p.467).

Government is also a key stakeholder of the minimum wage not only because it is the final decision-maker and implementer of the policy, but also because it has its own 'comprehensive interest' in the policy, which is associated with a regime's policy orientation as well as its pursuit of political supports from the electorate. The capacity to be organised rarely matters for a government, in as much as it is an organised entity with power anchored in representative democracy and/or bureaucratic authority. However, when a government deals with an issue, the low degree of coherence among the relevant government departments may weaken its organisational power. When it comes to government power as regards the minimum wage, a government's comprehensive interest to pursue both its own ideological orientation towards policies and political support from the electorate for its re-election is critical. A regime's policy orientation is closely connected to its political interest in preserving the regime, but they are often at odds with each other in practice. The extent and intensity of power that a government exerts on a policy issue depend mainly on the interaction with other forces which would have a strong influence on its policy orientation to be sustained or obstructed. Public opinion and structural power are critical forces as regards minimum

wage policy.

Public opinion influences government decisions regarding a policy when an idea is widely shared by the general public, and the support for the idea intensively converges enough to mobilise extensive civic groups and/or to attract a key enabler, such as a powerful political leader. The minimum wage tends to be widely supported by the general public with moral sympathy and anticipation that it would do little harm to their working life (Waltman, 2000). But it rarely comes up as a leading political agenda item because the issue is not of direct interest to the majority of society and thus seldom draws the mobilised political participation of civic society and/or strong support from those with political leverage. Weakened trade unions and/or tepid support from the unions representing more skilled workers would not be able to promote the mobilisation of public opinion in favour of the minimum wage. Further, corporatist institutions between labour, business, and government, which are adopted in many countries for minimum wage fixing procedures as seen in Chapter Two, tend to deter the minimum wage from being brought into the public political agenda by giving an impression that ‘government limits the power of business’ (Hill, 2009, p.56) and ‘depoliticising the issue’ (Hill, 2009, p.59).

By comparison, structural power is a potent force that forms the base of the economic power of business by coordinating the market in the capitalist economy. It constantly influences government’s comprehensive interest regarding policies, including the minimum wage. As Block (1992, quoted in Hundt, 2009, pp.23-24) defined, structural power refers to the ability of business to prevent changes that conflict with the broad interests of capital by threatening to withdraw their resources from the economy and ‘arises from the fact that, in market societies, states depend on private-sector agents to invest in ways that generate growth, employment, and prosperity’ (Fairfield, 2015, p.413). This is a specific variety of power that business is endowed with but differs from the power that business holds as organisations, in as much as, unlike the organisational power of business, the threat from structural power is ‘implicit ... Government anticipates the interests and reaction of capital without the need for interest group representations’ (Marsh, 1983, p.4, quoted in Hundt, 2009, p.23). However, structural power can enhance the organisational power of business by facilitating government

and/or policymakers to embrace what business organisations demand, and at the same time, organisational power also can strengthen structural power by reinforcing the concerns of government and/or the general public on investment using its plentiful and powerful resources (Fairfield, 2015). This suggests that the economic power of business which is founded on both structural power and organisational power operates as a form of political hegemony (Gramsci, 1971). The extent to which government policy decisions are influenced by the economic power of business relies mainly on the extent to which government policy orientation is market-oriented, the extent to which the majority of voters supporting the government prefers pro-market interventions, and the extent to which economic conditions and outlook a government faces afford to cope with predictable and unpredictable risks that arise from the changes in policies. In terms of the minimum wage issue, a government tends to stick to its own policy orientation which enables it to maintain its foundation of political support unless radical changes in macroeconomic conditions or a powerful mobilisation of public opinion against the policy orientation occur. This has an important implication for the characteristics of policy change as regards the minimum wage, which will be discussed in connection with regime change below.

The facts that government is structurally in an intermediate position between labour and business and that it is 'not a neutral agent' (Hill, 2009, p.40) but one with its own interests, suggest that government plays a decisive role in the dynamics of power as regards the minimum wage. In accordance with its policy orientation, a government can reduce the potential prior imbalance of power between labour and business, give more weight to one of the two conflicting power in an active or passive way, or remain a spectator. These actions may not be consistent through all the years in office and/or all the stages of the policy process at a certain time. For example, a government might revise its position whenever a new minimum wage rate is fixed within its years in office and/or could take a stance to balance labour and business in the stage of agenda setting and policy formulation, take any sides in the stage of decision-making so as to pursue their own interests, and remain a spectator in the stage of implementation in order to offset risks from a policy decision. Different government actions lead to a variety of power dynamics in the policy process and different types of equilibrium of power

among the key stakeholders of minimum wage policy, such as explicit consensus, tacit consensus, influence, and domination.

The dynamic of power, which results in forming an equilibrium among the key stakeholders at a particular time and stage of the policy process, assigns implicit purposes and characteristics to the policy by producing a set of policy outputs. Regardless of its legislative purpose and redistributive trait, a minimum wage has a tacit aim and intent as a consequence of policy outputs. A typical example is that the minimum wage is covertly characterised as symbolic when a rate is fixed at a much lower level to achieve its original, explicit goal and/or when compliance with the law is not properly supervised. This could be a case that the equilibrium of power is formed as domination by business or implicit consensus between business and government at the stage of decision-making and /or at the stage of implementation in the condition that labour power and public opinion are weak, government policy orientation is more in line with business interest, and/or government actions are strongly influenced by structural power. However, this does not mean that a particular set of implicit purposes and characteristics of a minimum wage are matched to a certain combination of government actions and a form of equilibrium of power in the policy process. If a minimum wage rate is fixed at a certain level for a specific objective, the minimum wage comes to have an implicit purpose, for instance, an increase in employment of the overall population or a part of it. In this case, government actions and the equilibrium of power may take the same configurational forms with the case of the minimum wage with implicitly symbolic characteristics. Changes in the implicit purposes and characteristics of a minimum wage can be detected by the discourse created in the course that a dynamic of power produces a set of policy outputs because a variety of intents as regards the minimum wage are included in and excluded from the policy outputs through debates and decisions in the process.

The implicit purposes and characteristics of the minimum wage shape its actual effects because they provide a concrete direction toward which minimum wage policy works. Unlike the legislative purpose of the minimum wage, the implicit one caught by the discourse through its policy process is likely to be produced bearing more on a specific issue addressed with more urgent and controversial concern at a particular point of time.

For instance, if a subminimum-related issue is discussed in the light of concern about the employment level of a certain group of workers which is largely composed of minimum wage workers, a sub-rate for the group may be explicitly introduced, or a minimum wage rate for all could be newly fixed, taking into account the wage level that would not make an adverse employment effect, particularly for the target group. In this case, the minimum wage is intended as an employment policy rather than a wage policy, at least for the group of workers concerned, and this becomes an explanatory basis of minimum wage effects for the group, such as no negative employment effects but insignificant increases in wages and in family income. Furthermore, when the implicit purposes and characteristics of a minimum wage include explicit concern about a particular group of workers, they can be reinforced by cultural prejudice against the members of the group and their internalisation of it, which drives the intended purpose more explicitly presented as an effect of the minimum wage. The aim of no employment effect for a certain age group of workers, such as the young or older workers, would be an example. Those workers who are typically disadvantaged in the labour market might actively accept a lower wage than the minimum wage and/or oppose an increase in the minimum wage in order to stay in employment. In the same context, they could favour an age-differentiated subminimum. Such attitudes and responses to the prejudice and disadvantaged practice in the labour market are likely to strengthen a tacit purpose of the policy to stress the employment level for the targeted age group, regardless of the general legislative purpose of the policy to improve wage and income levels for the vulnerable. This would result in neither adverse employment effects nor increases in wage and income for the group concerned.

A series of changes in what are involved in policy change of the minimum wage discussed so far can come about at any time and/or any stage of the policy process in principle. But, the tendency of government to stick to its own policy orientation under neither radical change in macroeconomic conditions nor a powerful mobilisation of public opinion against the policy orientation implies two points. One is that minimum wage policy tends to be ‘punctuated by rare episodes of radical change’ (Pollitt and Bouckaert, 2009, p.168) in practice, which assumes ‘a sharp distinction between long periods of institutional stasis periodically interrupted by some sort of exogenous shock’

(Streeck and Thelen, 2005, p.1). The other is that government change would be the most regularly observable shock to minimum wage policy. As long as there is no socioeconomic shock which influences minimum wage policy, government policy orientation becomes the key to determine a particular direction of government actions and to shift an established equilibrium of power, which results in a new dynamic of power among the key stakeholders and leads to the production of distinctive implicit characteristics of the policy.

In sum, the theoretical framework proposed here argues that the implicit characteristics of minimum wage policy are produced by a dynamic of power, which results in forming an equilibrium of power among the key stakeholders at a particular time and stage of the policy process, and the characteristics, which can be detected by the discourse constructed through the policy process, shape the effects of the minimum wage. Furthermore, minimum wage policy is likely to be punctuated mainly by government change unless a shock in macroeconomic conditions and/or radical mobilisation of public opinion occurs.

Research Methods

The theoretical discussion in the first part of this chapter has two methodological implications for this research on the effects of minimum wages. First of all, the main theoretical point is that the effects of minimum wages are not only produced by economic mechanisms in the labour market but are also shaped by political consequences in the policy process. This requires a methodology which allows an understanding of the effects of minimum wages based on both the economic mechanisms and the political consequences. However, the way each is involved in the effects of minimum wages displays an epistemological distinction, which leads to the mixed use of different types of data and research methods. That is, the economic mechanisms in the labour market assume an objective reality which can be repeatedly embodied by general rules regulating the market. Relying on this assumption, the majority of studies on the effects of minimum wages have taken the stance that an objective reality can be imperfectly and probabilistically explained by quantifiable data

and statistical methods. In contrast, the political consequences in the policy process presume realities that are socially constructed and driven by the context of power relations governing the process. This presumption suggests that realities can be detected by a qualitative analysis of text materials and spoken and written discourse data.

The other main point of the theoretical discussions is that minimum wage policy would rarely have a drastic change without a socioeconomic shock, and government change would be the most regularly observable episode of radical change to the policy. This suggests that the effects of minimum wages could be distinctive according to the term of office of a particular government, and thus designing the research on the effects of minimum wages by government would give a better sense of the effects. This suggestion may allow us to explore whether different levels of increases in the minimum wage have different effects, if the rate of increase in the minimum wage tends to be kept at a similar level throughout the term of office of a government and is likely to alter significantly as the policy orientation for the minimum wage shifts with a change of government. Besides, exploring the question by government tenure and comparing the results may enable us to check the practical relevance of monopsony explanation, currently the most prominent account particularly in terms of non-negative employment effects, and to go over the necessity of seeking a better understanding of the effects based on the analysis on political consequences in the policy process.

Reflecting the two methodological implications from the theoretical discussion, this thesis used both quantitative and qualitative methods to examine the effects of the minimum wage under different governments and political consequences in its policy process which were expected to shape the effects. Two research questions, *how the minimum wage affects the distributions of wages and family earnings, employment and exits from in-work poverty among older workers* and *whether different rates of increases in the minimum wage have different effects among older workers* were examined through a series of quantitative analyses using a set of secondary data and statistical methods. The two questions were explored at the same time since two five-year periods of two consecutive governments which had a big gap in the rate of increase in the minimum wage were compared in each analysis of each subtopic. These quantitative analyses were performed within the general assumptions of economic mechanisms in

the labour market. Meanwhile, the third research question, *how the empirical results of the minimum wage effects on older workers can be understood* was explored through a contextual analysis of texts and discourses produced particularly in the minimum wage fixing process, after a comprehensive understanding of the empirical results from the quantitative analyses based on economic explanations of the effects of minimum wages. This qualitative analysis was conducted on the basis of the alternative political economy framework for the research on the effects of minimum wages proposed earlier in this chapter. Thus, the method chosen for the analysis followed the logical reasoning of building the theoretical framework. The reason why the contextual analysis focused on the minimum wage fixing process rather than embracing its whole policy process was because this research assumed that comprehensive debates and decisions would be made mostly in the fixing process and likely to regulate the whole of the minimum wage policy process.

This research conducted a case study of South Korea on the effects of increases in the national minimum wage on older workers, comparing two five-year periods of consecutive Korean governments, ‘the Participatory Government’ under Roh, Moo-Hyun (2003-2008) and the Lee, Myung-Bak government (2008-2013). Below are described the specific data and methods used in each of quantitative and qualitative analyses for this case study. This research did not take a quasi-experimental design in the quantitative analyses, in which the causal impact of a minimum wage on target population would be typically estimated by comparing before and after its introduction or treatment and comparison groups when it increased in a region or a sector. This was on account of the developmental and institutional peculiarities of the Korean national minimum wage. As informed in the first section of Chapter Six, the national minimum wage was introduced in the late 1980s in Korea but became widely known after it began to be applied to all companies or workplaces with one employee or more in 2000 and as the number of non-regular workers sharply increased in the mid-2000s influenced by the International Monetary Fund (IMF)’ bailout programme with the 1998 Korean financial crisis. This fact implies that the issue of noncompliance with the minimum wage would be significant at least until the early 2000s. Further, since the Korean national minimum wage has been implemented all over the country under the same

conditions since 2000, it is difficult to set up a comparison group for examining the effects of the minimum wage. Internal validity of the inferential statistical analyses in this case study was sought by using panel data which contained observations collected over multiple time periods for the same individuals and also by allowing for regional difference in the influence of an increase in the minimum wage. In line with the consideration of those developmental and institutional peculiarities of the Korean national minimum wage, the two Korean governments were chosen for this research because the Roh, Moo-Hyun government maintained one of the highest rates of increases in the minimum wage whereas the Lee, Myung-Bak government had the lowest rate of increase, and they had contrasting political orientations. The big difference in the rate of increase in the minimum wage and in political orientation between the two governments was an ideal condition to embody the assumption of government change as a radical impact on the minimum wage, and also to demonstrate the methodology which this research has argued provides a better understanding of the effects of minimum wages.

Quantitative Analyses

Using the Korean Labour and Income Panel Study (KLIPS), four subtopics - the effects of the minimum wage on the distribution of wages, on employment, on the distribution of family earnings, and on exit from working poor, among older employees aged 55 and older - were examined for each five-year period of the two chosen Korean governments. Considering the fixing point of a minimum wage rate by each government, its application period, and the data collection time point of each wave (see Appendix 1), wave 7 in 2004 to wave 16 in 2013 of the KLIPS were mainly included. However, some variables required were derived from wave 6 in 2003 and wave 17 in 2014. For example, family income for 2013 can be derived from wave 17 in 2014 because each wave of the KLIPS provides household income for the previous year, not for the concerned year; and also, the fraction of older employees affected by a minimum wage rate newly applied in 2004 should be calculated with wave 6 in 2003. Except for the kernel density estimates for descriptive analyses of the distributions of wages and of family earnings, regression-based statistical methods for panel data analysis, such as

ordinary least squares (OLS) models and fixed-effects models, and the multilevel discrete time event history model for competing risks were used as per the purpose of each subtopic. The target age chosen for this research, as indicated in Chapter Six, was grounded on the Korean context of the labour market that the actual age at which workers retired from their lifetime main jobs has long been around 55 years.

Data

The KLIPS is an annual longitudinal panel study in South Korea which surveys the economic and labour market activities of households and individuals residing in urban areas across the country. It began in 1998 and is conducted annually by the Korea Labour Institute (KLI) employing face-to-face interviews with the same set of questions to the same set of households and their members. The sample was selected through a two-stage stratified clustering method in which 951 areas were initially chosen from a total of 21,675 sampling unit areas of the 1995 Korea Census, and then 5-6 households were randomly opted for from each area. The original sample of 1998 included 5,000 households and 13,321 individuals therein to represent the adult population aged 15 and over residing in urban areas and was complemented in the twelfth wave in 2009 by adding 1,415 households and their members to redeem a significant number of dropouts from the panel and to extend the sampling unit area to Jeju Island excluded from the original sampling. The KLIPS consists of three datasets, household, individual, and work history. The household dataset covers demographics, changes in household members, family relations and financial resource exchanges between generations, types of accommodation, children's education and childcare, household income and consumption, assets and debts, financial status, and burdensome spending. The individual dataset includes the state of economic activity, earnings, working hours, income and consumption, education and vocational training, and job-seeking activities. The work history dataset contains information on individuals' mobility in the labour market.

The KLIPS is the best available dataset for this study about the effects of the minimum wage on older workers in Korea. Firstly, it includes a reasonable panel size of older employees aged 55 and over which represents the corresponding population in urban

areas, which means that it is feasible to conduct an inferential statistical analysis focusing on older employees. Secondly, since the survey provides employees' monthly earnings and weekly working hours, hourly wage rates directly comparable to minimum wage rates can be derived. Along with this, the KLIPS allows family earnings and income identified per individual unit through merging the household dataset and the individual dataset, and it facilitates an analysis of family income-related effects of the minimum wage, including the effects on family earnings and on exit from working poor. More importantly, the KLIPS enables the contextual limitation that a comparison group which is not affected by an increase in the minimum wage cannot be set up to be redeemed by providing the data from the same individuals obtained over time and also by allowing the regional difference in influence of the minimum wage to be employed in the analysis. Furthermore, since the KLIPS has all the strengths of the pre-existing time-series data and cross-sectional data, and allows event history data with repeated events and multiple types of event simultaneously to be constructed, the analysis of the effects of an increase in the minimum wage on transitions in individuals' status of employment and/or of poverty, is rendered feasible.

Methods

The first concern with regard to the effects of the minimum wage on older workers was its distributional effects on wages. The effects were examined by testing the two typical predictions of economic theories on wages, spike and spillovers. As presented earlier in this chapter, if a minimum wage is strongly enforced and complied with, it will raise the pay of those who were previously paid below that rate, which truncates or thins out the lower tail of the distribution of wages and creates a spike at the point of the minimum wage (Neumark and Wascher, 2008; Manning, 2012). An increase in the minimum wage may also raise the wages of those who were already paid slightly above the new minimum rate, mainly due to substitution of workers with higher skill for those with the lowest skill and wage differentials between workers with different levels of skill (Neumark and Wascher, 2008). Following Alaniz, Gindling, and Terrell (2011), spikes at the point of the minimum wage were assessed graphically per five-year period where the rates each of the two concerned governments fixed were applied, by plotting the kernel density estimates of log hourly wages minus log minimum wage for each

employee aged 55 and older in each year, where a zero indicated that the worker earned the minimum wage rate of the year.

Then, how increases in the minimum wage caused changes in wages of employees aged 55 and older and relieved the wage gap among them were tested for each of the two chosen five-year periods, using OLS and fixed-effects models. Following Jeong, J-H (2011), an increase in the minimum wage was defined as two variables which were shortened henceforth as *the fraction affected* and *the fraction newly affected*. *The fraction affected* refers to the proportion of employees aged 55 and older who earned less than a new minimum wage in the previous year to all employees of the same age group, whereas *the fraction newly affected* refers to the proportion of employees aged 55 and older who were paid between an old and a new minimum wage in the previous year to all employees of the same age group. The latter is more typical and therefore suitable to stand for an increase in the minimum wage because the fraction represents those directly affected by the increase. However, since a considerable proportion of employees earned less than the minimum wage not only among mature workers aged 55 and over but also in the labour force as a whole in Korea, the former was also incorporated as an indicator representing an increase in the minimum wage. Further, both indicators of an increase in the minimum wage were computed by region consisting of 7 metropolitan cities, 8 provinces, and one special self-governing province.⁵ This was to redeem the limitation that a comparison group would hardly be set up due to the institutional and developmental peculiarity of the Korean national minimum wage, based on the assumption that regional difference in the fraction of workers affected by an increase in the minimum wage would reflect the regional wage differentials. The dependent variables were *the changes in the 10th, 25th, 50th, 75th, and 90th percentiles of log hourly wages among employees aged 55 and older for each region* and *the changes in ratios between the 90th and 10th, the 90th and 25th, the 90th and 50th, and the 50th and 10th percentiles of log hourly wages among employees aged 55 and older for each region*. In the statistical models, *the changes in the employment rate of older employees by region* were included as a control variable. This was defined as the changes in the proportion of employees aged 55 and older who were neither self-employed nor engaged in unpaid work to all individuals of the same age group for each

region. This variable was under the assumptions that regional difference in the rate would reflect the different labour market conditions across regions and that the rate was arguably the better labour market measure than the unemployment rate of older workers in as much as those who had motivation to work but were not employed and those who were completely left the labour market were hardly distinguished in practice for this age group.

The employment effect of the minimum wage for older workers was explored on two different levels. Using OLS and the fixed-effects models, the effect was first screened at the regional level for each of the two five-year periods by regressing each of *the changes in the employment rate of older employees by region* and *the changes in the unemployment rate of older individuals by region* on both of *the fraction affected* and *the fraction newly affected*, the same indicators of an increase in the minimum wage used in the analyses of the effects on the distribution of wages. *The changes in the employment rate of older employees by region* was also defined as the same with the control variable in the analysis of the distributional effects on wages, and *the change in the unemployment rate by region* referred to the changes in the proportion of those aged 55 and older who were neither employed, self-employed, nor engaged in unpaid work to all individuals of the same age group for each region. For a valid causal inference, regional differences in factors which would be involved in regional employment and unemployment rates should be controlled for. For example, sectoral composition by region may reflect different rates of growth in production, different elasticity of employment with respect to output, different capital intensity, and different patterns of technological change by regional economy which all will influence employment at the regional level (Eurostat, 2014). However, since the number of individuals aged 55 and over in the panel data used for this research was relatively few when taking into account the number of industrial sectors classified in the data, it was questioned whether the sectoral composition for the age group by region would have sufficient distinction to reflect the regional economy, and no control variable was included in the models. In this regard, the statistical tests for employment effects at the regional level aimed at getting informed of the consistent correlation between an increase in the minimum wage and the changes in employment or unemployment rates for older individuals, rather than at

determining the causal relationship between them.

The causal relationship between the increase in the minimum wage and older workers' status in employment was explored at the individual level. Given the assumption that older employees were more likely to be laid off in connection with labour market interruptions and less likely to be re-employed once they were unemployed, whether they would be discharged in practice as the minimum wage increases was the primary concern for the group. In this regard, how an increase in the minimum wage affected the transition from being employed among individuals aged 55 and older was tested for each of the two five-year periods, using a multilevel discrete-time event history model for competing risks. The model allows event history data with discrete-time nature and complex structure to be handled (Steele, Goldstein, and Browne, 2004; Steele, 2011) and requires a series of data preparations. The longitudinal record of individuals' employment status collected every year in the KLIPS datasets was first converted into event history data with an episode defined as a continuous period of being employed. An episode began if an individual started to be employed and ended if the individual moved into unemployment or other types of employment, such as self-employment and non-wage family business work. The timing at which an episode ended was represented by a form of time interval in which a transition occurred, and the exact timing of a transition within a time interval was not important in a given case because the main concern was to analyse whether or not an employee remained being employed along with the annual increase in the minimum wage, based on the length of time spent in being employed, not to study the timing of transition. This leads to a discrete-time model which allowed us to analyse the duration of episodes (Steele, 2011). Discrete-time models have flexibility to handle a complex structure including a hierarchical structure and multiple possible ways in which an episode may end and also to facilitate straightforward inclusion of time-varying covariates (Steele, Goldstein, and Browne, 2004). Transitions from being employed can be found several times for an individual over the observation period, and the two types of transitions into unemployment and other types of employment become competing risks at which an individual is of experiencing a transition from being employed. These require a multilevel multinomial model dealing with recurrent events within an individual and two competing risks, and

the model can be embodied within a discrete-time model by some initial data restructuring.

The event history data of employment transition were restructured in discrete-time format with one record per one-year time interval spent in an employment status, using SPSS. These data were essentially in a long format where fewer cases contributed a greater number of observations due to the year concerned. In this data, the case indicated by an *individual's identifier* was regarded as level 2, and the variable, *year* as level 1. To construct the *event* variable which showed an individual's transition in employment status for each year, the original variable for employment status was recoded as 0 for still being employed, 1 for becoming unemployed, and 2 for becoming self-employed or a non-wage family business worker. The variable, *duration* which indicated the duration of an episode defined was created, indexed as 1, 2, 3, ... from the starting year of being employed to the ending year with a transition to being unemployed or in other types of employment, and it was reset to 1 at the start of second time being employed. Since being employed was the only starting point in employment status, the record of the following year(s) was not included as an observation if an individual stayed unemployed or in other types of employment after a transition to one of them. The variable, *exposure* which indicated the number of years of a one-year interval for which an individual was at risk of a transition, was also created. In the analysis, the *exposure* variable is typically used for giving observations weighted (The University of Bristol, 2006). However, since the time interval used as the denominator for weighting was one for this analysis, the value of the multinomial response weighted was the same as the one before being weighted.

The discrete-time data procured through the first data restructuring presented above were extended to have a set of binary responses for each multinomial response. This construction was carried out automatically when a multinomial model was specified in MLwiN (The University of Bristol, 2006).⁶ The *event* variable in the discrete-time data was converted into four variables in the extended data, *response (resp)*, *response_index (resp-ind)*, *cons.unemployment (con.une)*, and *cons.self-employment (cons.self)*. The *response_index* variable indexed the binary responses as 1 for the unemployment indicator and 2 for self-employment or non-wage family business work indicator. This

variable became the level 1 identifier when defining the multilevel structure, and the ‘real’ level 1 (time unit) was shifted up to level 2, with individual at level 3. When *response_index* was 1, *cons.unemployment* was 1 and *cons.self-employment* was 0. When *response_index* was 2, *cons.unemployment* was 0 and *cons.self-employment* was 1. The *response* variable was indexed as 1 only when the value of the *event* variable in the discrete-time data was consistent with the value of the *response_index* variable in a given year, and otherwise, the *response* variable was indexed as 0. The *individual_long* variable and the *atrisk_long* variable were ‘long’ versions of *individual_identifier* and *exposure*, respectively, in the discrete-time data. The *duration.unemployment* (*dur.une*) variable was *cons.une* * a ‘long’ version of the *duration* variable. The *con.** and *dur.** variables were created when *cons* and *dur* were added to the model as explanatory variables. The coefficients of *cons.une* and *cons.self* became the intercepts in the contrasts for unemployment and self-employment/non-wage family business work versus remaining in employment while the coefficients of *dur.une* and *dur.self* were the duration effects on each contrast. An example of the data expansion for episodes for two individuals is as follows:

Discrete-time data

<i>Individual</i>	<i>Dur</i>	<i>Event</i>	<i>Atrisk</i>
1	1	0	1
1	2	0	1
1	3	2	1
2	1	1	1

Extended data by MLwiN

<i>Individual long</i>	<i>Resp ind</i>	<i>Resp</i>	<i>Atrisk long</i>	<i>Cons.une</i>	<i>Cons.self</i>	<i>Dur.une</i>	<i>Dur.self</i>
1	1	0	1	1	0	1	0
1	2	0	1	0	1	0	1
1	1	0	1	1	0	2	0
1	2	0	1	0	1	0	2
1	1	0	1	1	0	3	0
1	2	1	1	0	1	0	3
2	1	1	1	1	0	1	0
2	2	0	1	0	1	0	1

The main explanatory variables included in the model which was set up through the data preparation were *duration* spent in being employed and *square of duration* for the effect of duration and the combination variable, *the minimum wage application or not * log hourly real minimum wage* for the effect of the minimum wage. The *duration* variable was centred by group defined by the variable, *year* in the model, which meant that the annual mean of duration was subtracted from the corresponding individual scores, and thus, after being centred, the value, zero indicated the mean of the centred variable, *duration*, for each year (Hox, 2002). Centring *duration* was to avoid multicollinearity issues possibly generated by including the transformed variable, *square of duration*, in the model, which could affect model convergence problems and/or inflated standard errors (Goldstein, 2015).⁷ The advantage of centring on the variable, *year* is that the effect of duration can be interpreted under the control of the year effect. Meanwhile, using *square of duration* for the effect of duration meant that the quadratic relation between the duration spent in being employed and the transition to unemployment or self-employment/non-wage family business work was tested, assuming that the occurrence of a transition would increase or decrease with the duration spent in being employed but at some point it could go the opposite way. This assumption took into account older workers' characteristics of the relatively high proportion of temporary jobs and the plausibility of being in a critical transition period from a major lifelong career. For the effect of the minimum wage, using the combination variable, *minimum wage application or not * log hourly real minimum wage* was to capture both the individual-varying feature and the time-varying one within an individual, simultaneously. *Minimum wage application or not* in the combination variable was indexed as 1 for the individual affected by a minimum wage rate and 0 for those not affected, based on an employee's hourly wage which was derived from monthly pay and average weekly working hours one year earlier than each concerned year. Some missing data of the derived hourly wage, which occurred due to the absence of information about monthly pay and weekly working hours, were imputed by expectation-maximization (EM) technique in SPSS for all employees each year, considering the relationship with other variables, such as sex, age, the level of education obtained, and the types of employment.⁸ In addition to the main explanatory variables, *sex, age, and the level of education obtained* were included as additional controls in the

model. The *education obtained* variable was categorised as middle school and lower and high school and higher since the proportion of those with higher education was very small. All variables included in the model were time-varying, except for *sex*.

This multilevel discrete-time event history model for competing risks constructed for the analysis of the minimum wage effects on employment among older employees aged 55 and older was examined in the fixed-effects model estimated by the 1st order marginal quasi-likelihood (MQL) procedure and the random-effects model estimated by Monte Carlo Markov (MCMC) method, using MLwiN. Since MQL produced the most rough approximation, leading to estimates biased downward, and predictive quasi-likelihood (PQL) raised convergence problems in MLwiN due to its instability (Rasbash, Steele, Browne, and Goldstein, 2016), whereas MCMC method produced new estimates for unknown parameters from the last iteration by repeating the process of combining a prior distribution into a posterior distribution for many times (Browne, 2016), the simulation-based estimation procedure was used as an alternative to likelihood-based estimation procedures in the random-effects model which allowed for unobserved heterogeneity at the individual level by enabling the coefficients of constant variables for the two binary responses to vary randomly across older employees.

The third concern, the effect of the minimum wage on older workers' family income was explored by questioning how an increase in the minimum wage affected the distribution of family earnings. Since the minimum wage can influence income from labour only, family earnings were regarded as a relevant outcome variable for the analysis. The distribution of family earnings of employees aged 55 and older was first reviewed for each of the two five-year periods by plotting the kernel density estimates. The estimates were calculated per year by subtracting the logarithm of 60 per cent of the median annual family earnings per capita for all employees' households from the logarithm of annual family earnings per capita for each older employee' household. The zero in the density plot indicates that the older individual's family gains 60 per cent of the median annual household earnings for all employees' households. Typically, total earnings that all employed family members earn in a household is used for the study of the distribution of household earnings. However, as the focal point of this analysis was the changes in family earnings of older employees, the annual family earnings per capita

for each older employee were computed by dividing the total annual family earnings in each individual's household by the square of household size, an equivalence scale for income estimates.⁹ Then the effect of the minimum wage on the distribution of family earnings of older employees was tested for each of the two five-year periods, using OLS and fixed-effects models. In the models, the same measures of an increase in the minimum wage and of *the changes in the employment rate of older employees by region* used in the analyses of the distributional effect on wages were employed as independent variables and a control variable, respectively. The dependent variables were *the changes in the 10th, 50th, and 90th percentiles of log annual family earnings per capita among employees aged 55 and over for each region* and *the changes in ratios between the 90th and 10th and the 50th and 10th percentiles of log annual family earnings per capita among employees aged 55 and older for each region.*

The last concern as regards the effects of the minimum wage on older workers was whether an increase in the minimum wage helped an older employee to exit from poverty. This was examined for each of the two five-year concerned periods, using a multilevel discrete-time event history model for competing risks, as in the analysis of the minimum wage effect on older employees' employment. Combining the individual dataset and the household dataset of the KLIPS, event history data with an episode defined as continuous period of being the working poor was constructed among employees aged 55 and older. The working poor were defined as employees whose household income was less than 60 per cent of the median annual household income for all individuals surveyed.¹⁰ Note that household income rather than family earnings was used for this analysis on the assumption that earned income would be the most elastic to change a household's finance among low-income families. Household income was computed on a per-capita basis for figuring out an employee's poverty status by dividing the total annual amount of earned income, financial income, income from estates, income from social insurance, transfer income, and other income in an individual's household by the square root of household size, an equivalence scale for income estimates as in the calculation of family earnings per capita in the analysis of the distributional effect on family earnings. Some missing data of the derived household income per capita were imputed by expectation-maximization (EM) technique in SPSS

for all respondents each year, considering the relationship with other variables, such as sex, age, the level of education obtained, marital status, householder or not, and the number of family members, after the check for whether the missing data were small enough and at random. An episode started if an individual began to be in in-work poverty and ended if the individual was out of poverty while remaining employed, became unemployed, or moved into other types of employment, such as self-employment and non-wage family business work. Accordingly, there were three types of competing risks at which an individual was of experiencing a transition from being working poor, and three binary *responses* for the multinomial response were generated in the extended discrete-time data in MLwiN.

The main explanatory variables were *duration* spent in being working poor and *square of duration* for the effect of duration and the combination variable, *the minimum wage application or not * log hourly real minimum wage* for the effect of the minimum wage. By the same token in the analysis of the effect on older employees' employment, the *duration* variable was centred by groups defined by the variable, *year* in the model, and the quadratic relation between duration spent in being working poor and the transition to other states was tested with *square of duration*. *Sex, age, the level of education obtained, householder or not, and the number of family members* were included as control variables in the model.¹¹ All variables were time-varying, except for *sex*. As in the analysis of the employment effect at the individual level, the event history model for the effects on older employees' exit from being poor was examined in the fixed-effects model using MQL estimation method and the random-effects model using the MCMC estimation method.

Qualitative Analysis

Three components of the alternative political economy framework proposed earlier for this research on minimum wage effects - *government political orientation as regards policies, the dynamic of power, and the implicit characteristics of the minimum wage* - were compared through a contextual analysis for the two chosen five-year periods in order to better understand the empirical results from the quantitative analyses. The

method was chosen based on the logical reasoning of building the theoretical framework. That is, the significant dissonance between empirical results and theoretical predictions of the existing economic theories addresses an explanatory vacuum. This evokes the fact that the minimum wage is fundamentally a public policy which is framed and implemented through political policy processes and has multiple attributes of labour and social policy as well as wage and economic policy. Although quantitative methods are prevalent in public policy research as well, the main political elements involved in the effect of minimum wages, such as *government political orientation as regards policies, the dynamic of power, and the implicit characteristics of the minimum wage*, cannot be quantifiable and analysed in a statistical model because they engage in processes, contexts, and dominant political and social values.

The context and specifics of a case were assumed to be reflected in discourse which was formed in the minimum wage policy process allowing for related political and economic events occurred in a concerned period. In the same vein as Fischer (2003, p.45, quoted in Hill, 2009, pp.80-81), a set of relationships between political factors concerning minimum wage effects ‘can be constructed and discussed only through language’, and as Hall (1993, p.289, quoted in Hill, 2009, p.76) argues, ‘the terms of political discourse generally have a specific configuration that lends representative legitimacy to some social interests more than others, delineate the accepted boundaries of state action ... and defines the context in which many issues will be understood’. This recognition of the significance of discourse led to the use of an analysis of texts generated, particularly in the policy process. However, the stress on the significance of discourse here does not mean the negation of ‘the importance of the empirical testing of theories and hypotheses (Hill, 2009, p.12)’ in the minimum wage research. Rather, as Hill (2009, p.12) argues, it is ‘allowing for the possibility of alternative interpretations of evidence’.

Data and Material

The National Minimum Wage for the Year of OOOO: The Details of Deliberation and Decision [OOOO년도 적용 최저임금 심의·의결경위] was chiefly employed for the contextual analysis. It is the Korean Minimum Wage Council’s annual report on the minimum wage fixing process. It has been published since 1988 by the Minimum Wage

Council which was established under the Ministry of (Employment) and Labour [고용노동부] by Article 12 of the Minimum Wage Act [최저임금법] and is responsible for deliberation on the level of the minimum wage and other related issues. Although there are slight differences in the structure of contents every year, the report mostly consists of an overview of the Minimum Wage Commissioners, the functions of plenary sessions and sub-committees and the procedures of deliberation and decision, records of each plenary session and meeting held by each sub-committee, the process of negotiation on the rate of increase in the minimum wage, Employer Commissioners' request proposal, Employee Commissioners' request proposal, a report on the Commissioners' business field investigation, results of annual evaluation survey of minimum wage effects, and records of workshops held out of the fixing period. It provides detailed information on the composition of and changes in the Minimum Wage Commission members, the debate and events occurred in each plenary session and a meeting held by a sub-committee during the fixing period, interactions among labour, business and public interest representative members with regard to a specific issue addressed in the Commission, and the whole process that a decision was made and an issue was shelved for further discussion in the next fixing period. The report also includes, albeit in limited form, interviews among employers and employees which were obtained from the Commissioners' annual field investigation. Since the report informs of all of the issues addressed and discussed in the Commission, demands, opinions and behaviours presented by each Commissioners group, and related events held in and out of the Commissions, it provides a suitable textual data to look at the dynamic of power among the Commissioner groups in the minimum wage fixing process and the implicit characteristics of the minimum wage shaped by the dynamic, which were considered earlier in the newly proposed political economy framework as critical factors to explain the effects of the minimum wage. Despite the merit of the report as data, this was the first attempt to use it for studying the effects of the minimum wage in Korea.

In addition to the Minimum Wage Council's annual report, academic literature on economic and labour policies and on the relationships between government, business, and labour, government reports from the National Economic Advisory Council [국민경제자문위원회], the Ministry of Strategy and Finance [기획재정부], and the Ministry of

(Employment) and Labour [(고용)노동부], reports from the Confederation of Korean Industries [한국경영자총협회], the Confederation of Korean Government Employees' Unions [대한민국공무원노동조합총연맹], and trade unions, and newspaper articles were used, particularly to look at each government's political orientation as regards policy, which could not be covered by the Minimum Wage Council's annual report, and ultimately for constructing methodological triangulation of macro, meso, and micro levels of analysis, which was embedded in the alternative political economy framework proposed earlier.

Methods

Academic literature, reports from a variety of government departments and employers' and employees' organisations, and newspaper articles were comprehensively reviewed, and the Minimum Wage Council's annual reports were analysed by hand as below. Because it was needed to figure out the flow of contents in several layers as presented below, analysing it by hand was deemed more effective than using a data analysis programme which basically relied on the categorisation of themes and relations between them. Themes that emerged from the reports were first identified as the composition of human resource among the public interest members of the Minimum Wage Commission, roles and responsibilities of plenary sessions and sub-committees in the Minimum Wage Council and Commission, minimum wage fixing criteria, issues addressed and discussed by the representative members of the Commission, each representative group's involvement in the fixing process, and responses of frontline government, employers and employees which were from field surveys during each fixing period attached to the reports. Information from the data was rearranged under each theme for each five-year period. In this rearrangement, the theme of minimum wage fixing criteria was divided into debates on criteria and criteria practically used in the fixing process, and issues addressed and discussed in the Commission were reviewed by topic and graded importance on according to frequency of appearance and intensity of discussion. Debates on fixing criteria and issues raised in the Commission were also looked at by sub-committee in the Minimum Wage Council and Commission in order to identify the changes in roles and responsibilities of plenary sessions and sub-committees. Except for the composition of human resources among public interest

members in the Commission, all of the information presented under each theme and sub-theme were revealed by each representative group.

Face-to-face interviews which are commonly used as a useful data collection method in a qualitative analysis were not employed in this study. The main reason was that the report provided the full descriptions of the relevant processes, which allowed researchers to read the contexts of the rate fixing process and any continuity and disparity between the rates of increase. A more practical reason was time and resource restraints in completing this PhD research. As the last two waves of the KLIPS was released in January, 2016, almost one year behind schedule, and the multilevel discrete-time event history model for competing risks required extremely time-consuming preparatory work with the data, supplementary data collection by face-to-face interviews in addition to the analysis of the Minimum Wage Council's annual reports covering ten years was not feasible. The number of target interviewees and accessibility to them in terms of time, distance, expenses, and personal information were expected to be critical barriers for preparing and conducting interviews because they were the former representative members in the Minimum Wage Commission which consisted of 27 representatives, 9 for each group of employers, employees, and public interests, of whom each member served a three-year term. The limitation of this research which can be raised by the exclusion of face-to-face interviews are discussed in the Conclusion Chapter.

Conclusion

This chapter reviewed and discussed various theoretical perspectives on the minimum wage. Mainstream economics, particularly neoclassical theory and the monopsony model, have long dominated this field of research. These have attempted to improve their explanatory power in many ways, but inconsistency in empirical evidence, especially regarding employment and the exit from poverty, does not sustain their predictions about what the effects of minimum wages would be like. In more recent years, the Keynesian model has developed as an alternative account of the minimum wage effects, claiming a macroeconomic approach in the theoretical debate. However, it

is hard to explain spillover effects in the distribution of wages and their influence on wage dispersion within the Keynesian explanation. Setting the weakness of each branch of economic theories aside, the first and foremost fact is that all the economic explanations overlook the political attributes of minimum wages. Some political economy explanations relating to the minimum wage can be found, but they focus on what political factors as well as economic ones make people support or oppose the minimum wage, rather than how the political attributes of minimum wages are involved in shaping its effects on workers. Hence, an alternative political economy framework for the research of the minimum wage effects was proposed. The framework argues that the implicit characteristics of minimum wage policy are produced by a dynamic of power, which results in forming an equilibrium of power among stakeholders at a particular time and stage of the policy process, and the characteristics, which can be detected by the discourse constructed through the policy process, shape the effects of the minimum wage. Furthermore, minimum wage policy is likely to be punctuated mainly by government change unless a shock in macroeconomic conditions and/or radical mobilisation of public opinions occur. Following the logical reasoning of building the theoretical framework, this thesis conducted both quantitative analyses using statistical methods and contextual analysis with the review of the relevant literature and documents.

Notes

¹ This section incorporates not only theoretical models which strictly bear the fundamental elements of the neoclassical paradigm for the labour market economics but also ones that significantly modify the key elements and are named differently, such as monopsony models, search models, and efficiency wage models.

² Pettengill, John S. (1981). The Long-run impact of a minimum wage on employment and the wage structure. *In: MINIMUM WAGE STUDY COMMISSION. Report of the Minimum Wage Study Commission*, Vol. 6, 63-104. Washington DC: U.S. Government Printing Office.

³ It was originally written as a discussion paper at Northwestern University in 1989, published in 1998, and was presented at the LSE in 1990.

⁴ As Hayes summaries in his article, Sobel (1999) shows this by advancing a pressure group model of political influence based on Gary Becker's earlier work (1983, A Theory of Competition Among Pressure Groups for Political Influence. *The Quarterly Journal of Economics*, 98(3), pp.371-400). In the model, the political strength of unions was measured by union membership as a share of non-agricultural employment (a), the political power of business interests, by the top marginal corporate income tax rate (b), and a relative union/business ratio was calculated by dividing (a) by 100 per cent minus (b). Sobel found that the relative union/business ratio was strongly correlated with the real value of the minimum wage over the entire historical period in the United States.

⁵ As Jeju Island, the special self-governing province was included as a sampling unit area into the KLIPS from 2009, the indicators of an increase in the minimum wage and the employment rate of older employees for the first five-year period were computed for 7 metropolitan cities and 8 provinces.

⁶ Macros which contains syntax to read ascii file into MLwiN were used to specify a multinomial response model, to create new variables for the model, and to set up an initial simple competing risks model, as presented in The University of Bristol's (2006) training document for multilevel discrete-time event history analysis. An example of the macro used can be found in Appendix 2. Note that the reason why an initial simple model, rather than a full model for the analysis, was set up in the macro is that convergence problem often occurs when multiple covariates are included in a model at the same time.

⁷ In practice, the random-effects model for the second five-year period was not converged when the *duration* variable was uncentred or centred on its grand mean; and the model for the first five-year period was converged but produced highly inflated coefficients and standard errors with uncentred *duration* or centred one on its grand mean.

⁸ Adams & Neumark (2005) used imputed wages to identify a group affected by living wage and the other not affected in the analysis of employment effects. For our analysis, an imputation method which produces single values for cases with missing in order to rationally classify each case into a certain group is needed. EM imputation technique which imputes a value the most likely based on the values of other related variables is a plausible option when the rate of missing data is small, and the missing are completely at random (MCAR) or conditionally at random (MAR). The percentage of missing values of derived hourly wages for all employees in our datasets is below five per cent in each concerned year; missing data in some years are turned

out as MCAR by the Little's MCAR test, and in other years there is no evidence that the probability of a missing value depends on the variable that is missing (NMAR).

⁹ A wide range of equivalence scales exist, and the square root scale has been used by recent OECD publications which compare income inequality and poverty across countries (OECD, 2013b). See OECD (2013d). OECD Framework for Statistics on the Distribution of Household Income, Consumption and Wealth. OECD Publishing. for further details of household equivalence scales.

¹⁰ There are various ways to define and measure poverty depending on the purpose of research. The most commonly used approach is to compare each household's income adjusted for family size to median income. OECD, EU and many other countries use 60 per cent of median household income as the poverty threshold. See OECD (2013e). The OECD Approach to Measure and Monitor Income Poverty across Countries. *United Nations Economic Commission for Europe Conference of European Statisticians*. Geneva. for further details of poverty thresholds.

¹¹ The variable, *marital status*, were not included in the final model since other types other than 'married' rarely found among the cases included, which caused model convergence problem.

Chapter Six

The Factual Context for the Case Study of South Korea

Introduction

This chapter reviews the national minimum wage system and the labour market status of mature workers aged 50 and over in South Korea to provide background knowledge before presenting the analysis results. It includes a brief history of the minimum wage law, the current system, and the changes in its level and influence; and then, how potentially Korean older workers can be affected by the minimum wage is assessed through surveying their participation in the labour market, employment, unemployment, types of employment, industry sectors and occupations they are involved in, their wage levels and the level of income security guaranteed by their wage, and disadvantages they face in the workforce. Then, empirical studies about the effects of the minimum wage in Korea are also looked at in the last section, with a special interest in older workers.

The National Minimum Wage

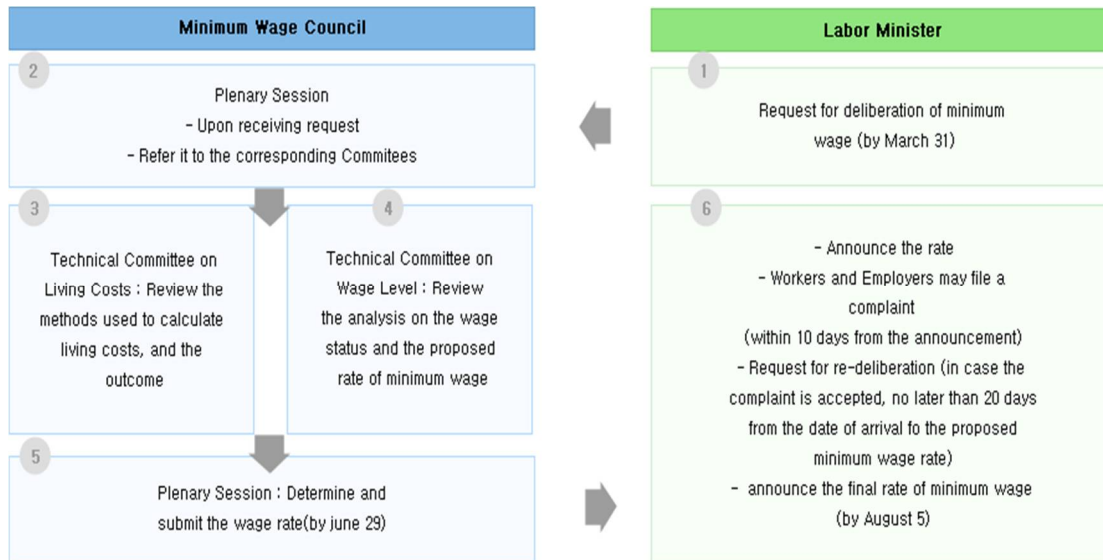
The statutory minimum wage in South Korea, with the purpose of ‘stabilising workers’ life and improving the quality of the labour force by guaranteeing a certain minimum level of wages to workers, thereby contributing to the sound development of the national economy (Minimum Wage Act Art.1)’ was enforced in 1988 under the influence of the massive eruption of the labour union movement in the late 1980s (Yun, A-L, 2014). The Labour Standards Act enacted in 1953 provided the legal grounds for the statutory minimum wage, but it had not been implemented until the end of 1986 under the Korean government’s judgement at that time that the statutory minimum wage was not acceptable to the national economy. The Minimum Wage Act was enacted in December 1986 and came into effect in January 1987, covering only manufacturing companies with ten employees and more. In 1988 the coverage of the minimum wage rate was extended into the mining and construction sectors with 10 employees or more

as well as manufacturing. In the following year, the coverage was further extended to all companies with ten employees or more; and after several amendments, it was finally applied to all companies or workplaces with one employee or more in 2000. The national minimum wage, however, became widely known to small and medium-sized employers and employees as well as the public in practice as the number of non-regular workers increased sharply in the mid-2000s influenced by the International Monetary Fund (IMF)'s bailout programme following the 1998 Korean financial crisis. All employees as defined in the Labour Standards Act, regardless of their employment status or nationality, currently benefit from the statutory minimum wage, except domestic workers, the seamen and those with a very limited working capacity due to their physical and mental disabilities. But those engaged in an apprenticeship for less than three months can be legally paid 10% less than the hourly rate of the minimum wage. From 2007, the subminimum wage was introduced for those engaged in surveillance or intermittent work who had been exempt from the minimum wage due to their exclusion from the application of the Labour Standard Act under Article 63, Clause 3 of the Act.¹

The minimum wage rate is fixed annually by the government based on the proposal the Minimum Wage Commission [최저임금위원회] submits. The Commission consists of 27 representatives, 9 for each group of workers, employers, and public interests, and should put forward a newly proposed rate to the government by the 29th of June every year. The government should announce a new minimum wage rate by the 5th of August in the same year, and a new rate takes effect from the 1st of January of the following year (Figure 6.1).² The Minimum Wage Commission is outwardly a tripartite organisation with division of power among the three groups, but the public interest members who are experts, mostly in economics or business administration, with profound knowledge and experience, such as public officials, professors, and researchers of an officially authorised research institute, actually take the lead in fixing a new rate (Yun, A-L, 2014). Meanwhile, workers' living costs, the wages of similar workers, labour productivity, and income distribution ratio are stated in the Minimum Wage Act as the minimum wage fixing criteria to be taken into account. However, in many cases the main reasons for the low level of the minimum wage provided by the

government are economic conditions including the inflation rate and the capacity of employers to pay especially in the case of small and medium-sized firms. This implies that economic conditions are, in practice, more critical than the indicators stated in the law.

Figure 6.1 Process of Minimum Wage Deliberation and Determination in South Korea



Source: The Minimum Wage Council (<http://www.minimumwage.go.kr>)

The current (2015) minimum wage rate is 5,580 KR won (£ 3.32 or \$ 5.08 at the exchange rate of February 2015). Compared to 462.50 KR won (£ 0.37 or \$ 0.63 at the then average yearly exchange rate) in 1988 when the minimum wage was introduced, the wage rate has risen by twelve times during the past 27 years. The rate of increase ranges from 4.9 per cent to 18.8 per cent excluding the three exceptionally low or high rates in three years. The average rate is 9.7 per cent which is slightly higher than 8.3 per cent, the median, owing to the exceptional cases (Table 6.1). Looking at the increases sanctioned by the government, the average uplift rate was 13.8 per cent during the Roh, Tae-Woo government (1988-1993) which represented the conservative ruling party but ushered in a new ‘Democratic Era’ in Korea, 8.1 per cent during, so called, ‘Moon Min’ government, a civilian government in which Kim, Young-Sam took office (1993-1998), 9.0 per cent during the Kim, Dae-Jung government (Government of the People, 1998-

Table 6.1 Changes in Minimum Wage Rates in South Korea (KRW/GBP/USD; %; thousand persons)

Year	Hourly minimum wage rate*			Increase (%)	Number of workers covered (A)	Number of beneficiary workers (B)	Influence rate**
	KRW (₩)	GBP (£)	USD (\$)				
2015	5,580	3.32	5.08	7.1	18,240	2,668	14.6
2014	5,210	3.00	4.95	7.2	17,734	2,565	14.5
2013	4,860	2.84	4.44	6.1	17,510	2,582	14.7
2012	4,580	2.57	4.06	6.0	17,048	2,343	13.7
2011	4,320	2.43	3.90	5.1	16,479	2,336	14.2
2010	4,110	2.30	3.55	2.75	16,103	2,566	15.9
2009	4,000	2.01	3.13	6.1	15,882	2,085	13.1
2008	3,770	1.87	3.42	8.3	15,351	2,214	13.8
2007	3,480	0.00	0.00	12.3	14,968	1,784	11.9
2005.09 ~ 2006.12	3,100	1.76	3.24	9.2	14,584	1,503	10.3
2004.09 ~ 2005.08	2,840	1.52	2.77	13.1	14,149	1,245	8.8
2003.09 ~ 2004.08	2,510	1.20	2.19	10.3	13,631	1,035	7.6
2002.09 ~ 2003.08	2,275	1.17	1.91	8.3	13,216	849	6.4
2001.09 ~ 2002.08	2,100	1.12	1.68	12.6	7,152	201	2.8
2000.09 ~ 2001.08	1,865	1.00	1.44	16.6	6,692	141	2.1
1999.09 ~ 2000.08	1,600	0.93	1.42	4.9	5,031	54	1.1
1998.09 ~ 1999.08	1,525	0.79	1.28	2.7	5,136	23	0.4
1997.09 ~ 1998.08	1,485	0.64	1.06	6.1	5,350	124	2.3
1996.09 ~ 1997.08	1,400	0.90	1.47	9.8	5,240	127	2.4
1995.09 ~ 1996.08	1,275	1.01	1.58	9.0	5,381	103	1.9
1994.09 ~ 1995.08	1,170	0.96	1.52	7.8	4,864	103	2.1
1994.01 ~ 1994.08	1,085	0.88	1.35	8.0	4,916	102	2.1
1993	1,005	0.83	1.25	8.6	5,045	228	4.5
1992	925	0.67	1.18	12.8	4,620	392	8.5
1991	820	0.63	1.12	18.8	4,556	393	8.6
1990	690	0.55	0.97	15.0	4,386	187	4.3
1989	600	0.55	0.89	26.3	3,053	328	10.7
1988	462.50	0.36	0.63	-	2,267	94	4.2

Source: Korea Minimum Wage Council (<http://www.minimumwage.go.kr>)

Notes: Until the year 2002, the number of workers covered refers to regular employees only.

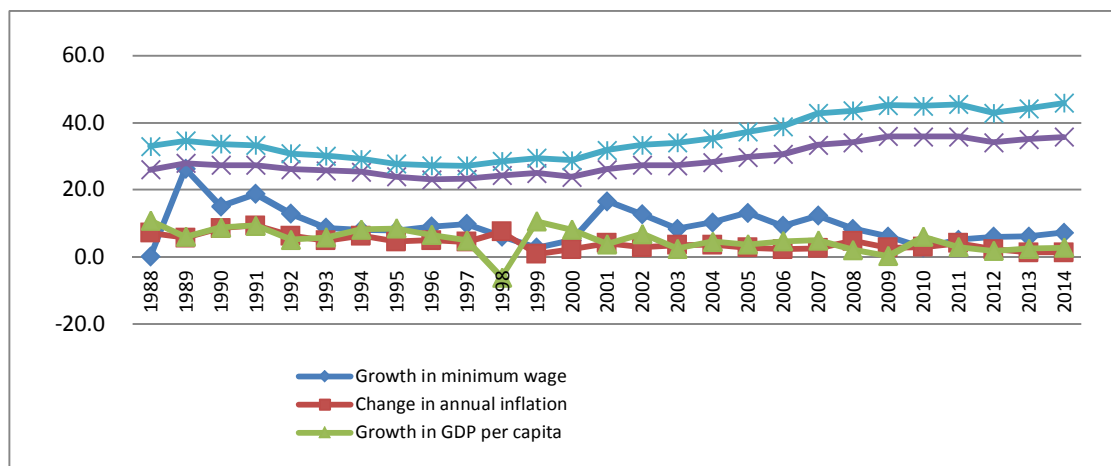
* Hourly minimum wage rates in KRW were converted into GBP and USD at the average yearly exchange rate for each year, except 2015 for which the average monthly exchange rate for February, 2015 was used.

** Influence rate = (B)/(A)*100.

2003), which was the first regime taken by the democratic party in Korean history of politics, 10.6 per cent during the Roh, Moo-Hyun government, another democratic regime (2003-2008), 5.2 per cent during the Lee, Myung-Bak government (2008-2013), which claimed to stand for neoliberalism, and 7.4 per cent for four years of the Park, Geun-Hye government (2013-2017) which showed a strong conservative inclination.

As shown in Figure 6.2, minimum wage rates have increased at rates which are mostly higher than annual inflation rates and GDP per capita growth in South Korea. The rates have been over 40 per cent of the median wage of full-time workers since 2007. This is analogous to the level at which most countries set their minimum wages; however, based on the mean wage of full-time workers, the minimum wage has still remained at a little higher than 30 per cent. The fact that the level of minimum wages relative to the mean wage is much lower than the level relative to the median implies the magnitude of wage inequality. The minimum wage is also short of the minimum cost of living in South Korea. While the minimum cost of living per month for households with two members, which the Ministry of Health and Welfare set in 2015, was 1,051,048 KR won (£ 625.3 or \$ 956.9 at the exchange rate of February, 2015), the monthly earnings, which a minimum wage worker was able to earn with working for 8 hours a day, 21 days a month, was 937,440 KR won (£ 557.7 or \$ 853.5 at the exchange rate of February, 2015), 89.2 per cent of the minimum cost of living.

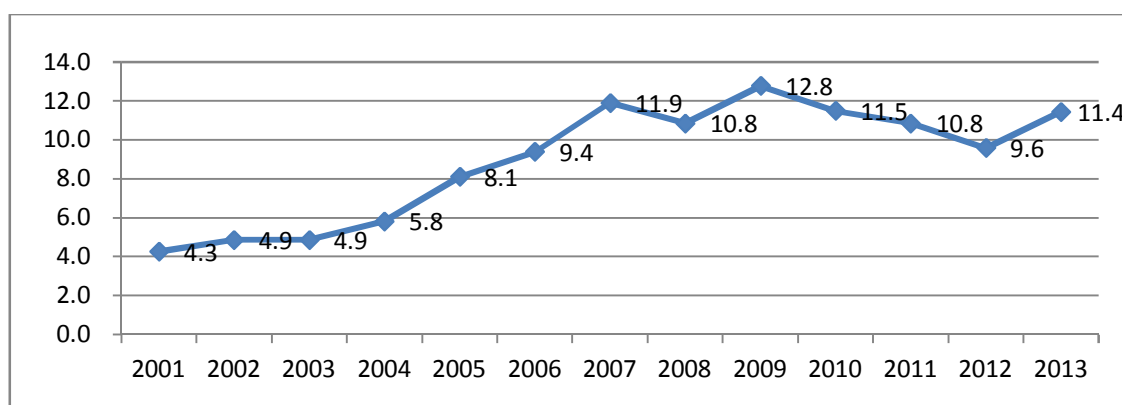
Figure 6.2 Growth in Minimum Wage, Annual Inflation (CPI) & GDP per Capita, and Minimum Wage Relative to Average Wage of Full-Time Workers in South Korea, 1988-2013 (%)



Source: Korea Minimum Wage Council (<http://www.minimumwage.go.kr>) & OECD.Stat (<http://stats.oecd.org/Index.aspx>); Figures in Appendix 3.

The ‘influence rate’ which refers to the ratio of workers benefiting from the minimum wage increase relative to the workers covered as a whole shows that the minimum wage has obviously extended its influence, in particular, since the early 2000s (Table 6.1). The rates remained at a very low level during the 1990s with the exception of the several years after 1989 when the coverage of the minimum wage was extended from companies in manufacturing, mining, and construction to all companies with 10 employees or more has been over 10 per cent since September of 2005. This is attributed ostensibly to the further expansion of the coverage to all companies with one employee or more in 2000; but it is most likely that the sustained increases in the influence rates since the early 2000s is owed largely to the rise in the number of precarious, low paid jobs caused by labour market flexibilization after the economic recession in 1998.

Figure 6.3 The Share of Employees Paid Less than the Minimum Wage in South Korea, 2001-2013 (%)



Source: Minimum Wage Council, (2014), p.142

Under the Minimum Wage Act, an employer who fails to comply with the obligation to pay at least minimum wage is expected to be punished by imprisonment of up to three years or a fine not exceeding 20 million KR won (£ 11,899.2 or \$18,208.3 at the exchange rate of February 2015), or both. But there is neither the official figures of noncompliance nor specific measures of a government crackdown on it, which implies that noncompliance is rarely caught and sanctioned. Even when employers paying less than the minimum wage are caught, they are scarcely ever penalised. The Ministry of Employment and Labour caught 832 cases in which organisations paid less than the

minimum wage in 2014, but only 16 were fined (People's Solidarity for Participatory Democracy [참여연대], 2015). According to People's Solidarity for Participatory Democracy (2015), a Korean citizen campaign group, although 33 businesses violated twice, and 2 companies three times within 2014, only one among the habitual violating organisations was subject to judicial action. The level of noncompliance can be weighed up by the share of wage earners paid less than the minimum wage, and the share has increased by 2.7 times, from 4.3% in 2001 to 11.4% in 2013 (Figure 6.3). According to the employer representative' proposal submitted to the Minimum Wage Commission, 98.7 per cent of wage earners paid below the minimum wage is employed in small and medium-sized businesses with 300 employees or under, and 88.5 per cent of them works for small-scale establishments with 30 employees or under, such as convenient stores and restaurants (The Minimum Wage Council [최저임금위원회], 2014).

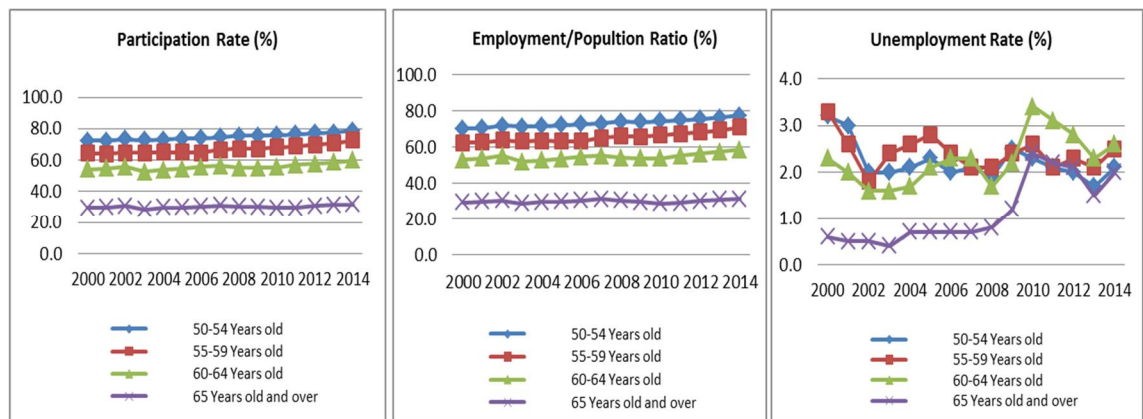
Older Workers in the Labour Market

Older workers are one of the most vulnerable groups in the labour market in South Korea, particularly in terms of insecure employment, low pay, and a high poverty rate. The fact that there is a big gap between 53 years old, the average age of retirement from a lifetime major workplace (The National Statistical Office of Korea [통계청], 2013) and 71.1 years old for men and 69.8 years old for women, the average effective retirement age from the labour force which is the second highest among the OECD countries (OECD, n.d.) suggests that many older people are economically active and employed in a new workplace after retiring from their lifetime jobs, and at the same time that it is highly possible that they are in low-quality, low paid jobs due to the difficulty of career changes.

The labour force participation rate and the employment-to-population ratio among older workers aged 50 and over are very high and have steadily grown, except during the credit card lending crisis in 2003 and the financial crisis in 2008-09, while the unemployment rate has remained low at around 2-3 per cent. As shown in Figure 6.4, the labour force participation rates have increased from 72.5 per cent in 2000, 73.8 per cent in 2005 to 78.8 per cent in 2014 among those aged 50-54, from 64.1 per cent in

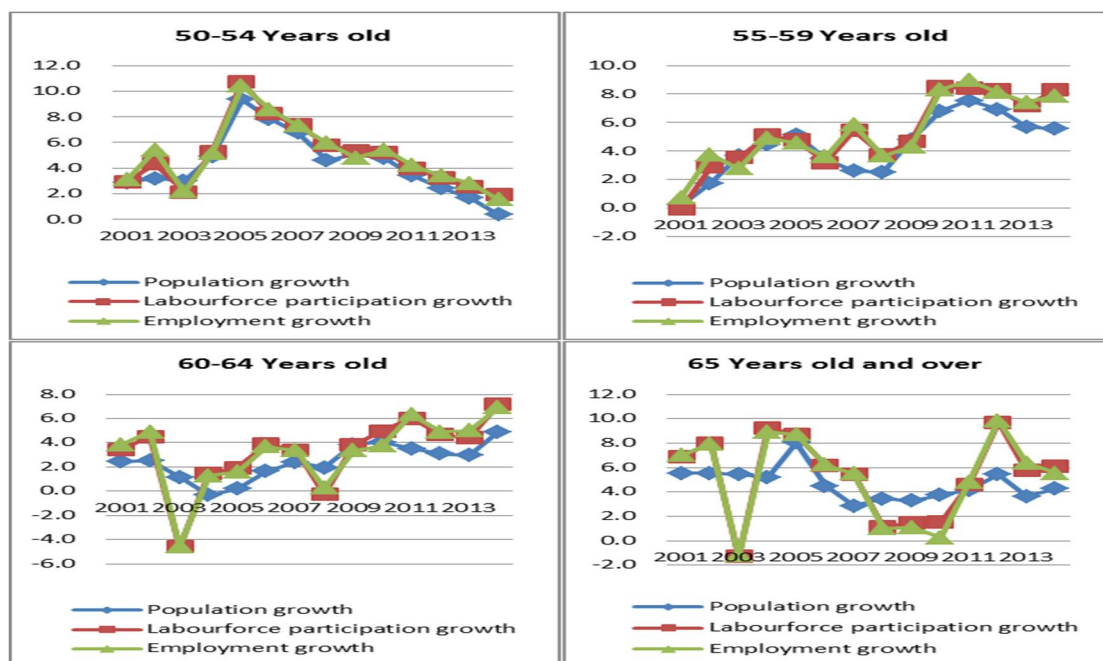
2000, 64.9 per cent in 2005 to 72.6 per cent in 2014 in the 55-59 age group, from 54.3 per cent in 2000, 54.5 per cent in 2005 to 59.8 per cent in 2014 among the 60-64 age group, and from 29.6 per cent in 2000, 30 per cent in 2005 to 31.9 per cent in 2014 among those aged 65 and older. The employment rates have also risen from 70.2 per cent in 2000, 72.1 per cent in 2005 to 77.2 per cent in 2014 in the 50-54 age group, from 62.2 per cent in 2000, 63.1 per cent in 2005 to 70.8 per cent in 2014 in the 55-59 age group, from 53 per cent in 2000, 53.4 per cent in 2005 to 58.3 per cent in 2014 in the 60-64 age group, and from 29.4 per cent in 2000, 29.8 per cent in 2005 to 31.3 per cent in 2014 among those aged 65 and older. Such growth might be attributed to the rapid population ageing and the growing portion of the older population. However, Figure 6.5 shows that the growth rate of the labour force participation and of employment among those aged 50 and older surpassed the rate of increase in the population of the age group, except the two financial crisis periods. This implies that there has been substantial rise in the labour force participation and in employment among people aged 50 and older, especially since 2005.

Figure 6.4 Changes in Labour force Participation, Employment and Unemployment among Workers Aged 50 + in South Korea, 2000-2014 (%)



Source: The National Statistical Office of Korea, Economically Active Population Survey [경제활동인구조사], Each Year; Figures in Appendix 4.

Figure 6.5 Changes in the Growth Rate in Population, Labour force Participation and Employment among Workers Aged 50+ in South Korea, 2001-2014 (%)

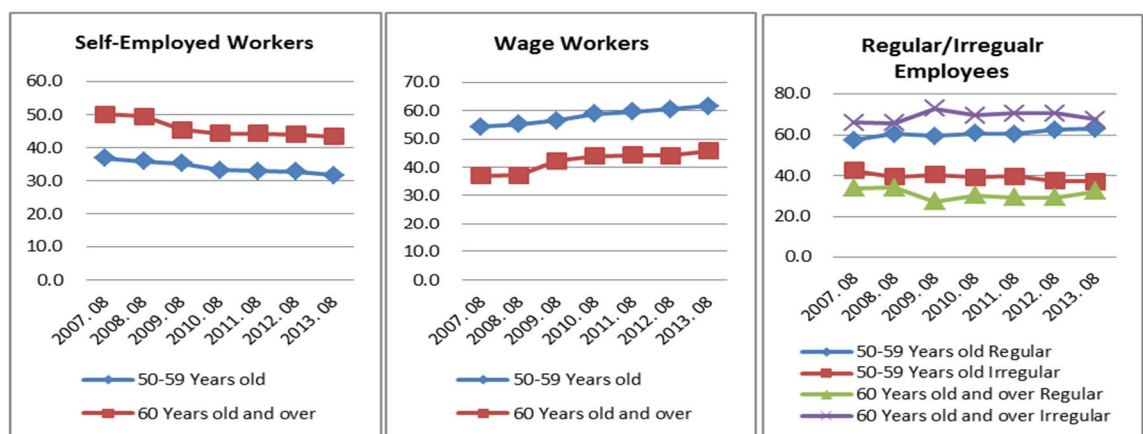


Source: The National Statistical Office of Korea, Economically Active Population Survey [경제활동인구조사], Each Year, Author's calculation; Figures in Appendix 5.

The high rates of the labour force participation and of employment among older workers in South Korea have been largely due to the high proportion of the self-employed and/or workers engaging in agriculture. But, in recent years the number of the self-employed has significantly fallen while the number of wage workers has appreciably risen among people aged 50 years and older (Figure 6.6). The self-employed have decreased by 5.3 percentage points, from 36.9 per cent in 2007 to 31.6 per cent in 2013, among people aged 50-59 years old and also by 6.7 percentage point, from 50.1 per cent to 43.4 per cent, among those aged 60 years and over in the same period. On the contrary, employees have increased during the same period from 54.3 per cent to 61.6 per cent among people aged 50-59 years old and from 37.1 per cent to 45.8 per cent among those aged 60 years and over. However, older workers are more likely to engage in irregular employment. The proportion of irregular workers is around 40 per cent among older workers aged 50-59 years old and over 65 per cent among those aged 60 years and over, which is much higher than around 30 per cent, the proportion of irregular workers among those aged 15-64 years old. In addition, recalling 53 years old, the average age of retirement from a lifetime workplace, the changes in the type of

employment implies that older workers who have once retired from a workplace and seek a job are more likely to have an irregular one. While the proportion of regular workers has risen from 57.4 per cent in 2007 to 62.9 per cent in 2013 and the percentage of irregular workers has fallen from 42.6 per cent to 37.1 per cent in the same period among those aged 50-59 years old, those percentages among those aged 60 years and over have developed in reverse, being reduced from 34.0 per cent in 2007 to 32.5 per cent in 2013 in regular workers and increased from 66.0 per cent to 67.5 per cent in irregular workers in the same period.

Figure 6.6 Changes in Employment Status of Workers Aged 50+ in South Korea, 2007-2013 (%)

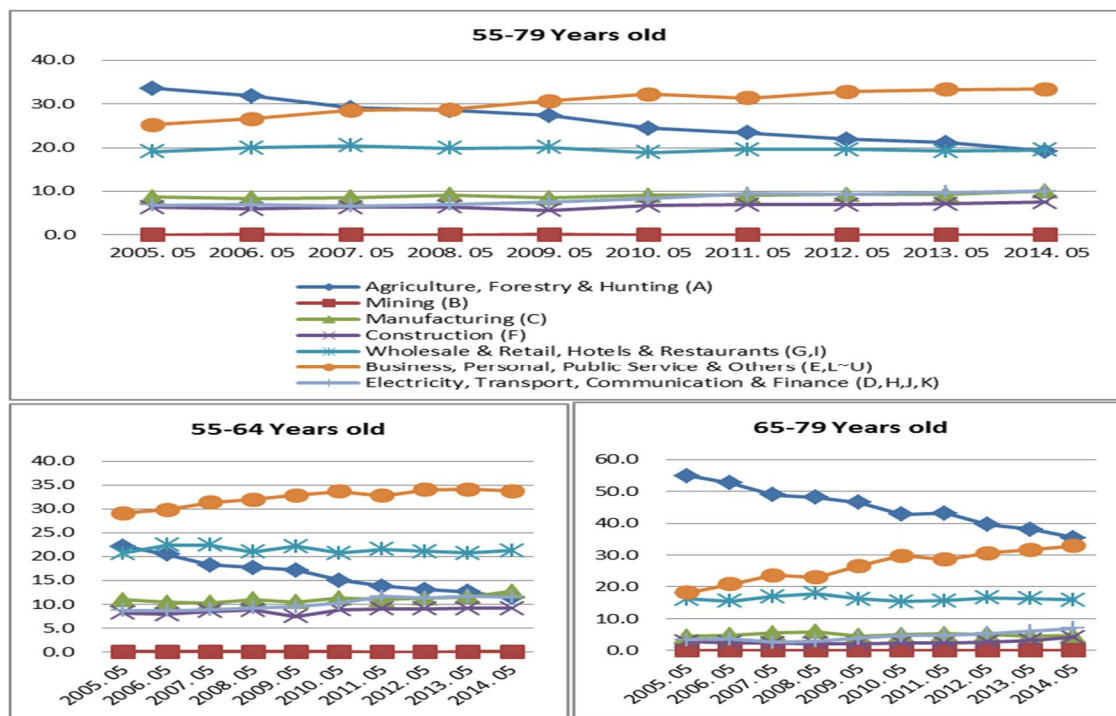


Source: The National Statistical Office of Korea, Supplementary Results (by Type of Employment and for Non-wage Workers) of the Economically Active Population Survey [경제활동인구조사 (근로형태별, 비임금근로자) 부가조사], Every August in Each Year, Author's calculation; Figures in Appendix 6.

Looking at the employment of older workers by industry, there are considerable changes in the proportion of those engaging in agriculture and in business, personal, public service and others, whereas the proportion of people engaged in wholesale and retail, hotels and restaurants remains steady at around 20 per cent (Figure 6.7). The percentage of workers aged 55-79 years old who are engaged in agriculture has dramatically decreased from 33.6 per cent in 2005 to 19.2 per cent in 2014. In contrast, the proportion of those engaging in business, personal, public service and others has significantly increased from 25.3 per cent to 33.5 per cent during the same period. We may not be able to affirm that these changes mean that the number of low-wage employees has increased among older workers since business, personal, public service and others cover a wide range of industries, including sewerage, waste management,

and environmental industry (E), real estate and leasing service (L), professional scientific and technical service (M), business facilities management and support services (N), public administration and social security (O), education service (P), health and social work (Q), arts, sports, recreation related service (R), repair and other personal services (S), undifferentiated employment & production activities of households for own use (T), and activities of extraterritorial organisations (U). However, Jung, S-M (2011) assumes, based on her analysis of the employment features among older workers with the raw data of the Economically Active Population Survey in 2010, that the increase in business, personal, public services and other services among older workers since 2005 is attributed largely to the growth in business facilities management and support services (N), public administration and social security (O), and health and social work sector (Q), all of which provide mostly low-wage jobs.³

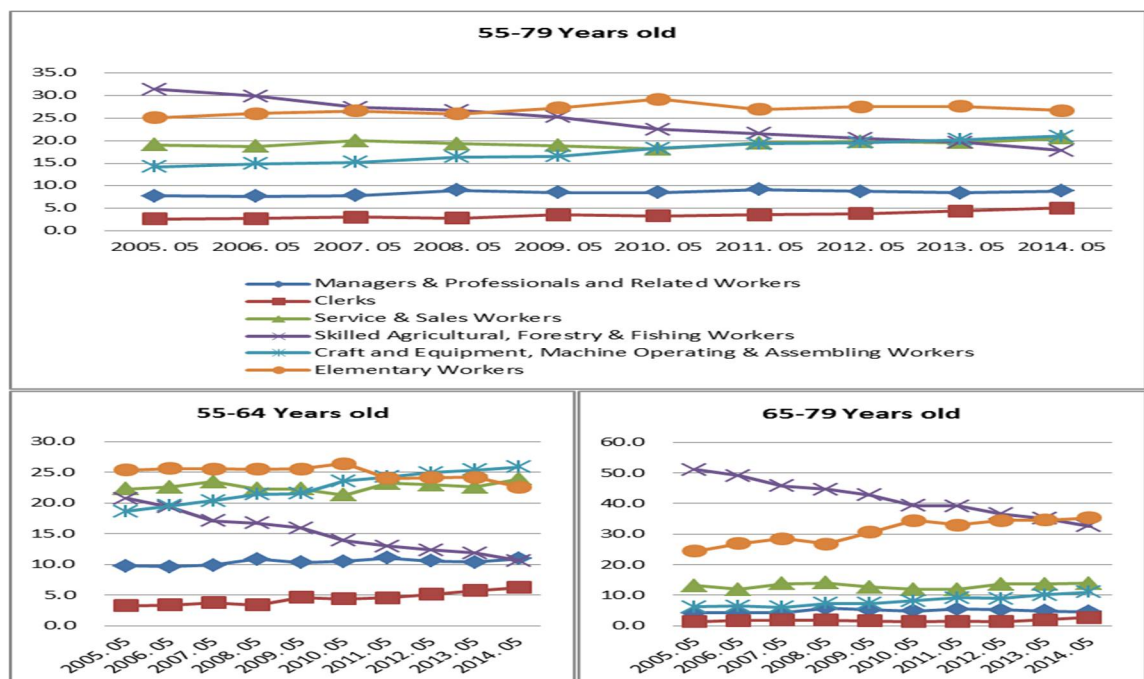
Figure 6.7 Changes in Industrial Composition among Workers Aged 55-79 in South Korea, 2005-2014 (%)



Source: The National Statistical Office of Korea, Supplementary Results (for the Old Population) of the Economically Active Population Survey [경제활동인구조사 (고령층) 부가조사], Every May in Each Year, Author's calculation; Figures in Appendix 7.

In the same vein, the most remarkable change in occupational composition among older workers is that the proportion of skilled agricultural, forestry, and fishing workers has reduced from 31.3 per cent in 2005 to 17.8 per cent in 2014 while the percentage of craft and equipment, machine operation and assembly workers has risen from 14.2 per cent to 21.0 per cent during the same period, and the proportion of elementary workers has been the most in the composition since 2009 (Figure 6.8). This implies the influx of older workers into low-wage jobs. According to Jung, S-M's (2011) cross analysis of occupations and industries where older workers were in 2010, 82.8 per cent of older workers in business facilities management and support services (N) was elementary workers, and of those, 88.9 per cent was occupied with building cleaning or security services. Further, the transportation (H) occupied the most (81.0 per cent) of the category, electricity, transportation, communication and finance in industrial composition among workers aged 55-79, and 83.0 per cent of older workers in transportation sector was simple machine operation workers.

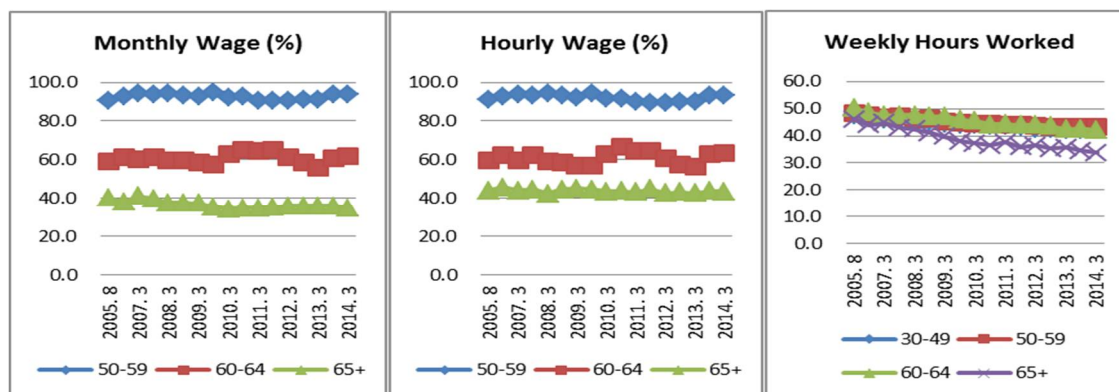
Figure 6.8 Changes in Occupational Composition among Workers Aged 55-79 in South Korea, 2005-2014 (%)



Source: The National Statistical Office of Korea, Supplementary Results (for the Old Population) of the Economically Active Population Survey [경제활동인구조사 (고령층) 부가조사], Every May in Each Year, Author's calculation; Figures in Appendix 8.

The wage level of older employees aged 50 and over sharply falls with age. Nam, J-R's (2014) analysis of older workers in the labour market with raw data of the supplementary results (by Type of Employment) of the Economically Active Population Survey [경제활동인구조사 (근로형태별) 부가조사] provides the average wages of age groups, which allows to find the relative level of wages among older workers (Figure 6.9). The average monthly wage of employees aged 50-59 years old was 2,408,000 KR won (£ 1,353.0 or \$1,912.4 at the then monthly exchange rate) in March 2014, 94.0 per cent of the average monthly wage of employees aged 30-49 years old. However, the average monthly wages among those aged 60-64 years old and 65 and over were 61.7 per cent and 34.9 per cent respectively in the same year. The average hourly wages of older workers, which are calculated by dividing the average monthly wage by hours worked because people rarely know about their hourly wage and monthly pay is collected as information about wage in most of survey data in Korea, are comparable with the average monthly wages. It should be noted that older employees aged 50-64 years old have worked longer hours than employees aged 30-49 years old until very recently, and thus their hourly wages have been less than those aged 30-49 years old, except since March 2013 among employees aged 60-64. On the other hand, the average weekly hours for which employees aged 65 and older worked has been significantly reduced, and the gap of weekly hours worked between employees aged 65 and over and those aged 30-49 has been growing.

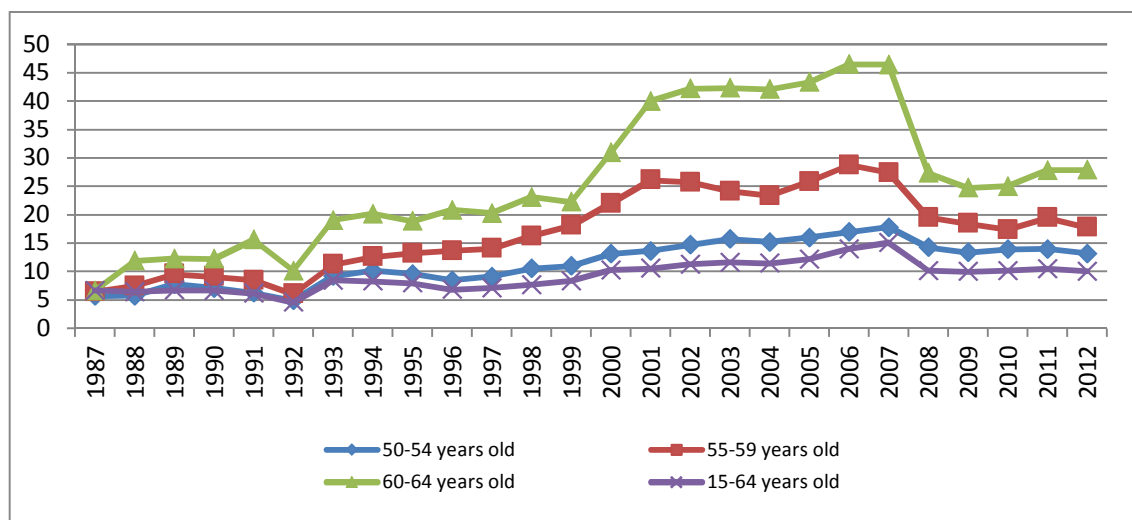
Figure 6.9 Changes in the Ratios of Monthly Wage & Hourly Wage among Employees 50+ to among Those Aged 30-49 and Weerklly Hours Worked by Age Group in South Korea (% , hrs)



Source: The National Statistical Office of Korea, Supplementary Results (by Type of Employment) of the Economically Active Population Survey [경제활동인구조사 (근로형태별) 부가조사], Each Year; Recalculated by author based on figures from Nam, J-R (2014), pp.15-16; Original figures in Appendix 9.

Figure 6.10 shows the percentage of older workers earning less than 50 per cent of the median wage among wage workers aged 15 years old and over. It informs of the level of income security among older workers which is generated from their wages. In 1987, the proportion of low paid older employees aged 50-54 years old, 55-59 years old, and 60-64 years old was 5.69 per cent, 6.43 per cent, and 6.64 per cent, respectively. They were the same with or slightly below 6.64 per cent, the proportion of low paid employees aged 15-64. However, the number of the low paid has grown rapidly, in particular, among older workers. In 2012, the percentage of employees aged 50-54 years old, 55-59 years old, and 60-64 years old earning less than 50 per cent of the median wage was 13.17 per cent, 17.74 per cent, and 27.9 per cent, respectively, while the percentage of employees aged 15-64 years old was 10.02 per cent. The proportion of low paid older employees aged 50-64 years old has sharply decreased after the peak for the period from 2000 to 2007. However, it should be also noted that the gap in the proportion had been much larger during the peak between older employees and employees aged 15-64, and the gap after the peak still remains higher, except those aged 60-64 years old, than before the peak. Moreover, since the data analysed in Figure 6.10 concern only employees in organisations with more than 10 staff, it is likely that the proportion of older employees earning less than 50 per cent of the median wage is larger in practice.

Figure 6.10 Changes in the Proportion of Older Employees Earning Less Than 50% of the Median Wage in South Korea (%)



Source: Survey on Labor Conditions by Type of Employment [고용형태별 근로실태조사], each year; recited from Ahn, J-K & Yoo, S-H (2015); Figures in Appendix 10.

This brief review of Korean older workers in the labour market so far does not provide convincing information on the proportion of minimum wage workers among older employees, the proportion of older employees among minimum wage workers, or changes in those proportions.⁴ However, figures on their employment status, industrial composition, and occupational composition indicate that older workers have become more prevalent in low paid jobs, and the figures regarding their wages indirectly support the assumption that more older workers are becoming affected by the minimum wage. In particular, recalling the fact that the level of minimum wage rates has been about 40 per cent of the median wage of full-time employees, the wage level among older employees and the change in the proportion of older employees earning less than 50 per cent of the median wage imply that older employees not only occupy significant portion of minimum wage workers but also contribute to the growth of the share of those paid less than the minimum wage.

One thing to add as regards the rise of low paid older workers is that this may be interlinked with the increase in the unemployment of young people and in the rise in female labour force participation. As the number of high-quality jobs have significantly decreased, influenced by the IMF bailout programme, young people who largely received higher education, unlike their parent's generation, began to delay entering the labour market until they got a permanent job in a large firm or in government. Most small and medium-sized firms which have no capacity to meet young people's needs have been confronted by labour shortages and tended to hire older people and women. As the labour market has dramatically changed since the early 2000s, and men's employment has become more insecure, many women who were anxious about financial shortages in their families started to engage in the labour market. This seems to have brought about a significant change in the perception of adult children's support for their parents. Women's participation in the labour market triggered by the concern over family income provided the adult children with a good excuse to refuse financial support and caregiving for their parents. Accordingly, it would be assumed that older people tend to be placed in a situation in which they have no choice but to take care of themselves and participate in paid jobs much more actively than their predecessors.

Further to the basic statistical information on Korean older workers, it would be useful for understanding their status in the labour market to look at the scope and degree of disadvantages and discrimination that they face. In Korea, the Act on Prohibition of Age Discrimination in Employment and Elderly Employment Promotion [고용상 연령차별 금지 및 고령자고용촉진에 관한 법률] was enacted in 2008, amending the former Employment Promotion for the Aged Act [고령자고용촉진법]. This Act prohibits employers from discriminating against individuals on the basis of age regarding recruiting, hiring, salary, education and training, placement, transfer, promotion, retirement, and dismissal. Under the Act, an employee who has experienced discrimination by age may file a petition with the National Human Rights Commission [국가인권위원회]. The Commission investigates claims and recommend corrective action to employers. If the employers fail to comply with the Commission's advice without a justifiable reason, and the discrimination is substantial, the Commission notifies the cases to the Ministry of Employment and Labour [고용노동부] with non-binding advisory opinions. The Ministry of Employment and Labour can issue an order to employers to rectify the discriminatory treatment. Failure to comply with the Ministry's order may result in an administrative fine of up to 30 million Korean won (about £ 20,000 or \$ 25,000 at the exchange rate of June, 2019), and discriminatory treatment in recruiting and hiring, in particular, may cause a criminal fine of up to 5 million Korean won (about £ 3,400 or \$ 4,200 at the exchange rate of June, 2019), regardless of the petition process through the National Human Rights Commission. Since the Act on Prohibition of Age Discrimination in Employment and Elderly Employment Promotion [고용상 연령차별금지 및 고령자고용촉진에 관한 법률] was implemented, the number of petitions regarding age discrimination committed by employers which were filed in the National Human Rights Commission has significantly increased from 62 cases in 2008 to 138 cases in 2009, 196 cases in 2010, and 151 cases per year on average between 2011 and 2013 (The National Human Rights Commission of Korea [국가인권위원회], 2014). 1,214 cases of 16,912 petitions which have been filed for discrimination with the Commission until 2014 were age discrimination, and employment-related cases including recruiting (368 cases, 39.7%), hiring (303 cases, 32.7%), wage (12 cases, 1.3%), non-wage reward (4 cases, 0.4%),

training (9 cases, 0.9%), placement (46 cases, 5.0%), promotion (16 cases, 1.7%), retirement (38 cases, 4.1%), dismissal (65 cases, 7.0%) and others (26 cases, 2.8%) accounted for 76.5 per cent (928 cases) of all age discrimination cases (The National Human Rights Commission of Korea [국가인권위원회], 2014).

Unfortunately, there is no data which allow us to overview the characteristics of age discrimination in the Korean labour market. Moreover, studies of age discrimination relating to employment and labour have recently emerged in the line of research on ageism which started to be developed since 2010 (Kim, M-J and Yoon, K-Y, 2017). Kim, D-S and Mo, S-H (2011) analysed 52 cases investigated by the National Human Rights Commission [국가인권위원회] to find causes of age discrimination in employment. They found that ageism, including stereotypes and discriminative attitudes, is the most prominent and widespread factor to affect age discrimination. Kim, D-S and Mo, S-H (2012) also surveyed 300 personnel managers in small and medium-sized firms to figure out how personnel managers' stereotypes of older workers affect the managers' discriminatory perceptions of older workers with regard to employment, and found that the higher degree of stereotypes a personnel manager had, the stronger his discriminatory perceptions of older workers were in terms of employment.

Empirical Studies about the Minimum Wage Effects

The effects of the minimum wage had rarely been explored in South Korea before the end of the 1990s and began in earnest after the mid-2000s. A few empirical studies include the effects of the minimum wage on older employees, particularly on their job retention or new hires. Findings are not consistent as the ones in other countries are.

The existing studies about the minimum wage effects in Korea (Table 6.2) focus largely on the employment effect, but there is no consensus on the issue among the research findings. Kim, Y-S, Gwon, H-J, and Kim, J-J (2004), Lee, S-K (2007), Lee, B-H (2008), Ahn, T-H (2009), Kang, D-U (2010), Kim, J-Y (2011), Kim, Y-S (2011), and Hwang, S-J (2015) reported no significant disemployment effects or positive effects. Kim, Y-S, Gwon, H-J, and Kim, J-J (2004) who conducted a time-series analysis using monthly data from the Economically Active Population Survey [경제활동인구조사] for the

period of January 1988 to March 2004 found that the minimum wage had no significant effect on employment and even increased employment among women and some age groups depending on explanatory variable manipulation. Lee, S-K (2007) who examined the change in employment by job and by organisation as a consequence of the change in the real minimum wage, using the supplementary data of the Economically Active Population Survey [경제활동인구조사 부가조사] for the period of 2000-2006 and the Workplace Panel Survey(WPS) [사업체 패널조사] for the period of 2003-2004 also found neutral or positive employment effects, based on a fixed-effects model as well as a simple regression model. Similarly, Lee, B-H (2008), using the supplementary data (by Type of Employment) of the Economically Active Population Survey [경제활동인구 (고용형태별) 부가조사] and the Economically Active Population Survey [경제활동인구조사] for the period of 2004-2005, concluded that the minimum wage did not have disemployment effects, in particular, among women, younger workers, and older workers, from his analysis with difference-in-difference of the change in employment among employees who earned a minimum wage and those who made a little more than the minimum wage. Ahn, T-H (2009) explored the odds of job retention among wage workers after an increase of the minimum wage through a linear probability model with fixed-effects using the Korean Labour and Income Panel Study (KLIPS) [한국노동패널조사] for the period of 2001-2007 and did not find any considerable negative effects on employment. Kang, D-U (2010) examined the effect of the minimum wage on the employment rate of employees with disabilities using Survey on the Employment Status of the Disabled in Business 2008 [2008년 사업체 장애인고용 실태조사]. He found through a quasi-experimental analysis with dummy variables and time-series analysis that if a minimum wage raises the wage of employees with disabilities by 1 percentage point, their employment will decrease by 0.58 percentage point in the short term, which was not a considerable amount, and moreover, no significant disemployment effect was found in the long term. Kim, J-Y (2011), who conducted an analysis of the odds of job retention among wage workers after an increase in the minimum wage using the KLIPS [한국노동패널조사] for the period of 1998-2008 and probit models plus a linear probability model with fixed-effects and random-effects, also found no statistically significant disemployment effect. Likewise, Kim, Y-S (2011), who examined

Table 6.2 Empirical Studies about the Effects of the Minimum Wage in South Korea

Study	Data sources	Outcome measures/Method	Main results	Other remarks
<u>Employment</u>				
Kim, Y-S, Gwon, H-J, & Kim, J-J 2004	Economically Active Population Survey (monthly) [경제활동인구조사 (월별)], Jan. 1988 – Mar. 2004	Time-series analysis: OLS (Ordinary least squares) model, GLS (Generalised least squares) model, ARMA (Autoregressive-moving-average) model	No significant employment effect and even positive employment effects among women and some age groups, such as employees aged 25-54 years old and <u>those 55 and older</u> , depending on explanatory variables, the ratio of minimum wages to mean wages and logarithms of minimum wages	
Lee, S-K 2007	Supplementary data of the Economically Active Population Survey [경제활동인구조사 부가조사], 2000-2006; Workplace Panel Survey (WPS) [사업체 패널조사], 2003-2004	Fixed-effects models; Simple regression model	Neutral employment effects among the employees as a whole and even positive effects among the low paid depending on explanatory variables, logarithm of a real minimum wage divided by a real mean wage each year by job unit and logarithms of a real minimum wage	
Lee, B-H 2008	Economically Active Population Survey [경제활동인구조사] & supplementary data (by type of employment) of the Economically Active Population Survey [경제활동인구조사 부가조사 (고용형태별)], 2004-2005	Quasi-experimental analysis: Difference-in-difference	No statistically significant positive or negative effects on job retention and new hires among women, younger workers aged 15-24 years old and <u>older workers aged 55 years old and over</u> as well as the employees as a whole	
Jeong, J-H & Lee, B-H 2008	Economically Active Population Survey [경제활동인구조사] & the Wage Structure Survey [임금구조기본통계조사], 2000-2006	Time-series cross-section analysis: Pooled OLS model, Fixed-effects model, PCSE (Panel-Corrected Standard Errors) model; Quasi-experimental analysis: Difference-in-difference	Negative employment effects among younger workers aged 20-24 and <u>older workers aged 55 and older</u> compared to positive effects among those aged 25-54 years old; No statistically significant positive or negative effects on job retention and new hires in any age group as well as among the employees as a whole	

Nam, S-I 2008	Data on caretakers of 132 apartment complexes around the capital area, 2007	Reduced form model: Random-effects model	Increase in wage by over 10 % but decrease in employment by 3.5 % and working hours by 13.5% caused by the extended enforcement of the minimum wage to surveillance or intermittent work	Those engaged in surveillance or intermittent work only
Ahn, T-H 2009	Korean Labor and Income Panel Study (KLIPS) [한국노동패널조사], 2001-2007	Fixed-effects model	No significant employment effect	
Kim, W-Y 2010	Time-series data from the Occupational Employment Statistic (OES) [산업·직업별 고용구조조사], 2000-2008	Time-series analysis: Arellano-Bond difference GMM(Generalised Method of Moments)	1.6% decrease in employment among female workers aged 15-24 years old ; 1.1% decrease among male workers aged 15-19 years old; no significant employment effect among younger workers as a whole	Younger employees aged less than 25 years old only
Kang, D-U 2010	Survey on the Employment Status of the Disabled in Business 2008 [2008년 사업체 장애인고용 실태조사]; Unofficial inside data of the Minimum Wage Council and the Ministry of Employment & Labor, 2000-2008	[Short-term effect] Quasi-experimental analysis: Multiple regression model [Long-term effect] Time-series analysis: Correlation between employment rate among the disabled and increase rate in the minimum wage	In short term, 0.58% decrease in employment among the disabled by 1% increase in their wage, which is not considerable amount; but , in long term, no significant disemployment effect	Employees with disabilities only
Kim, J-Y 2011	KLIPS, 1998-2008	Quasi-experiment analysis: Pooled Probit model, Fixed-effects model, Random-effects model	No statistically significant employment effects	

Kim, Y-S 2011	Economically Active Population Survey (monthly) [경제활동인구조사 (월별)], Jan. 1990 – Apr. 2010	Time-series analysis; OLS model, GLS (Generalised Least Squares) model, ARMA (Autoregressive-Moving-Average) model	No significant disemployment effect and even positive effects on employment among those 15-19 years old and employees aged 25-54 (10% significance level) during the period of 1990-2011; positive employment effects after 2000 (5% significance level), except among <u>those aged 55 and older</u>	
Kim, D-I 2012	Survey on Labor Conditions by Type of Employment [고용형태별 근로실태조사], 2008-2010	Time-series analysis: First-difference	6.6% reduction in new hires among the bottom 5% wage bracket; 3.8% reduction among of male younger workers aged below 29 years old at the bottom 5-15% wage bracket (5% significance level); 2.7% reduction among male employees aged 30-54 years old at the bottom 5-15% wage bracket (5% sig. level); 2.0% (10% sig. level) and 2.9% (5% sig. level) reduction among female workers aged below 29 years old at the bottom 5 % and 5-15% wage brackets, repectively; 34.7% reduction among <u>female older employees aged 55 and older</u> at the bottom 5% wage bracket (10% sig. level); 9.3% reduction in small companies with below 5 employees (10 % sig. level); 13.8% reduction in mining and manufacturing sector (5% sig. level); and 11.7% reduction in whole sale & retail and restaurant & hotels sector (1 per cent sig. level), all of which are caused by 1% increase in the minimum wage	
Kim, M-S, Kim, Y-M, & Park, T-S 2013	KLIPS, 2000-2008	Probit model	3.7% decrease in employment among aged 24 years old or less with a high school deploma by a 10% increase in the real minimum wage	

Kim, Y-M 2014	Supplementary data (August) of the Economically Active Population Survey [경제활동인구조사 8월 부가조사], 2001-2014	Probit model	Increase in wage among the employees as a whole by increase in the minimum wage, higher increase in service sector than in manufacturing; Reduction in odds of becoming an employee on contract for one or more years, higher reduction in manufacturing than in service sector	Employees in manufacturing and service industries only
Hwang, S-J 2015	Wage Structure Survey [임금구조기본통계조사], 2009-2012 & 2002-2008	Fixed-effects model	No statistically significant employment effects	
<i>Wage Mobility</i>				
Kim, J-G 1999	Wage Structure Survey [임금구조기본통계조사], 1988-1995	Simulation analysis	Less than 0.03% increase in the share of the bottom 20% in the wage distribution until 1993; no changes of the share after 1993	
Kang, B-G & Sung, H-Y 2009	KLIPS, 2001-2007	Wage growth model	Increase in both the average wages of the lowest, two wage brackets and the household earnings of, in particular, the lowest household earned income bracket	
Jeong, J-H 2011	Survey on Labor Conditions by Type of Employment [고용형태별 근로실태조사], 2007-2009; KLIPS, 1998-2008	Comparison between minimum wage rates and hourly wages calculated by ordinary monthly wages and hours worked; OLS model, Fixed-effects model	Spikes in the minimum wage and spillovers into the upper wage brackets with reduction in the ratio of the 10 th and 90 th percentiles of the wage distribution	
Kim, Y-M & Kim, M-S 2013	Supplementary data (August) of the Economically Active Population Survey, 2004, 2010	Counterfactual wage distribution model	An ambiguous effect on female wage inequality	Female employees only
Seong, J-M 2014	Local Area Labor Force Survey [지역별 고용조사], 2008-2012	OLS models, Fixed-effects models	Reduction in wage inequality for lower and middle wage brackets with the size of reduction effects declined from lower to middle wage brackets	

<i>Family income & Poverty</i>			
Jeong, J-H 2005	KLIPS, 2003	Ratios of beneficiary working households per household income bracket	More beneficiaries among the higher household income brackets than among the bottom
Lee, S-K 2013	KLIPS, 2005-2010	Multi-level, multi-nominal logit model	More likely to lift the working poor out of poverty and not adversely related to their job retention
Seo, J-W & Jeong, J-O 2014	KLIPS, 2003-2008	Binary probit model with random-effects	Higer increase in minimum wage, less odds of falling down below the poverty line

employment effects for twenty years from January 1990 to April 2010 using a time-series analysis with monthly data of the Economically Active Population Survey [경제활동인구조사], reported that there have not been disemployment effects since the minimum wage was introduced in South Korea, and rather that positive effects were found after 2000. Most recently, Hwang, S-J (2015), who examined the change in employment among low-wage workers by sex, age, education, organisation size, and industrial sector, using the Wage Structure Survey [임금구조기본통계조사] for two periods, 2009-2012 and 2002-2008, found that when the minimum wage increased, no decline in employment was statistically significant.

However, Jeong, J-H and Lee, B-H (2008), Nam, S-I (2008), Kim, W-Y (2010), Kim, D-I (2012), Kim, M-S, Kim, Y-M, and Park, T-S (2013), and Kim, Y-M (2014) all reported adverse employment effects. Using panel data which were rebuilt with the Economically Active Population Survey [경제활동인구조사] and the Wage Structure Survey [임금구조기본통계조사] for the period of 2000-2006, Jeong, J-H and Lee, B-H (2008) found that the minimum wage had negative effects on employment among younger workers aged 20-24 and older workers aged 55 and older whereas it had positive employment effects among those aged 25-54. They also examined the minimum wage impact on job retention and new hires through a quasi-experimental model using panel data which were rebuilt with the supplementary data of the Economically Active Population Survey [경제활동인구조사 부가조사] and the Economically Active Population Survey [경제활동인구조사] for the period of 2004-2005, and reported that there was no statistically significant positive or negative effects in any age group as well as among wage workers as a whole. Nam, S-I (2008) analysed the employment effects of the introduction in 2007 of the minimum wage rate for those engaged in surveillance or intermittent work. He used data about caretakers who worked in 132 apartment complexes around the capital area and found that the newly enforced rate for surveillance or intermittent work increased their wage by over 10 per cent but decreased employment by 3.5 per cent. Kim, W-Y (2010) explored the effects of the minimum wage on employment among younger employees aged 15-24 and those aged 15-29. He conducted a time-series analysis of the data which were rebuilt by the researcher for 15 regions from 2000 to 2008 using the Occupational Employment

Statistic (OES) [산업·직업별 고용구조조사] and reported that a 10 per cent increase in the minimum wage reduced employment by 1.6 per cent among female younger workers aged 15-24 and by 1.1 per cent among male employees aged 15-29 while disemployment effects were not found among younger workers as a whole. Using the Survey on Labour Conditions by Type of Employment [고용형태별 근로실태조사] for the period of 2008-2010, Kim, D-I (2012) explored whether an increase in the minimum wage decreased the hiring of new employees among the low paid and found that an 1 per cent increase in the minimum wage was likely to restrain new hires among the bottom 5 per cent wage bracket in the wage distribution by 6.6 percentage point at a 10 per cent significance level. He added that an 1 per cent increase in the minimum wage reduced new hires of male younger workers aged below 29 years old at the bottom 5-15 per cent wage bracket by 3.8 per cent at a 5 per cent significance level, of male counterparts aged 30-54 years old by 2.7 per cent at the same significance level, of female older workers aged below 29 years old at the bottom 5 per cent wage bracket by 2.0 per cent at a 10 per cent significance level, of female counterparts aged 55 and older by 34.7 per cent at the same significance level, of female employees aged below 29 years old at the bottom 5-15 per cent wage bracket by 2.9 per cent at 5 per cent significance level, of small companies with below 5 employees by 9.3 per cent at a 10 per cent significance level, of mining and manufacturing sector by 13.8 per cent at a 5 per cent significance level, and of wholesale and retail and restaurant and hotels sector by 11.7 per cent at a 1 per cent significance level. Kim, M-S, Kim, Y-M, and Park, T-S (2013) examined employment effects of the real minimum wage by the size of region, age, and education, using the KLIPS for the period of 2000-2008 and a probit model. Their findings show that a 10 per cent increase in the real minimum wage reduced the probability of employment among those aged 24 or less with a high school diploma by 3.7 per cent at a 1 per cent significance level. Kim, Y-M (2014) explored the effects of the minimum wage on wage distribution and employment in manufacturing and service sectors, using the supplementary data (August) of the Economically Active Population for the period of 2001-2014 and a probit model. The findings show that an increase in the minimum wage raised the wage level in both sectors with higher rise in service industry than in manufacturing but reduced the odds of becoming an employee on contract for one or more years with higher decline in manufacturing than in the service

sector.

Another research stream has focused on whether minimum wage policy has wage or earnings distribution effects or poverty-alleviating effects as its own purpose. Kim, J-G's (1999) simulation analysis is an early study about the distribution effect of the minimum wage. It used the Wage Structure Survey [임금구조기본통계조사] for the period of 1988-1995 and found that the minimum wage increased the share of the bottom 20 per cent wage bracket in the distribution of the total earnings by less than 0.03 percentage point, and the change in the share after 1993 was near to zero. He concluded that the minimum wage made no significant distributional improvement in wages, and the near-zero effect after 1993 was due to the rate of increase in the minimum wage which fell into 8.6 per cent in 1993 from 18.2 per cent on average for the previous four years and was kept on under the wage growth rate. However, subsequent studies show different findings as regards the distributional effects. Using the KLIPS for the period of 2001-2007, Kang, B-G and Sung, H-Y (2009) compared the distribution effects of the Earned Income Tax Credit (EITC) and the national minimum wage. In terms of the minimum wage effect, they found that the minimum wage significantly increased both the average wages of the lowest, two wage brackets and the household earnings of the lowest household earned income bracket. They concluded that the importance of the statutory minimum wage in Korea as the means of income support for the working poor was not weakened, particularly as long as the eligibility and the subsidy rate of the EITC were highly limited. Jeong, J-H (2011) reported similar findings and verified the existence of spillovers in the minimum wage through a comparison between minimum wage hourly rates and hourly wages calculated using the information on employees' ordinary monthly wages and hours worked from the Survey on Labour Conditions by Type of Employment [고용형태별 근로실태조사] for the period of 2007-2009 and also of spillovers into the upper wage brackets in the wage distribution using the KLIPS for the period of 1998-2008. He found that increases in the minimum wage reduced the proportion of the 10th and 90th percentiles of the wage distribution and raised mainly the wage of the middle percentile. Seong, J-M (2014), who used the Local Area Labour Force Survey [지역별 고용조사] for the period of 2008-2012, also found that the minimum wage reduced wage inequality for lower and

middle brackets of the wage distribution even though the effect declined as the wage rank was higher from lower to middle.

Jeong, J-H (2005), Lee, S-K (2013), and Seo, J-W and Jeong, J-O (2014) focused on family income distribution and poverty alleviation effects. Jeong, J-H (2005) explored whether the minimum wage affects the working household income distribution, using the KLIPS of 2003. He found that the percentage of beneficiaries from an increase in the minimum wage among the bottom household income bracket was much lower than the one of their counterparts among the higher income brackets and concluded that minimum wage policy was a blunt instrument to improve income distribution among the working household. However, subsequent studies provided conflicting results. Lee, S-K (2013) examined whether an increase in the minimum wage alleviates poverty among the working poor. Using the KLIPS for the period of 2005-2010 and the multilevel multinomial logit model, he analysed the transition from the working poor to the working non-poor, the unemployed, or the economically non-active and found that an increase in the minimum wage was more likely to lift the working poor out of poverty as well as not adversely related to job retention. Seo, J-W and Jeong, J-O (2014) also studied the effects of minimum wage policy on reducing poverty rates using the KLIPS for the period of 2003-2008. They concluded, based on their results from a binary probit model, that a higher hourly minimum wage can reduce the odds of an individual's falling down below the poverty line.

Conclusion

This chapter has reviewed the national minimum wage and older workers in the labour market in South Korea. The statutory minimum wage which was introduced in 1987 for only manufacturing companies with ten employees or more has been extended to all organisations with one employee or more since 2000 after several amendments. It is adjusted annually by the government's approval for a rate which the Minimum Wage Commission, a tripartite consultation body consisting of workers, employers, and public interest representatives proposes in the light of criteria stated in the Minimum Wage Act and national economic conditions. The level of the minimum wage is controversial

because it varies considerably with reference wages, which implies wage inequality. Meanwhile, older workers are a vulnerable group in the Korean labour market. Although a growing number of older workers have been economically active, many of them take part in irregular work, mainly in business facilities management and support service, public administration and social security, health and social work, and wholesale and retail and hotels and restaurants, mostly as elementary workers, service and sales workers, or simple machine operating workers. The wage level of older employees aged 50 years old and over dramatically decreases with age, and the percentage of older employees paid less than 50 per cent of the median wage significantly exceeds the one of their counterparts aged 15-64 years old by 3.15 per cent at least and by 17.88 per cent at most. All these facts refer to the high probability of the increase in the proportion of older employees who are paid low and further likely to be affected by the minimum wage. Despite their vulnerability in the labour market, older workers have not been taken much attention in the research of the minimum wage effects. Some empirical research includes the effects of the minimum wage on older workers, mostly on their employment, in Korea but the findings are not consistent with each other.

Notes

¹ Those engaged in surveillance or intermittent work were legally allowed to be paid 30 per cent less than the minimum wage in 2007, 20 per cent less from 2008 to 2011, and 10 per cent less from 2012 to 2014. As the curtailment clause applied to them was removed from the Minimum Wage Act, they have to be paid a normal minimum wage rate from 1st of January 2015.

² From 1994 to 2006, a new minimum wage rate had been announced by the 5th of August every year and taken effect from the 1st of September in the same year.

³ In particular, the increase in public administration and social security seems to be due to ‘the Work for Hope [희망근로]’, a government-funded employment project which provides low-wage, temporary jobs to people aged 18 years old and over who are in a low-income family and vulnerable in employment.

⁴ In order to get the information on the portion of minimum wage workers among older employees or the percentage of older employees among the minimum wage workers, raw data of supplementary results (by the Type of Employment) of Economically Active Population Survey should be analysed. However, there is an access limit to raw data, and thus the review of Korean older workers in the labour market is based on data provided by Korean Statistical Information Service (KOSIS) and by previous study which was analysed with raw data.

Chapter Seven

The Effects of the Minimum Wage on Older Workers in South Korea

Introduction

This chapter presents the results of quantitative analyses which explored the two research questions, *how the minimum wage affects the distributions of wages and family earnings, employment and exits from in-work poverty among older workers* and *whether different rates of increases in the minimum wage have different effects among older workers*. As mentioned in Chapter Five, the two questions were simultaneously examined by subtopic for employees aged 55 and older, using the KLIPS and statistical methods and comparing the two five-year periods of Roh, Moo-Hyun government (2003-2008) with 10.6 per cent of average rate of increase in the minimum wage and Lee, Myung-Bak government (2008-2013) with 5.2 per cent of average growth rate. After reviewing the basic characteristics of the cases selected from the KLIPS, the empirical results are presented in each subtopic section. The statistical methods and variables used for each statistical analysis are summarised in Appendix 11.

Basic Characteristics of Data

Table 7.1 shows the number and main characteristics of employees aged 55 and older selected from wave 7 in 2004 to wave 16 in 2013 of the KLIPS. The number of cases significantly increased since 2009 as a result of the supplementation of households in twelfth wave. A remarkable feature of the sample is that the ratio of female older employees has evidently grown while the ratio of male counterparts has declined since 2009. This corresponds with another feature that the proportion of temporary jobs has risen while the proportion of permanent jobs fallen since 2009. These are largely due to the combination of the replacement of irregular jobs for permanent ones and women's participation in the labour market, particularly among 40s and older having much financial burdens in households after the global financial crisis in 2008 which

accelerated a big change in Korean economy and labour market. The mean and median ages which were slightly higher for the second five-year period than for the first five-year period reflect the gradual adjustment in the labour market to rapid population ageing in South Korea. However, in practical terms, it is likely that older workers flowed into non-regular, temporary jobs by government-driven public work projects after the financial crisis have led the small increase in the average ages among older employees aged 55 and older. In terms of the level of education obtained, the percentage of those with a bachelor's degree visibly decreased in the second five-year period compared to the first five-year period while the ratios of those with high school diploma and less, except no education, were kept relatively stable over the ten years. This could mean that facing a career transition, older workers with a bachelor's degree were more likely to choose at a point in time a transition to self-employment or an exit from the labour market based on their better financial preparation for later life, rather than to take low paid jobs in the harsher labour market conditions after the global financial crisis in 2008. In contrast, those with qualifications below a bachelor's degree seem to have been more likely to seek being employed, even in low paid jobs, for financial reasons. Such speculation is based on the assumption that low paid jobs are dominantly open for older workers in a very transitional period of their careers. The large gaps between the mean and the median of hourly wages and of household earnings per capita and the high proportion of those affected by the minimum wage and of working poor, which are possibly even underestimated with the loss of cases in calculation required to use two different datasets for one year, support the assumption to some degree and imply the financial needs prevailing among older employees. The majority of the older employees were married. However, the proportion of married employees decreased whereas the share of separate, divorced, or widowed counterparts increased, notably in the second five-year period. The older employees were chiefly householders, and their proportion was noticeably high in two metropolitan cities, Seoul and Busan, and Gyeonggi-do, a large province nearest to Seoul, in which various small and medium-sized firms have developed. The number of family members among the older employees' households also decreased slightly during the second five-year period.

Table 7.1 Characteristics of 55+ Employees, 2004-2013

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Case	457	463	486	521	579	774	828	897	1,001	1,070
Sex (%)										
Male	67.0	68.7	68.1	64.3	64.9	62.0	62.0	59.5	59.4	59.3
Female	33.0	31.3	31.9	35.7	35.1	38.0	38.0	40.5	40.6	40.7
Age										
Mean	60.70	60.84	60.77	60.89	61.03	61.89	61.97	62.04	61.96	62.26
Median	60.00	60.00	59.00	59.00	60.00	60.00	60.00	61.00	60.00	61.00
Education (%)										
No Education	9.4	9.1	8.0	6.7	6.2	6.3	6.0	5.2	4.3	3.4
Elementary School	33.5	32.4	29.8	31.3	29.0	32.6	31.4	31.4	28.3	27.9
Middle School	17.9	21.0	20.2	20.9	19.9	21.6	23.2	23.4	23.6	23.3
High School	26.5	24.2	28.6	26.9	29.7	28.0	27.3	27.4	30.4	31.1
2-year College	0.4	1.1	1.2	1.3	2.4	1.7	2.2	3.0	3.1	3.1
University	9.4	9.5	9.5	10.4	10.7	7.8	7.9	7.0	7.4	8.3
Graduate School	2.8	2.8	2.7	2.5	2.1	2.1	2.1	2.5	2.9	2.9
Marital Status (%)										
Never Married	0.2	0.2	0.0	0.0	0.2	0.9	1.2	0.9	1.2	0.8
Married	80.3	80.1	79.0	78.5	78.4	74.4	74.6	73.9	74.1	75.1
Separate/Divorced/Widowed	19.5	19.7	21.0	21.5	21.4	24.7	24.2	25.2	24.7	24.0
Householder (%)	78.6	79.0	80.0	79.1	78.8	78.2	77.8	76.3	75.4	74.7
N of Household Members										
Mean	3.1	3.1	3.1	2.2	2.9	2.8	2.7	2.6	2.6	2.7
Median	3.0	3.0	3.0	2.0	3.0	3.0	3.0	2.0	2.0	3.0
Type of Employment (%)										
Permanent	60.8	58.5	58.4	57.6	55.4	49.1	47.8	46.2	48.0	47.3
Temporary	14.7	14.5	16.0	15.7	18.7	24.9	25.6	26.1	27.4	28.4
Daily Hire	24.5	27.0	25.5	26.7	25.9	26.0	26.6	27.8	24.7	24.3
Region (%)										
Seoul	26.3	26.8	28.0	25.7	27.3	24.7	23.7	22.3	22.7	22.2
Busan	11.2	11.0	9.7	9.6	9.3	9.3	9.2	9.4	10.1	9.1

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Region (%) Continued										
Daegu	5.9	6.5	5.6	5.6	4.7	4.7	6.2	6.2	5.0	6.0
Daejeon	3.7	4.1	3.9	4.4	4.0	3.1	3.4	4.1	3.7	2.9
Incheon	4.8	4.3	5.3	6.0	5.9	4.9	5.9	5.6	5.8	6.4
Gwangju	3.7	5.0	4.7	4.2	2.8	2.1	2.5	2.7	2.3	2.7
Ulsan	1.8	2.2	2.5	1.9	2.6	2.3	2.3	2.2	3.0	2.8
Gyeonggi-do	17.7	17.3	17.9	18.2	18.7	16.9	15.6	17.9	18.5	18.7
Gangwon-do	1.3	0.9	1.2	1.7	1.6	2.5	2.3	2.1	2.3	2.6
Chungcheongbuk-do	3.3	2.6	3.9	3.8	3.6	3.5	4.0	4.8	4.2	3.9
Chungcheonnam-do	2.0	2.4	2.1	3.3	3.5	4.4	5.4	5.5	5.1	5.3
Jeollabuk-do	6.3	5.0	4.3	5.0	3.8	4.3	3.7	3.8	3.8	4.1
Jeollanam-do	2.4	2.8	2.1	2.5	2.6	4.0	3.4	2.6	2.8	3.1
Gyeongsangbuk-do	3.9	3.2	3.3	1.7	2.9	4.5	5.0	4.1	4.3	3.9
Gyeongsangnam-do	5.7	6.0	5.6	6.3	6.9	8.8	7.2	6.5	6.2	5.7
Jeju	-	-	-	-	-	0.1	0.2	0.2	0.3	0.5
Hourly Wage (₩)^a										
Mean	6,864.64	6,941.23	7,367.03	8,532.00	8,059.75	7,475.22	7,817.29	8,261.84	8,615.62	9,273.03
Median	3,873.67	4,606.53	4,798.46	5,150.35	5,289.91	4,975.64	5,374.28	5,719.77	6,184.69	6,909.79
Yearly Household Earnings per Capita in a Household (₩)^a										
Mean	16,534,977	19,091,334	19,932,451	22,331,819	19,275,246	21,298,915	21,804,941	24,749,189	24,470,673	25,850,291
Median	12,908,588	15,900,000	16,161,017	17,464,846	15,467,214	16,970,563	17,320,508	19,890,914	20,859,650	21,550,000
Proportion Affected by Minimum Wage^b	19.7	24.9	25.1	27.8	23.1	20.8	25.9	26.7	25.1	24.7
Proportion of Working Poor^c	25.4	24.6	28.8	25.3	27.8	26.9	28.6	27.2	23.9	21.9

Source : KLIPS data Wave6(2003) ~ Wave17(2014)

Note: a. '₩' refers to Korean currency, won.

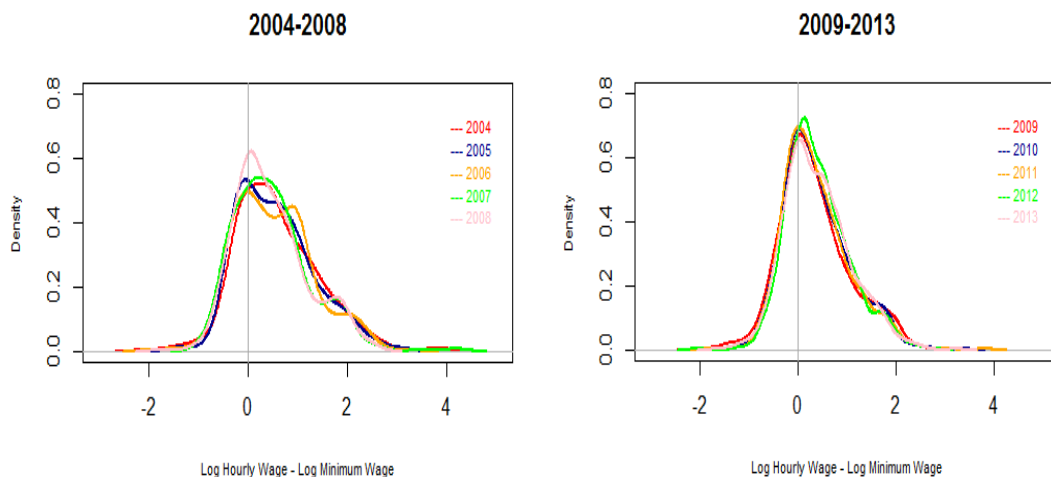
b. This is the proportion of those who were employed in the concerned year and were paid in the previous year less than the minimum wage rate of the concerned year.

c. The proportion is the percentage of those who were employed in the concerned year and whose yearly household income per capita calculated by the information collected one year later was less than 60 per cent of its median for all employees.

Minimum Wage Effects on the Wage Distribution

The effects of the minimum wage on the distribution of wages among older employees were examined with respect to three sub-questions, whether an increase in the minimum wage creates a spike at the point of the minimum wage, whether the increase has a spillover effect, raising wages of those who were already paid above a new minimum wage rate, and whether the increase reduces the wage gap in the wage distribution among older employees. A spike at the point of the minimum wage was graphically assessed by plotting the kernel density estimates of log hourly wage minus log minimum wage for each employee aged 55 and older for each year, where a zero indicated that the employee earned the minimum wage rate of the year. The hourly wage for each individual was derived with monthly pay and average weekly working hours $((\text{monthly pay} * 10,000 * 12) / (\text{weekly working hours} * 52.1))$. Figure 7.1 shows that spikes at or around the minimum wage were consistently found over the years in each five-year period. This suggests that the minimum wage had some effects to raise the wages of those who previously earned less than the minimum wage of the year unless the rate of increase in the minimum wage was lower than the rate of increase in bargaining wages, and if there was no clue as to a sharp rise in newly created jobs paying around the minimum wage.

Figure 7.1 Wage Distribution of 55+ Employees, 2004-2008 and 2009-2013



Source: KLIPS data wave7(2004) ~ wave16(2013)

Despite the spike at the minimum wage, no distribution was either truncated or thinned out in the left tail in both five-year periods so that a large proportion of older workers remained being paid less than the minimum wage in all the years. This might be attributed mostly to noncompliance of small businesses hiring mature workers even though it cannot be verified with evidence since there are no official data to identify the size of noncompliance in South Korea. Another noteworthy factor with regard to the large portion of older employees below zero in the wage distribution would be the application of reduced minimum wage rates to those employed for surveillance or intermittent work from 2007 to 2014. Considering the fact that surveillance or intermittent work belongs to elementary jobs in which over 25% of older workers aged 55-79 are engaged as seen in Chapter Six, a significant number of mature workers paid a bit less than the minimum wage are expected to have relied on the curtailed minimum wage rates legally approved. A further consideration could be the unconventional avoidance of paying a minimum wage, particularly among transportation companies. Many employees engaged in transportation, such as taxi drivers, have to pay a great deal of their daily earnings to their companies and then they can keep the rest. Although employers offer a small basic pay, the employees' salary relies mostly on the deducted daily earnings which employers have neither rights nor duties for regardless of how much they are. Since the amount that employees have to turn over to the companies is relatively high, there would be a significant number of drivers who earn less than the minimum wage. Based on the fact that older workers are largely engaged in simple operative jobs in the transportation sector, such as driving, as seen in Chapter Six, the unconventional avoidance of paying the minimum wage among transportation companies could partly explain the lower part below zero in the wage distribution.

Spillovers and the reduction of the wage gap were examined, using OLS and fixed-effects models in which *the fraction affected* and *the fraction newly affected by region* were employed for an increase in the minimum wage, and *the change in employment rate of employees aged 55 and older by region* were controlled, as mentioned in Chapter Five. For the test of spillovers, the dependent variable, *the changes in the 10th, 25th, 50th, 75th, and 90th percentiles of log hourly wages among employees aged 55 and older by region* was computed by subtracting the various percentiles of log hourly wages before

an increase in the minimum wage from the percentiles after the increase for each region. In the models, it was hypothesized that the percentiles of log hourly wages among employees aged 55 and older would increase up to a certain percentile as the fractions of the older employees affected by an increase in the minimum wage increased. This hypothesis was based on the mainstream economic theories' predictions about the spike and spillover effects of the minimum wage. The models assumed that regional difference in the fractions of older employees affected by an increase in the minimum wage reflected the regional wage differentials, and this could redeem the limitation of no comparison group which was not affected by an increase in the minimum wage. It was also assumed that an increase in the minimum wage in a year would only affect the wage distribution of the corresponding year.

The results for the changes in the various percentiles of log hourly wages are presented in Panel A of Table 7.2. The distributional effects were clearly different between the two periods. For the first five-year period with one of the highest minimum wage growth rates, positive and significant correlations between the changes in the 25th, 50th, and 75th percentiles of log hourly wages and the fraction of employees who were previously paid less than a new minimum wage rate were found. The positive and significant correlation was also shown in the change in the 10th percentile of log hourly wages, but at the same time, the other indicator of an increase in the minimum wage, *the fraction newly affected* was negatively correlated with the change at a significance level of 0.1. These indicate that the increases in the minimum wage for the first five-year period were responsible for the increases in the 25th, 50th, and 75th percentiles of log hourly wages among employees aged 55 and older. Meanwhile, for the second five-year period with the lowest minimum wage growth rates, only the change in the 50th percentile of log hourly wage was positively correlated at a significance level of 0.1 with the fraction of all older employees who were previously paid less than a new minimum wage rate. As in the first five-year period, positive and negative correlations were simultaneously found between the change in the 10th percentile of log hourly wages and *the fraction affected* and between the change and *the fraction newly affected*, respectively. Given these results, and the magnitude and statistical significance of the coefficient for the 50th percentile of log hourly wages, it is suggested that the increases in the minimum wage

for the second five-year period had a marginal effect on the distribution of wages at the 50th percentile. The changes in employment rates for employees aged 55 and older included as a control variable for differing labour-market trends across regions had little influence on the estimated models for each of the two five-year periods.

An interesting point from the results is that *the fraction newly affected* was negatively correlated with some of the various percentiles of log hourly wages whereas *the fraction affected* was positively correlated with most of the percentiles. The negative correlation of *the fraction newly affected* was found in more percentiles of log hourly wages for the second five-year period, although the coefficient for the 10th percentile of log hourly wages was statistically significant for both five-year periods. These contrasting effects of the two indicators would suggest that employers who hire older workers are pressured to increase wages by the difference between the lowest wage that they paid and a new minimum wage rate, rather than the difference between an old and a new minimum wage rates, but they marginally increase wages of their older employees when both differences are relatively not large due to a small increase in the minimum wage. The opposing effects of the two indicators can be assumed as a unique feature of the impact of the minimum wage on the wage distribution among older employees in as much as the same explanatory variables did not have opposite effects on the various percentiles of wages for all employees during the period of 1998-2008 in Jeong J-H's (2011) analysis. This feature seems to come, ironically from the fact that older employees' wage level in Korea is generally low, and the proportion of older employees who earn less than 50 per cent of the median wage is not comparable to the proportion of their counterparts among all employees. Older employees are more likely to be exposed to employers' tactical adjustment to their own wage floor along with the changes in the minimum wage.

Some differences in significance and direction between the OLS models and the fixed-effects models were found, and the relationship was somewhat attenuated in the OLS models than in the fixed-effects models for both five-year periods. In terms of goodness of fit, the results of F-tests in which the joint significance of the fixed-effects intercepts were tested showed that the OLS models provided better fit than the fixed-effects models for all the various percentiles of log hourly wages in both five-year periods. As

the null hypothesis, that the variance of unobserved fixed-effects was zero, was not rejected, the regional-specific effect which was unobserved in all periods but constant over time was not correlated with the covariates. This indicates that there was no clue to an endogeneity bias caused by the correlation, for example between the unobserved changes in employment in a specific wage group and the fraction of those affected by the increase in the minimum wage.

Panel B of Table 7.2 reports estimates of regression models to test spillover effects. In the models, the dependent variable was *the changes in ratios between the 90th and 10th, the 90th and 25th, the 90th and 50th, and the 50th and 10th percentiles of log hourly wages among employees aged 55 and older by region*. The variable was computed by subtracting each of the ratios between the various percentiles of log hourly wages before an increase in the minimum wage from each corresponding ratio after the increase for each region. It was hypothesized that the ratios between the various percentiles of log hourly wages would decrease as the proportion of older employees affected by an increase in the minimum wage increased. This was based on a logical consequence of the mainstream economic theories that, if a minimum wage was adequately enforced and complied with and had a spillover effect as expected up to a certain percentile of wages slightly higher than the one to which minimum wage workers belonged, the wage distribution would be narrowed by the lifted wages in the middle wage brackets and below. The models also reflected the regional wage differentials by using regional fractions of older employees affected by an increase in the minimum wage to redeem the limitation of no comparison group which was not affected by an increase in the minimum wage and assumed no long-lasting effect of the increase in the minimum wage.

The results for the relative changes in the percentiles of log hourly wages were different between the two five-year periods. For the first five-year period with one of the highest rate of increase in the minimum wage, the estimated models indicated that *the fraction affected* significantly reduced the 90th/10th and 90th/25th percentile ratios by a small margin whereas the 50th/10th percentile ratio had an ambiguous change by the contrasting effects of *the fraction affected* and *the fraction newly affected*.

Table 7.2 Estimated Models for Changes in the Percentiles of Log Hourly Wages among 55+ Employees, 2004-2008 and 2009-2013

Panel A: Models for Changes in the 10th, 25th, 50th, 75th, 90th Percentiles

	2004 - 2008					2009 - 2013				
<u>OLS Models</u>	P10	P25	P50	P75	P90	P10	P25	P50	P75	P90
Fraction Affected	0.99 (0.23)***	0.63 (0.18)***	0.44 (0.19)**	0.58 (0.33)*	0.13 (0.29)	0.29 (0.17)*	0.19 (0.13)	0.27 (0.15)*	0.22 (0.18)	-0.11 (0.23)
Fraction Newly Affected	-0.84 (0.41)**	-0.35 (0.31)	0.14 (0.33)	0.26 (0.58)	0.03 (0.51)	-1.24 (0.63)*	-0.67 (0.48)	-0.45 (0.58)	0.22 (0.69)	-0.04 (0.87)
Change in Employment Rate	-1.34 (1.03)	0.12 (0.80)	-0.81 (0.85)	-0.92 (1.48)	-0.17 (1.29)	0.33 (0.81)	0.11 (0.62)	-0.19 (0.75)	-0.04 (0.89)	-0.78 (1.12)
R-Squared	0.23	0.15	0.09	0.06	0.003	0.08	0.05	0.05	0.02	0.01
<u>Fixed-effects Models</u>	P10	P25	P50	P75	P90	P10	P25	P50	P75	P90
Fraction Affected	1.75 (0.35)***	1.10 (0.28)***	0.80 (0.30)***	1.23 (0.51)**	-0.31 (0.45)	0.56 (0.21)**	0.31 (0.17)*	0.41 (0.20)*	0.28 (0.24)	-0.07 (0.31)
Fraction Newly Affected	-1.25 (0.48)**	-0.54 (0.38)	0.08 (0.41)	-0.33 (0.70)	0.23 (0.61)	-1.43 (0.72)*	-0.79 (0.56)	-0.63 (0.69)	0.23 (0.81)	-0.02 (1.04)
Change in Employment Rate	-2.27 (1.13)**	-0.35 (0.89)	-1.23 (0.97)	-1.70 (1.65)	0.24 (1.45)	0.48 (0.90)	0.21 (0.70)	-0.03 (0.86)	0.30 (1.01)	-0.52 (1.30)
R-Squared	0.32	0.22	0.14	0.10	0.01	0.15	0.08	0.07	0.03	0.003

Source: KLIPS data wave6(2003) ~ wave16(2013)

Note: (): Standard errors; *** = p < 0.01, ** = p < 0.05, * = P < 0.1

Panel B: Models for the Relative Changes in the Percentiles of Log Hourly Wages

	2004 - 2008				2009 - 2013			
<u>OLS Models</u>	P90/P10	P90/P25	P90/P50	P50/P10	P90/P10	P90/P25	P90/P50	P50/P10
Fraction Affected	-0.15 (0.06)***	-0.08 (0.05)*	-0.05 (0.04)	-0.09 (0.04)**	-0.06 (0.03)*	-0.04 (0.03)	-0.05 (0.03)*	-0.005 (0.02)
Fraction Newly Affected	0.14 (0.10)	0.06 (0.08)	-0.02 (0.07)	0.14 (0.07)*	0.19 (0.13)	0.09 (0.12)	0.06 (0.10)	0.11 (0.09)
Change in Employment Rate	0.22 (0.25)	-0.04 (0.21)	0.08 (0.18)	0.11 (0.18)	-0.14 (0.17)	-0.10 (0.16)	-0.07 (0.14)	-0.07 (0.11)
R-Squared	0.10	0.04	0.03	0.09	0.07	0.03	0.04	0.03
<u>Fixed-effects Models</u>	P90/P10	P90/P25	P90/P50	P50/P10	P90/P10	P90/P25	P90/P50	P50/P10
Fraction Affected	-0.34 (0.08)***	-0.21 (0.07)***	-0.15 (0.06)**	-0.15 (0.07)**	-0.10 (0.04)**	-0.05 (0.04)	-0.06 (0.04)*	-0.02 (0.03)
Fraction Newly Affected	0.24 (0.12)**	0.12 (0.10)	0.02 (0.08)	0.20 (0.09)**	0.22 (0.15)	0.11 (0.14)	0.08 (0.13)	0.12 (0.10)
Change in Employment Rate	0.44 (0.28)	0.08 (0.23)	0.19 (0.20)	0.19 (0.21)	-0.13 (0.19)	-0.08 (0.18)	-0.06 (0.16)	-0.07 (0.13)
R-Squared	0.23	0.13	0.11	0.12	0.10	0.03	0.05	0.03

Source: KLIPS data wave6(2003) ~ wave16(2013)

Note: (): Standard errors; *** = p < 0.01, ** = p < 0.05, * = P < 0

These results suggest that an increase in the minimum wage was responsible for a significant wage compression between the upper wage bracket and the lower-middle wage bracket or the lowest wage bracket, but the reduction of the wage gap between the middle wage bracket and the lowest wage bracket was likely to be restrained in regions with a high fraction of older workers who were previously paid between an old and a new minimum wage rates. Given the results for the changes in the various percentiles of wages, this implies that the increase in the minimum wage pushed up wages mainly in the middle wage brackets during the first five-year period, but the wage in the lowest wage bracket also increased as much as the wage in the middle wage bracket did, despite its fall in regions with a high fraction of older employees who were previously paid between an old and a new minimum wage rate. For the second five-year period with the lowest rate of increase in the minimum wage, the estimated models indicated that the 90th/10th and 90th/50th percentile ratios significantly but marginally decreased by *the fraction affected*. This suggests that a smaller increase in the minimum wage during the second-five year brought about a slight relief of the wage gap between the upper wage bracket and the lowest or the middle wage bracket. The changes in employment for employees aged 55 and older included as a control variable had little influence on all the estimated models, and the OLS models had better fit than the fixed-effects models for both five-year periods based on F-test of the joint significance of the fixed-effects intercepts.

One thing to add is that, as expected from the results for the changes in the percentiles of log hourly wages, *the fraction affected* mostly had negative correlations with the various percentile ratios while *the fraction newly affected* mostly had positive but insignificant correlations with the ratios for both five-year periods. This implies that *the fraction affected* would be a better indicator than *the fraction newly affected* to test the distributional effects of an increase in the minimum wage for older workers.

Furthermore, it supports the supposition that employers who hire older workers are pressured to increase wages by the difference between the lowest wage that they paid and a new minimum wage rate, rather than the difference between an old and a new minimum wage rates.

In sum, the increase in the minimum wage created spikes at or around the minimum wage in the distribution of wages among older employees for both of the period with one of the highest rates of increase in the minimum wage and the period with the lowest rate of increase. However, it neither truncated nor thinned out the lower tail of the distribution of wages in all of the years, showing a considerable proportion of older employees left being paid less than the minimum wage. In terms of the spillover effects, the contrasting effects of *the fraction affected* and *the fraction newly affected* did not provide convincing evidence for both five-year periods that the increase in the minimum wage had positive and significant effects at the 10th percentile of log hourly wages among older employees. The regression estimates indicated positive and significant effects of *the fraction affected* variable at the 25th, 50th, and 75th percentiles for the first five-year period and at the 50th percentile for the second five-year period. These results, however, do not directly give an answer to the spillover question for the second five-year period, because the 50th percentile can be minimum wage older workers in low-wage regions. In this case, the estimate would include both the effects of the minimum wage on the spike in the wage distribution at the minimum and spillover effects above it, as Neumark and Wascher (2008, p.117) pointed out. As regards minimum wage effects on the reduction in the wage gap among older employees, the regression estimates indicated marginal and significant reductions at the 90th/10th and 90th/25th percentile ratios by *the fraction affected* and an ambiguous change in the 50th/10th percentile ratios by the contrasting effects of *the fraction affected* and *the fraction newly affected* for the first five-year period. By comparison, marginal but significant effects of *the fraction affected* variable at the 90th/10th and 90th/50th percentile ratios were found for the second five-year period.

The Effect of the Minimum Wage on Employment

The effect of the minimum wage on employment among older employees was explored at two different levels. Effects at the regional level were first screened for each of the two five-year periods, using OLS and fixed-effects models. In the models, the dependent variables were *the change in employment rate of older employees by region* and *the change in unemployment rate of older individuals by region* (see the *methods*

part of Chapter Five for how each was defined). Both variables were computed by subtracting the (un)employment rate before an increase in the minimum wage from the corresponding after the increase for each region. *The fraction affected* and *the fraction newly affected*, the same indicators of an increase in the minimum wage used in the analysis of the effects on the wage distribution were employed as the independent variables, and no control variable was included due to the limits of data. Following the typical prediction of the mainstream economic theory, it was hypothesized that a higher increase in the minimum wage may have a stronger negative correlation with the change in the employment rate of older employees and also a stronger positive correlation with the change in their unemployment rate. This hypothesis was based on the assumptions that monopsony was not the labour market condition for older workers, new hires would rarely occur among them, and the dismissal by an increase in the minimum wage would lead to the increase in the unemployment rate of the age group. As in the OLS and fixed-effects models for the effects on the wage distribution, these models also reflected the regional wage differentials by using regional fractions of older employees affected by an increase in the minimum wage to redeem the limitation of no comparison group which was not affected by an increase in the minimum wage, and assumed no long-lasting effect of the increase in the minimum wage that last over one year.

Table 7.3 reports the estimates of the models for each five-year period. The results show that neither *the fraction affected* nor *the fraction newly affected* were significantly correlated with regional employment or unemployment rates for the first five-year period with one of the highest rates of increase in the minimum wage. By contrast, both indicators of an increase in the minimum wage had negative and significant correlations with regional unemployment rates by a small margin for the second five-year period with the lowest rate of increase in the minimum wage. Note that the OLS models had a better fit than the fixed-effects models for both five-year periods based on F-test of the joint significance of the fixed-effects intercepts. The estimated models suggest that the increase in the minimum wage would not lower regional employment levels for older employees, regardless of the rate of increase in the minimum wage, but a marginal increase in the minimum wage might drive older workers to move to other types of employment, such as self-employment, or to a higher-wage region. However, this

analysis does not provide direct evidence of a zero disemployment effect for the increase in the minimum wage. Although many factors, including sectoral composition of firms hiring older workers for each region, may be involved in regional employment and unemployment levels for older workers, none were controlled in the models.

Table 7.3 Estimated Models for Changes in Employment & Unemployment among 55+ Employees, 2004-2008 and 2009-2013

	2004 – 2008		2009 - 2013	
<u>OLS Models</u>	Employment	Unemployment	Employment	Unemployment
Fraction Affected	0.01 (0.03)	0.03 (0.03)	-0.01 (0.02)	-0.11 (0.03)***
Fraction Newly Affected	0.01(0.05)	-0.06 (0.05)	0.05 (0.09)	-0.17 (0.10)*
R-Squared	0.003	0.02	0.01	0.21
<u>Fixed-effects Models</u>	Employment	Unemployment	Employment	Unemployment
Fraction Affected	0.07 (0.04)*	-0.06 (0.04)	-0.01 (0.03)	-0.15 (0.03)***
Fraction Newly Affected	-0.03 (0.06)	0.005 (0.06)	0.06 (0.10)	-0.16 (0.11)
R-Squared	0.05	0.04	0.01	0.27

Source: KLIPS data wave6(2003) ~ wave16(2013)

Note: (): Standard errors; *** = p < 0.01, ** = p < 0.05, * = P < 0.1

The causal relationship between the increase in the minimum wage and disemployment among older employees was explored at the individual level for each of the five-year periods, using the multilevel discrete-time event history model for competing risks. In the model, the dependent variables were *individuals' transition from being employed to being unemployed or to being in other types of employment*, such as self-employment or non-wage family business work. In company with the control of individuals' *sex, age, and level of education* obtained, *the product of minimum wage application or not and log hourly real minimum wage* were used for representing the increase in the minimum wage, and *duration* spent being employed plus *square of duration* were also included as

explanatory variables for testing the effect of duration and its reversal at some point. This event history analysis was conducted for each of the two five-year periods, using both fixed-effects models which did not assume unobserved heterogeneity among older employees and random-effect models which allowed for it. In the models, it was hypothesized that if an older employee was affected by an increase in the minimum wage, the employee may be more likely to become unemployed or to get into other types of employment, such as self-employment, as the real minimum wage increased. As in the analysis at the regional level, this hypothesis was also based on the typical prediction of the mainstream economic theory, did not suppose monopsony labour market for older workers, assumed that an increase in the minimum wage would influence on individuals' transition only in the corresponding year, and focused on their transition from being employed in the light of relatively rare new hires in the older age group.

Cases selected from the original KLIPS individual datasets for the analysis were those aged 55 and over and being employed at some time in each five-year period. Observations found in discrete-time format of individuals being unemployed, self-employed or in non-wage family business work before being employed and of individuals staying in one of those states or shifting between those states after a transition from being employed were excluded. The analysis was based on the original sample of 782 older employees with 806 episodes for the first five-year period and of 1,337 older employees with 1,396 episodes for the second five-year period. Employment spells provided a total of 2,338 and 4,016 person-year observations for each five-year period, respectively. As noted earlier, the big gap in the total number of cases and observations between the two five-year periods is attributed to the supplementation of respondents from the twelfth wave of the KLIPS in 2009. Table 7.4 shows the descriptive statistics by covariates in both individual level and observation level. Men had much higher share than women for both five-year periods; however, the proportion of women grew by over 4.5 per cent in the second five-year period whilst the portion of men fell by the same rate in the same period. The average age was 60.37 years old for the first five-year period, which increased by roughly one year old for the second five-year period; and the majority of respondents were middle or high school

graduates. The average duration spent in being employed by an individual's episode for each five-year period was 2.94 years and 2.93 years, respectively.

Table 7.4 Descriptive Statistics of 55+ Employees by Covariates, 2004-2008 & 2009-2013

	2004 - 2008		2009 - 2013	
	Individual / Episode	Observation	Individual / Episode	Observation
Number of Total	782 / 806	2,338	1,337 / 1,396	4,016
	N (%)	N (%)	N (%)	N (%)
Sex				
Male	515 (65.9)	1,565 (66.9)	820 (61.3)	2,494 (62.1)
Female	267 (34.1)	773 (33.1)	517 (38.7)	1,522 (37.9)
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
Age	60.37 (5.259)	60.88 (5.266)	61.50 (6.161)	61.97 (6.087)
Education	1.42 (0.494)	1.41 (0.492)	1.45 (0.497)	1.43 (0.495)
Duration Spent in being Employed	2.94 (1.430)	2.30 (1.263)	2.93 (2.007)	2.29 (1.253)
MW Application or not * Log Real				
MW	2.30 (3.155)	2.37 (3.646)	2.51 (3.287)	2.59 (3.793)

Source: KLIPS data wave6(2003) ~ wave16(2013)

The estimated coefficients and standard errors from the full fixed-effects model for competing risks are given in Table 7.5. The hazard of being unemployed significantly increased with the duration spent in being employed for the first five-year period, and the one of being self-employed did as well with higher probability. For the second five-year period, the duration effect on the transition to being unemployed was significant and gave older employees even a higher risk than for the first five-year period. However, the transition to self-employment was not significantly affected by the duration spent in being employed. The positive duration effect on the transition to unemployment would result from the combined reasons that some older employees retired from their lifetime jobs and others left from their temporary jobs under the prevalent employees' policy to preferentially dismiss those with long service for new hire of the younger workers. The difference in the duration effect between the two five-year periods can be interpreted that the economic condition for the first five-year period still allowed the practice of retirees' starting a small business but the condition for the second five-year period did not influenced by the global financial crisis. Meanwhile,

there was no significant evidence of the increased risk of being unemployed for older employees aged 55 and over in both five-year periods. Although a positive estimate was shown for the first five-year period with one of the highest rates of increase in the minimum wage increase, and a negative estimate was given for the second five-year with the lowest rates, all the estimates of the minimum wage effect were neither statistically significant nor large. For the transition to being self-employed, the variable representing the increase in the minimum wage had a negative but statistically insignificant effect for both five-year periods. These results imply that the increase in the minimum wage was not responsible for older employees' becoming unemployed or in other types of employment, including self-employment and non-wage family business work, regardless of the rate of increase in the minimum wage. This is consistent with the findings of the analysis at the regional level that there would be no disemployment effect of the increase in the minimum wage. In terms of other covariates, there was little significant effect of sex and education, except that female older employees were more likely to become self-employed than male counterparts for the first five-year period. But older employees' age significantly increased the risk of being unemployed for both five-year periods and the risk of being self-employed for the second five-year period.

Although the numerical values slightly changed, the estimates in Table 7.6 from the random-effects model allowing for unobserved heterogeneity between older employees show the same pattern of results with the one from the fixed-effects model. Further, the estimated covariance between the random-effects was negative, which could be interpreted that older employees who had a transition to unemployment in a shorter time tended to have a longer time for being self-employed, and on the contrary, those who had a transition to being unemployed in a longer time were more likely to be self-employed in a shorter time. But, the estimate of individual-level variance was small relative to its standard error, suggesting that there was little evidence of correlation between the unobserved individual-level characteristics influencing the hazard of a transition either to unemployment or to self-employment.

Table 7.5 Estimated Fixed-effects Models of Transitions from being Employed among 55+ Employees, 2004-2008 and 2009-2013

	2004 - 2008		2009 - 2013	
	Employed -> Unemployed	Employed -> Self-employed	Employed -> Unemployed	Employed -> Self-employed
Constant	-5.431 (0.879)***	-6.380 (2.006)***	-5.656 (0.628)***	-7.728 (1.470)***
Duration Employed	0.354 (0.151)**	0.703 (0.336)**	0.531 (0.126)***	-0.060 (0.249)
Duration*Duration	0.015 (0.018)	-0.046 (0.038)	-0.005 (0.015)	0.028 (0.035)
MW Application or not* Log Real MW	0.006 (0.021)	-0.050 (0.047)	-0.014 (0.017)	-0.008 (0.041)
Sex (ref. is male)				
Female	0.021 (0.170)	1.240 (0.356)***	0.107 (0.131)	-0.294 (0.329)
Age	0.048 (0.014)***	0.034 (0.032)	0.051 (0.010)***	0.055 (0.023)**
Education (ref. is middle & lower)				
High School & higher	-0.081(0.165)	0.527 (0.365)	-0.088 (0.128)	-0.235 (0.312)
Case / Observation	782 / 2,338		1,337 / 4,016	

Source: KLIPS data wave6(2003) ~ wave16(2013)

Note: Parameter estimates are the modal estimates from 50,000 chains; (): Standard errors; *** = $p < 0.01$, ** = $p < 0.05$, * = $P < 0.1$

Table 7.6 Estimated Random-effects Models of Transitions from being Employed among 55+ Employees, 2004-2008 and 2009-2013

	2004 - 2008		2009 - 2013	
	Employed -> Unemployed	Employed -> Self-employed	Employed -> Unemployed	Employed -> Self-employed
Constant	-5.804 (0.896)***	-6.716 (2.093)***	-5.873 (0.692)***	-8.587 (1.840)***
Duration Employed	0.416 (0.164)**	0.821 (0.368)**	0.574 (0.133)***	-0.011 (0.280)
Duration*Duration	0.023 (0.019)	-0.048 (0.041)	-0.003 (0.016)	0.031 (0.039)
MW Application or not* Log Real				
MW	0.008 (0.022)	-0.049 (0.050)	-0.015 (0.018)	-0.003 (0.047)
Sex (ref. is male)				
Female	0.033 (0.192)	1.309 (0.396)***	0.118 (0.138)	-0.355 (0.376)
Age	0.051 (0.014)***	0.030 (0.032)	0.053 (0.011)***	0.056 (0.028)**
Education (ref. is middle & lower)				
High School & higher	-0.118 (0.187)	0.488 (0.399)	-0.095 (0.135)	-0.259 (0.350)
σ^2_{v0}	0.543 (0.311)		0.268 (0.277)	
$\sigma_{v01}, \sigma^2_{v1}$	-0.109 (0.341)	1.073 (1.223)	-0.110 (0.561)	1.779 (1.890)
Deviance (MCMC)	1,662.637		2,607.445	
Case / Observation	782 / 2,338		1,337 / 4,016	

Source: KLIPS data wave6(2003) ~ wave16(2013)

Note: Parameter estimates are the modal estimates from 50,000 chains; (): Standard errors; *** = p < 0.01, ** = p < 0.05, * = P < 0.1

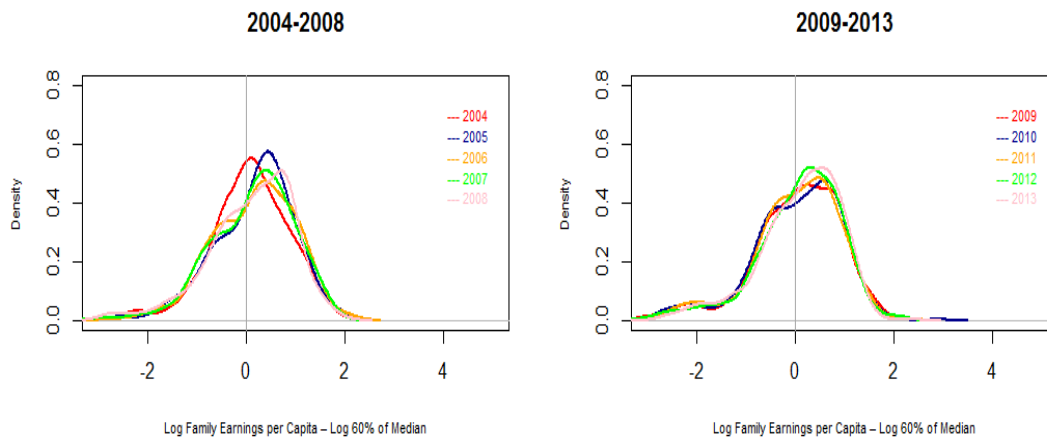
Overall, there was no evidence from the above analyses that the increase in the minimum wage had a disemployment effect among older workers, either at the regional level or at the individual level. The results of the analysis at the regional level implied the possibility of a marginal reduction in their unemployment rate by a marginal increase in the minimum wage, and the results at the individual level provide evidence of no instant dismissal among older employees due to the increase in the minimum wage, regardless of its rate of increase. However, it may not be affirmed that the increase in the minimum wage would have no employment effect among older workers for the years studied since the findings do not inform us whether the increase in the minimum wage prevented new hires among older workers. For a full account of the employment effect for older workers, the minimum wage effect on older workers' transition from being unemployed or being in other types of employment to being employed should also be explored.

The Minimum Wage Effects on the Distribution of Family Earnings and Exit from Working Poor

Minimum wage effects on the distribution of family earnings and on exit from being working poor are addressed in this section. Before exploring the effects, the distribution of family earnings of employees aged 55 and older was reviewed for each of the two five-year periods by plotting the kernel density estimates of log annual family earnings per capita for each older employee's household minus log 60 per cent of the median annual family earnings per capita for all employees' households. As shown in Figure 7.2, the plot shows that a large portion of older employees were working poor, having annual family earnings less than 60 per cent of the median in both five-year periods. However, the two five-year periods indicated clearly different features. While the distribution roughly moved a little towards the right year by year for the first five-year with one of the highest rates of increase in the minimum wage, the second five-year had more bulges in the lower parts of the distribution with lower peak points. This implies that older employees were likely to experience a rise in family earnings for the first five-year period but no rise or even a fall during the second five-year period. The kernel density estimates for the second five-year period could be a partial reflection of the

economic downturn arising from the 2008 global financial crisis.

Figure 7.2 Distribution of Monthly Family Earnings among 55+ Employees, 2004-2008 and 2009-2013



Source: KLIPS data wave8(2004) ~ wave17(2014)

Using OLS and fixed-effects models, minimum wage effects on the distribution of family earnings of employees aged 55 and older were examined for each of the two five-year periods. The dependent variables were *the changes in the 10th, 50th, and 90th percentiles of log annual family earnings per capita among employees aged 55 and older by region* and *the changes in ratios between the 90th and 10th and the 50th and 10th percentiles by region*. Each variable was computed by subtracting each of the concerned percentiles of log annual family earnings per capita and the ratios between the percentiles before an increase in the minimum wage from each corresponding percentile and ratio after the increase for each region, respectively. *The fraction affected* and *the fraction newly affected*, the same indicators of an increase in the minimum wage used in the analysis of the effects on the wage distribution were employed as independent variables, and *the change in employment rate of employees aged 55 and older by region* was also controlled in the models. It was hypothesized that log annual family earnings per capita would increase up to a certain percentile in their distribution among employees aged 55 and older as the fraction of older employees affected by an increase in the minimum wage increased. This hypothesis was based on the supposition that an increase in the minimum wage could make a contribution to improve family

earnings among low paid older employees' households if there was no change in the employment status of older employees' partners, in consideration of the fact from Table 7.1 that the majority of older employees were married, and many of their households consisted of two members. Under the condition that the supposition was true, it was also hypothesized that an increase in the minimum wage would reduce the gaps between the lowest percentile of log annual family earnings per capita and the highest or middle percentiles by increasing the lowest percentile. As in the analysis of the effects on the wage distribution, the models assumed that regional differences in the fraction of older employees affected by an increase in the minimum wage reflected the regional wage differentials, and this could redeem the limitation of no comparison group which was not affected by an increase in the minimum wage. It was also assumed that an increase in the minimum wage in a year would only affect the distribution of family earnings for the corresponding year.

Table 7.7 reports estimates for the changes in the various percentiles of log annual family earnings per capita among those aged 55 and older and in ratios between the percentiles. Although the relationship was somewhat more attenuated in the OLS models than the fixed-effects models for both five-year periods, F-tests of the joint significance of the fixed effects intercepts showed that the OLS models provided a better fit than the fixed-effects models for both five-year periods. The effects were clearly different between the two periods. For the first five-year period with one of the highest rates of increase in the minimum wage, no statistically significant correlation between the changes in the various percentiles of log annual family earnings per capita among older employees and the fractions of older employees who were previously paid less than a new minimum wage or between an old and a new rate was found. Instead, the change in the employment rate of older employees by region was positively correlated with the changes in the 10th and 90th percentiles of log annual family earnings per capita among older employees at a significance level of 0.01. Corresponding to these results, no estimate for the relative changes in the percentiles of log annual family earnings per capita among older employees showed a significant effect from the increase in the minimum wage during this five-year period but sizable reductions in the 90th/10th and 50th/10th percentile ratios by the change in the employment rate of older

Table 7.7 Estimated Models for Changes in the Percentiles of Log Family Earnings among 55+ Employees, 2004-2008 and 2009-2013

	2004 - 2008					2009 - 2013				
<u>OLS Models</u>	P10	P50	P90	P90/P10	P50/P10	P10	P50	P90	P90/P10	P50/P10
Fraction Affected	-0.46 (0.51)	-0.27 (0.24)	-0.37 (0.25)	0.05 (0.13)	0.05 (0.11)	0.42 (0.40)	0.51 (0.19)***	0.17 (0.14)	-0.05 (0.11)	0.02 (0.10)
Fraction Newly Affected	1.08 (0.89)	0.57 (0.42)	-0.34 (0.45)	-0.27 (0.23)	-0.10 (0.19)	-0.40 (1.51)	-0.32 (0.71)	-0.30 (0.53)	0.12 (0.40)	0.11 (0.37)
Change in Employment Rate	5.90 (2.26)**	1.14 (1.07)	2.47 (1.14)**	-1.17 (0.59)*	-1.23 (0.49)**	2.63 (1.94)	0.33 (0.91)	-1.06 (0.68)	-0.97 (0.52)*	-0.65 (0.47)
R-Squared	0.11	0.05	0.10	0.07	0.09	0.04	0.09	0.05	0.05	0.03
<u>Fixed-effects Models</u>										
	P10	P50	P90	P90/P10	P50/P10	P10	P50	P90	P90/P10	P50/P10
Fraction Affected	-0.82 (0.80)	-0.51 (0.38)	-0.94 (0.38)**	0.05 (0.21)	0.08 (0.17)	0.52 (0.53)	0.61 (0.25)**	0.19 (0.19)	-0.04 (0.14)	0.04 (0.13)
Fraction Newly Affected	1.58 (1.11)	0.72 (0.52)	-0.25 (0.53)	-0.37 (0.29)	-0.17 (0.24)	-0.58 (1.80)	-0.57 (0.84)	-0.42 (0.63)	0.16 (0.48)	0.12 (0.44)
Change in Employment Rate	6.70 (2.61)**	1.45 (1.23)	3.26 (1.24)**	-1.25 (0.68)*	-1.36 (0.56)**	3.28 (2.25)	0.35 (1.05)	-1.06 (0.79)	-1.13 (0.60)*	-0.79 (0.55)
R-Squared	0.13	0.10	0.18	0.08	0.10	0.05	0.09	0.05	0.06	0.04

Source: KLIPS data wave6(2003) ~ wave17(2014)

Note: () : Standard errors; *** = p < 0.01, ** = p < 0.05, * = P < 0.1

employees by region. These indicate that even higher increases in the minimum wage may not have a substantial impact on the distribution of family earnings of older employees when their employment rate has a strong influence on the distribution. This result could be a case that new employment, including self-employment, of older employees' partners was partially responsible for the increase in family earnings of older employees' households in regions with a high change in the employment rate of older employees. In this case, the effect of an increase in the minimum wage might become significant in lower percentiles of family earnings of older employees when the partners' new employment is controlled.

For the second five-year periods, *the fraction affected* was positively and significantly correlated with the change in the 50th percentile of log annual family earnings per capita among older employees, and the regional change in the employment rate of older employees was negatively and significantly correlated with the 90th/10th percentile ratio. These indicate that a marginal increase in the minimum wage had a significant effect on median family earnings in regions with a high fraction of older employees previously paid less than a new minimum wage, and employment rates for older employees were responsible for the gap between the highest and lowest percentiles of family earnings of older employees in regions with a big change in the employment rate. When recalling the kernel density plot in Figure 7.2, the results imply that the small increase in the minimum wage for the second-five year period substantially increased family earnings of older employees' households with income from labour below 60 per cent of the median family earnings for all employees when the fraction of older employees previously paid less than a new minimum wage rate was large.

Although statistically significant correlations were rarely found, both of *the fraction affected* and *the fraction newly affected* variables were inversely correlated with the changes in most of the various percentiles of older employees' family earnings and of their ratios in both five-year periods, and the sign of each indicator of an increase in the minimum wage was reversed between the two five-year periods. Considering the fact that the change in the employment rate had significant effects, mostly for the first five-year period, the reversed contrasting effects of the two indicators between the two five-year periods may imply that the change in each fraction for a region was likely to be

explained to some degree by a certain feature of the change in the employment rate plus an increase in the minimum wage for the first period while it was not for the second period, although the results of F-tests showed no unobserved fixed-effects.

Lastly, minimum wage effects on exits from in-work poverty among older employees aged 55 and older were examined for each five-year period, using the multilevel discrete-time event history model for competing risks. As mentioned in Chapter Five, the working poor were defined as employees whose household income was less than 60 per cent of the median annual household income for all individuals surveyed. Since the median household income is typically much lower than the mean household income in Korea, the use of the median rather than the mean allows us to avoid an unnecessary controversy as regards the definition. Note that household income was computed on a per-capita basis by dividing the total annual amount of family earning and income from all other sources in an individual's household by the square root of household size, an equivalence scale for income estimates. In the models, the dependent variables were *individuals' transition from being poor while being employed to getting out of poverty while staying employed, to being unemployed, or to being in other types of employment, such as self-employment or non-wage family business work. The product of minimum wage application or not and log hourly real minimum wage* was used for indicating an increase in the minimum wage, as in the analysis of employment effects. *Duration* spent in being the working poor and *square of duration* were also employed as explanatory variables for testing the effect of duration and its reversal at some point, and *sex, age, level of education* obtained, *household or not, and the number of family members* were controlled. This event history analysis was conducted, using both fixed-effects and random-effects models. In the models, it was hypothesized that if an older employee was affected by an increase in the minimum wage, the employee's household would be more likely to exit from poverty while they were employed, as the real minimum wage increased. This hypothesis was based on the supposition that if a significant proportion of older employees who previously earned less than a new minimum wage rate was paid the new rate, household income will be increased by an increase in the minimum wage among a part of the employees' households of which around 50 per cent earned less than 60 per cent of the median annual family earnings, in as much as income from

labour would be the most critical and elastic income source among low-income households. The hypothesis also assumed that an increase in the minimum wage would affect individuals' transition only in the corresponding year, as in other analyses.

Employees who were aged 55 and over and earned household income per capita less than 60 per cent of the median at some time in each five-year period were selected from the original KLIPS datasets for the analysis. In discrete-time format, observations in which an individual was unemployed, self-employed, in non-wage family business work, or employed with household income per capita of 60 per cent of the median or more before being employed with household income per capita less than 60 per cent of the median were excluded. Observations in which an individual stayed in one of those states stated above or shifted between the states after a transition from being the working poor were also excluded. The analysis was based on 276 older employees in poverty with 280 episodes for the first five-year period and on 421 counterparts with 461 episodes for the second five-year period. Spells in in-work poverty gave a total of 670 and 1,097 person-year observations for the first and second five-year period, respectively. (Note again that the difference in the total number of cases and observations included between the two five-year periods is due to the supplement of respondents from the twelfth wave of the KLIPS in 2009.)

Table 7.8 displays the descriptive statistics by covariates in both individual level and observation level. There was only a small difference in the share of men and women for the first five-year period, but the proportion of women was higher by 9.2 per cent than the one of men for the second five-year period. The average age was 63.74 and 65.11 years old for the two five-year periods, respectively, and those are higher than the average age of older employees aged 55 and over presented in Table 7.4. The average level of education obtained was, on the contrary, lower than the average of older employees for both five-year periods. Householder status was dominant among the older working poor, and the average number of family members decreased from 2.46 for the first five-year period to 2.15 for the second five-year period. The average duration spent in the working poor in an episode was slightly less than two and half years for both five-year periods. The mean of *minimum wage application or not * log hourly real minimum wage* was much higher in both five-year periods than the one for older

employees aged 55 and older shown in Table 7.4, which means that older employees in poverty were more affected by the minimum wage than the non-poor.

Table 7.8 Descriptive Statistics of 55+ Working Poor by Covariates, 2004-2008 & 2009-2013

	2004 - 2008		2009 - 2013	
	Individual / Episode	Observation	Individual / Episode	Observation
Number of Total	256 / 280	670	421 / 461	1,097
	N (%)	N (%)	N (%)	N (%)
Sex				
Male	131 (51.2)	341 (50.9)	191 (45.4)	482 (43.9)
Female	125 (48.8)	329 (49.1)	230 (54.6)	615 (56.1)
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
Age	63.74 (5.768)	64.22 (5.739)	65.11 (7.165)	65.55 (7.084)
Education	1.25 (0.433)	1.23 (0.423)	1.24 (0.430)	1.23 (0.421)
N of Family Members	2.46 (1.119)	2.47 (1.187)	2.15 (1.040)	2.09 (1.037)
Householder or not	0.75 (0.426)	0.75 (0.431)	0.76 (0.422)	0.78 (0.415)
Duration Spent in Working				
Poor	2.43 (1.185)	1.99 (1.100)	2.42 (1.130)	1.95 (1.056)
MW Application or not * Log				
Real MW	3.88 (3.443)	4.13 (3.992)	4.42 (3.465)	4.71 (4.023)

Source: KLIPS data wave6(2003) ~ wave17(2014)

The estimated coefficients and standard errors from the fixed-effects models for competing risks are shown in Table 7.9. Both the chance of exiting from poverty while being employed and the hazard of being unemployed significantly increased with the duration spent in poverty while being employed for both five-year periods. However, the magnitude of the duration effect for exits from in-work poverty among older employees was larger than for the transition to unemployment for the first five-year period with one of the highest rates of increase in the minimum wage, while it was reversed for the second five-year period with the lowest rate of increase. The result that an older employee with a longer duration in working poverty was more likely to be out of it contradicts the conventional wisdom that people staying longer in poverty tend to find it harder to exit from poverty. But, the observation period in the analysis was a five-year term, and the result does not represent the long-term effects of poverty. The

duration effect from the analysis can be understood that, at least in short or middle-term period, relatively longer employment would help older employees in poverty to make a little financial room or small savings by tightening consumption.

Regarding the effect of the minimum wage, there was no evidence that the minimum wage raised the chance of exiting from in-work poverty among older employees. No transition from being poor while being employed significantly increased or decreased with *the product of minimum wage application or not and log real minimum wage* variable for the first five-year period with one of the highest rates of increase in the minimum wage. Rather, the variable indicating minimum wage increases reduced the chance of exits from poverty among older employees for the second five-year period with the lowest rate of increase in the minimum wage. These results indicate that even a large increase in the minimum wage had no impact on older individuals' exits from in-work poverty, and a very low increase was responsible for reducing the odds to exit from in-work poverty among older employees. Assuming that income from labour is the largest portion of household income among the older working poor, the results on older employees' exits from poverty is consistent with the results on the distribution of family earnings, in as much as minimum wage increases for the first five-year period had no significant effect while the increases for the second five-year period only raised the 50th percentile which was presumably less than 60 per cent of the median family earnings for all employees. As regards other covariates in the model, older employees' age significantly decreased the chance to exit from in-work poverty for both five-year periods and increased the hazard of being unemployed for the second five-year period, and those obtained higher education were more likely to be out of poverty while being employed for both five year periods.

Table 7.10 reports the results from the random-effects model, showing the same pattern as in the fixed-effects model. A difference is the significance in the effect of householder status. The estimated covariance between the random-effects was negative, possibly suggesting that an older employee who exited from in-work poverty in a short time period was more likely to spend a longer time for the transition to unemployment or self-employment, whereas an older individual in in-work poverty for a longer time tended to have a shorter time for the transition to other states. But, since the covariance

Table 7.9 Estimated Fixed-effects Models for Transitions from In-Work Poverty among 55+ Employees, 2004-2008 and 2009-2013

	2004 - 2008			2009 - 2013		
	Working Poor -> Exit from In-Work Poverty	Working Poor -> Unemployment	Working Poor -> Self- Employment	Working Poor -> Exit from In-Work Poverty	Working Poor -> Unemployment	Working Poor -> Self-Employment
Constant	3.116 (1.837)*	-3.906 (1.795)**	-3.954 (4.070)	0.545 (1.104)	-5.857 (1.298)***	-5.009 (3.226)
Duration in Working Poor	0.784 (0.332)**	0.676 (0.337)**	0.312 (0.743)	0.619 (0.220)***	0.924 (0.292)***	0.286 (0.671)
Duration*Duration	-0.017 (0.050)	-0.038 (0.050)	-0.006 (0.115)	-0.018 (0.035)	-0.067 (0.043)	-0.012 (0.110)
MW Application or not*Log Real MW	0.012 (0.034)	-0.004 (0.035)	-0.050 (0.085)	-0.055 (0.025)**	0.012 (0.031)	0.014 (0.076)
Sex (ref. is male)						
Female	-0.514 (0.366)	0.100 (0.347)	-0.978 (0.967)	0.142 (0.239)	-0.009 (0.284)	-1.097 (0.768)
Age	-0.086 (0.027)***	0.020 (0.025)	0.045 (0.056)	-0.039 (0.015)***	0.056 (0.017)***	0.031 (0.041)
Education (ref. is middle & lower)						
High School & higher	1.021 (0.304)***	0.278 (0.353)	0.007 (0.872)	0.468 (0.207)**	-0.129 (0.294)	-0.668 (0.788)
Householder or not (ref. is no)						
Householder	-0.226 (0.403)	0.358 (0.411)	-1.722 (0.995)*	0.032 (0.275)	0.083 (0.352)	-0.366 (0.996)
N of Family Members	0.133 (0.114)	0.073 (0.122)	-0.492 (0.421)	0.112 (0.096)	0.008 (0.130)	-0.142 (0.352)
Case / Observation		256 / 670			421 / 1,097	

Source: KLIPS data wave6(2003) ~ wave17(2014)

Note: Parameter estimates are the modal estimates from 50,000 chains; (): Standard errors; *** = p < 0.01, ** = p < 0.05, * = P < 0.1

Table 7.10 Estimated Random-effects Models for Transitions from In-Work Poverty among 55+ Employees, 2004-2008 and 2009-2013

	2004 - 2008			2009 - 2013		
	Working Poor -> Exit from In-Work Poverty	Working Poor -> Unemployment	Working Poor -> Self-Employment	Working Poor -> Exit from In-Work Poverty	Working Poor -> Unemployment	Working Poor -> Self-Employment
Constant	4.477 (2.383)*	-4.516 (2.457)*	-19.341 (17.183)	0.512 (1.061)	-7.292 (2.235)***	-6.074 (3.608)*
Duration in Working Poor	1.093 (0.425)***	0.969 (0.435)**	4.328 (4.493)	0.813 (0.299)***	1.199 (0.458)***	0.532 (0.797)
Duration*Duration	-0.020 (0.058)	-0.039 (0.057)	-0.208 (0.459)	-0.015 (0.038)	-0.066 (0.050)	-0.031 (0.118)
MW Application or not* Log Real MW	0.031 (0.041)	-0.009 (0.041)	-0.015 (0.269)	-0.061 (0.027)**	0.015 (0.036)	0.031 (0.082)
Sex (ref. is male)						
Female	-0.683 (0.479)	0.115 (0.455)	-3.679 (5.191)	0.110 (0.272)	-0.065 (0.350)	-1.358 (0.836)
Age	-0.114 (0.036)***	0.025 (0.034)	0.223 (0.249)	-0.041 (0.015)***	0.073 (0.026)***	0.039 (0.041)
Edu (ref. is middle & lower)						
High School & higher	1.241 (0.413)***	0.294 (0.446)	0.211 (3.743)	0.539 (0.246)**	-0.222 (0.380)	-0.999 (0.941)
Householder or not (ref. is no)						
Householder	-0.364 (0.524)	0.383 (0.509)	-6.642 (6.311)	-0.023 (0.316)	0.092 (0.440)	-0.316 (1.151)
Number of Family Members	0.129 (0.149)	0.036 (0.154)	-1.840 (2.214)	0.116 (0.110)	-0.003 (0.154)	-0.212 (0.382)
σ^2_{v0}	1.167 (0.900)			0.542 (0.459)		
$\sigma_{v01}, \sigma^2_{v1}$	-0.260 (0.531)	1.355 (0.942)		0.037 (0.476)	1.186 (1.700)	
$\sigma_{v012}, \sigma_{v12}, \sigma^2_{v2}$	-2.517 (5.701)	3.859 (5.903)	93.297 (109.890)	-0.149 (0.565)	0.525 (1.691)	1.424 (2.150)
Deviance (MCMC)	768.713			1,423.657		
Case / Observation	256 / 670			421 / 1,097		

Source: KLIPS data wave6(2003) ~ wave17(2014)

Note: Parameter estimates are the modal estimates from 50,000 chains; (): Standard errors; *** = p < 0.01, ** = p < 0.05, * = P < 0.1

estimate was small relative to its standard error, there is no evidence of a correlation between the unobserved individual-level characteristics affecting the chance of exits from in-work poverty and those affecting the risk of a transition to other states.

Overall, high increases in the minimum wage had no significant impact on the distribution of family earnings of older employees. Rather, marginal increases in the minimum wage were responsible for the rise in the median of older employees' family earnings, which was presumably below 60 per cent of the median of family earnings for all employees, in regions with a high fraction of older employees who were paid below the minimum wage. High increases in the minimum wage also had no significant effect on exits from in-work poverty among older employees, but small increases in the minimum wage marginally reduced the chance for older employees in poverty to exit from it. All the results were consistent, assuming that income from labour would take up the majority of household income in an older employee's household in poverty. However, the results of the effect on the distribution of family earnings for the first five-year period may not provide a convincing evidence on the impact of high increases in the minimum wage, considering the facts that even marginal increases in the minimum wage had a significant effect on the increase in the median of older employees' family earnings and also that regional change in the employment rate significantly affected the distribution of older employees' family earnings for the first five-year period. It may imply, as mentioned earlier, that if a factor associated with the regional change in the employment rate among older employees, such as new employment of older employees' partners, is controlled, the increase in the minimum wage might have a significant effect on some percentiles of family earnings of older employees. Furthermore, the findings from OLS and fixed-effects models at the regional level, including the results of the effects on the distribution of wages and on employment and unemployment rates, should be cautiously reviewed because the difference from each corresponding comparison group was not reflected in the models. An ideal method to provide convincing evidence of minimum wage effects and the extent to which the findings answered to the two research questions addressed will be briefly discussed in the last section.

Conclusion

This chapter examined the effects of the minimum wage on the distributions of wages and family earnings, employment, and exits from in-work poverty among older employees. Regardless of the rate of increase, the minimum wage created a spike at or around the minimum wage in the distribution of wages for older employees, but a large proportion in the distribution left below the minimum wage. High increases in the minimum wage had significant effects on middle percentiles of wages among older employees while low increases in the minimum wage had only on the median of wages among them. Further, high increases in the minimum wage reduced marginally and significantly the wage gap between the highest wage bracket and the lowest or lower-middle wage brackets but changed ambiguously the gap between the middle and lowest wage brackets. Low increases in the minimum wage had marginal and significant effects on the wage gap between the highest wage bracket and the lowest or middle wage brackets. In terms of the employment effects, there was no significant correlation between the increase in the minimum wage and regional changes in employment or unemployment rates among older employees for the period with highest rates of increase in the minimum wage. By contrast, low increases in the minimum wage were negatively and significantly correlated with regional changes in unemployment rates among older individuals. As regards the effects on the distribution of older employees' family earnings, no significant effect was found for the period with high increases in the minimum wage, whereas low increases were responsible for the rise in the median of older employees' family earnings. Further, high increases in the minimum wage had no significant effect on exits from in-work poverty among older employees' households, and small increases in the minimum wage marginally but significantly reduced the chance for older employees' households in poverty to exit from it.

All the results were obtained from appropriate methods with consideration for the institutional peculiarities of the Korean national minimum wage. However, whether the results provide convincing evidence on minimum wages effects for older workers, particularly regarding the distributional effects on wages and family earnings and employment effects obtained from OLS and fixed-effects models at the regional level, should be reviewed. If equivalent data are available for before the introduction of the

minimum wage or for regions or sectors with no application of the minimum wage, the models can be tested for the difference between times in the difference between the various percentiles of wages and family earnings or employment and unemployment rates before the introduction of the minimum wage or in regions/sectors where it is not applied and their counterparts after the introduction or in regions/sectors with an increase in the minimum wage. The estimates from the models with the dependent variables which allow for the difference between treatment groups and comparison groups can provide robust evidence of minimum wage effects. The findings from the analyses in which no comparison group was set up thus can be assumed to inform of high plausibility as regards minimum wage effects by the accordance within the results. By comparison, the event history analyses at the individual level directly addressed the concerned transitions, and thus the results can be regarded as evidence of minimum wage effects for older employees. However, as mentioned earlier, if the research focus of employment effects includes the effects on new hires, or the research interest is extended, based on the results for exits from in-work poverty, to whether an increase in the minimum wage brings about the flow into in-work poverty, further examinations are needed by creating multiple starting points in individuals' transitions. These are left as future research topics as regards minimum wage effects on older workers.

Chapter Eight

Political Economy of the Impact of Minimum Wages

Introduction

This chapter explores the third research question, *how the empirical results of the minimum wage effects on older workers can be understood*, based on the political economy framework proposed in Chapter Five. Before going into the contextual analysis employing the framework for understanding the effects found in Chapter Seven, they are comprehended on the basis of economic predictions and the general rules in the economy and the labour market. In this section, to what extent the empirical results can be understood by the mainstream economic theories' explanations of minimum wage effects and in what sense further accounts are needed will be discussed. Then, the empirical results are interpreted through the contextual analysis of the implicit characteristics of the minimum wage under each government. In as much as the main goal of minimum wage policy is low paid workers' financial well-being, the discussion in the contextual analysis targets at comprehensive effects of the minimum wage for older employees in each five-year period, rather than at the results concerning individuals examined in the quantitative analyses.

Economic Interpretation of the Empirical Results

Although some were presented in the previous chapter, an economic understanding of the empirical results is needed to figure out what can be explained by the dominant economic theory and what needs to be further explained. In terms of effects on the wage distribution among older employees, spikes at or around the minimum wage but a significantly large proportion in the left tail of the wage distribution indicate that an increase in the minimum wage had a limited distributional effect with a large level of noncompliance. As mentioned in Chapter Seven, the proportion of workers paid below the minimum wage is partly related to the sub-rate for surveillance or intermittent work and the unconventional avoidance of paying the minimum wage in the transportation

sector in South Korea. Yet the fact that a sizable portion of older workers were paid much less than a minimum wage points to widespread noncompliance among employers who hire older workers. Since there are no official data sources to show the state of noncompliance, its size and causes are not known. It might be assumed that the level of a minimum wage is above the one that small businesses can afford to pay for labour. However, if noncompliance for older employees occurred with a wage policy of different pay for equal work among employers hiring older workers, why noncompliance with the minimum wage is prevalent particularly for older employees should be explained.

The results of the minimum wage effects on the wage distribution among older employees for the two five-year periods indicate that an increase in the minimum wage makes an ambiguous change in their lowest wage bracket, regardless of its rate of increase, and a minimum wage functions as a wage floor for their wage differentials in a different manner, depending on its rate of increase. The fact that high increases in the minimum wage raised the various percentiles of wages from the lower-middle to the upper-middle whereas low increases did only the median wage of older employees and that the two indicators of an increase in the minimum wage had contracting effects on the wage distribution among older employees, can be explained by different pressure that firms face with regard to an increase in the minimum wage, as mentioned in Chapter Seven. That is, the high increases impose more pressure on firms hiring older workers to lift wages from the bottom, but such pressure becomes relatively weakened with the low increases in the minimum wage, leading to ambiguous spillovers. Firms' different pressure in terms of the level of increase in the minimum wage is based on their concern about human resource available. This seems to make firms focus more on the level of wages within each group of workers with different qualifications and skills and wage differentials between them, rather than compliance with the minimum wage. This account also provides good insights into the results of the wage gap among older employees. Assuming that the results for the various percentiles of wages are the outcome of employers' different response to different level of increase in the minimum wage, the reduction of the wage gap between the upper wage bracket and the lowest or the lower-middle wage brackets, plus the ambiguous change in the gap between the

middle and the lowest wage brackets for the first five-year can be regarded as the consequence of wage rises in the lowest wage bracket likely as much as the one in the middle wage bracket and the rise in the lower-middle percentiles by the high increases in the minimum wage. By contrast, the marginal reduction in the wage gap between the upper wage bracket and the lowest or the middle wage brackets for the second five-year period can be regarded as the outcome of the ambiguous change in the lowest wage bracket, the wage rise in the middle wage bracket, and the insignificant but falling tendency in the upper percentile of wages of older employees by the low increases in the minimum wage. Despite this understanding of the effects on the wage distribution among older employees, why firms are indifferent to compliance with the minimum wage in spite of its legal sanction still remains to be answered.

The results that no disemployment effect was found either at the regional level or at the individual level, regardless of the level of increase in the minimum wage, bring up the possibility that older workers experience monopsonistic conditions in the labour market. Compared to younger workers, the number of firms and the scope of industries which offer jobs to older workers are more restricted, and the job search frictions in the labour market which lead to imperfect information about the wages provided by employers is more likely among older workers due to their limited computer literacy and propensity not to make big job moves. These may support the critical assumption of monopsony models that the elasticity of labour supply is not perfectly infinite, and thus a monopsonist faces an upward-sloping labour supply curve. The point that wages among older workers are distributed at much lower levels than among younger workers may also indicate that monopsonistic market equilibrium wage is applied to older employees. However, as critics of monopsony models argue, it is questionable that small employers hiring low paid older workers have sufficient market share to have monopsonistic power over wages. Furthermore, even if all the above assumptions of monopsony models are acknowledged as true for older workers, the neutral employment effects found in both five-year periods with very different levels of increase in the minimum wage is not properly explained with the monopsony model in which a minimum wage set at the point where the marginal cost of labour curve meets the marginal revenue product of labour curve has a neutral employment effect. Provided that the annual growth rate of

wages for all employees roughly substitutes for the point that the marginal cost of labour curve meets the marginal revenue product of labour curve, a reduction in employment should have been caused, at least during the first five-year period with one of the highest rates of increase in the minimum wage. For the minimum wage was raised twice as fast as the average annual wage for all employees during the first-five years, whereas the rate of increase in the minimum wage was as much as the annual growth rate of wage for all employees in one year and much less in another year during the second five-year period.¹ In this regard, no disemployment effect among older employees, irrespective of the level of increase in the minimum wage, still remains to be further explained.

With regard to household income, high increases in the minimum wage had no effect on the distribution of family earnings of older employees. Instead, regional change in the employment rate of older employees had a substantial impact on the distribution of their family earnings for the period with high increases in the minimum wage. Considering the results for the second five-year period that low increases in the minimum wage significantly raised the median family earnings of older employees in regions with a high fraction of those paid less than the minimum wage, no effect of high increases in the minimum wage may not be concluded. As stated earlier in Chapter Seven, if an additional covariate, such as new employment, including self-employment, of older employees' partners, is controlled, the significance of the indicators of an increase in the minimum wage might partially revive. This supposition is roughly supported by the fact stated in Chapter Six that many women started to engage in the labour market in order to prepare for plausible financial shortages in their family as the labour market became dramatically insecure from the early 2000s. Nonetheless, such an account provides only a partial clue to the insignificant effects on the distribution of family earnings among older employees and does not directly address how the effects of high increases in the minimum wage were restrained. By comparison, the result that low increases in the minimum wage for the second five-year period increased the median family earnings among older employees suggests that even a marginal increase in the minimum wage would give some benefits directly to their low-income households, in that the median family earnings for older employees are much lower than the median for all employees.

This is because older workers affected by an increase in the minimum wage are more likely to be breadwinners in their families, unlike their younger counterparts. However, the reduction in the chance for older employees to exit from in-work poverty by an increase in the minimum wage was inconsistent with the results for the distribution of family earnings among older employees for this period. A large proportion paid less than the minimum wage could give a clue to the result for their exits from in-work poverty, but the significant increase in the median family earnings among older employees had the potential to improve their chance to exit from in-work poverty. These insufficient explanations as regards older employees' family earnings and exits from in-work poverty ultimately address the questions of how the minimum wage operates in practice and for what.

As reviewed in Chapter Five, the mainstream economic explanations stress that employment effects as well as the distributional effects should be allowed for when we explore the minimum wage effects on workers' welfare. Although the quantitative analyses did not address minimum wage effects on new hires among older workers, the fact that no disemployment effect was found at both regional and individual levels implies that older employees' overall well-being may not decline as a result of the disemployment effect of the minimum wage. In particular, the insignificant effect on the transition from in-work poverty to unemployment or self-employment/non-wage family business work among older employees, regardless of the level of increase in the minimum wage, suggests that a more skilled older workers' employment is not at the expense of raising the risk of unemployment for other less skilled employees. This indicates that, with regard to the increase in the minimum wage, older employees' welfare is likely to be more involved in its distributional effects than its employment effects, which also leads to great stress on the issue of how the minimum wage operates in practice and for what. The issue is fundamentally related to the policy process of decision-making and implementation. The questions and issues addressed in this section will be further discussed in the rest of this chapter, through a contextual analysis focusing on the minimum wage fixing process.

Political Economy Construction of the Minimum Wage Effects

The economic understanding of the empirical results leaves the questions of why the increase in the minimum wage does not negatively affect older employees' employment, regardless of its level of increase, why noncompliance with the minimum wage significantly exists among older employees, regardless of its level of increase, despite the legal sanctions, and ultimately how the minimum wage operates in practice and for what. Considering that two ideologically opposing administrations reigned during the two five-year periods and that the minimum wage is a public policy shaped by political orientation and power as well as by economic forces, those questions are explored with the political economy framework proposed in Chapter Five. This contextual analysis starts with a discussion of government political orientation as regards the policy, particularly economic and labour policies, which alludes the direction of the minimum wage in its fixing and implementation. Note that the main adjustments to minimum wage policy and major political economic developments stated below are summarised in Appendix 12.

Government Political Orientation

The two administrations which were included in the research periods of the empirical study are based on contrasting political ideologies. The Roh, Moo-Hyun administration from 2003 to 2008 was the second progressive (centre-left) government in Korean political history, and the Lee, Myung-Bak administration from 2008 to 2013 was a conservative one. Notwithstanding the difference in the general political orientation and the broad policy stance, economic and labour policies in both administrations were commonly oriented towards neoliberalism, which stressed a market-centred economy regulated by the private sector rather than the public sector, by means of small government, the enhancement of business efficiency, trade liberalisation, market openness, privatization, devaluation and deregulation.²

The Roh, Moo-Hyun Administration (2003-2008)

Although President Roh, Moo-Hyun clearly defined his administration as progressive³,

the appraisal of his administration's economic policy has been controversial until recently. This controversy results from the fact that the administration used neoliberal market-driven policies mixed with Keynesian interventionist ones (Kim, K-O, 2011). Real estate policies and safety net policies were led by government interventions during his period in office, but the Roh administration maintained the neoliberal economic policies which the Kim, Dae-Jung administration, following the International Monetary Fund (IMF)'s strong recommendation under its bailout programme with the 1998 Korean financial crisis, had introduced for the reform in finance, *chaebol* (Korean conglomerates), the public sector, and labour (Kim, K-O, 2011). From the beginning of the Roh administration, economic growth was put at the top of its agenda (Kim, K-O, 2011), and it proposed an advance toward 'the era of a twenty thousand dollars GDP per capita [국민소득 2만불 시대]' as the top priority of the policy objective which was, as widely known, from *The Agenda of Government Policies and State Affairs* [국정과제와 국가운영에 관한 아젠다], an approximately 400 page-long report suggested to Roh, the then president-elect, by the Samsung Economic Research Institute (SERI), a private think tank within the Samsung Business Group (Jeong, S-H, 2008, p.29). Monetary market liberalisation aiming at a conversion into an East Asian financial hub, the expansion of trade liberalisation through the free trade agreement (FTA), and the deregulation of *chaebol* were major neoliberal strategies for achieving the objective that the Roh government adopted (Yoo, T-H, Park, J-H, Kim, S-H and Lee, S-H, 2008, quoted from Kim, K-O, 2011).

The East Asian financial hub plan was set seal on in December of 2003 with the goal of setting up the institutional foundation for the financial hub by 2007, constructing asset management industry-specialised financial hub by 2012, and developing South Korea as one of the big three financial hub in Asia by 2020 (The National Economic Advisory Council [국민경제자문회의], 2007, p.225)⁴. Based on this roadmap, the Roh government focused on building the institutional infrastructure for the growth of financial market, such as 'the capital market consolidation act [자본시장통합법]' and the liberalisation of foreign exchange transactions. The Financial Investment Services and Capital Markets Act [자본시장과 금융투자업에 관한 법률], so called, the capital market consolidation act, was legislated in July of 2007, replacing six of the then

sixteen existing financial business laws, including the Securities and Exchange Act [증권거래법], the Futures Trading Act [선물거래법], the Indirect Investment Asset Management Business Act [간접투자자산운용법], the Trust Business Act [신탁법업], the Korea Securities and Futures Exchange Act [한국증권선물거래소법], and the Merchant Banks Act [종합금융회사에 관한 법률] (The Ministry of Strategy and Finance [기획재정부]). The act introduced the negative list system, ‘which allows all products and practices except those that are specifically prohibited (OECD, 2008, p.111)’ into financial investment goods (The National Economic Advisory Council [국민경제자문회의], 2007, p.226), which led to a broadening of the scope of investment products, allowed a single firm to have the cross-ownership of securities, asset management, futures, merchant banks, and trust businesses, except banking and insurance, which would help Korean financial investment firms to grow up comparable to the global firms, such as Goldman Sachs and Morgan Stanley (Cho, S-H, 2007, p.21; Kim, D-H, 2008). The introduction of the negative list system into financial investment goods also converted regulations that had applied to financial institutions and thus contained the possibility of ‘regulatory arbitrage ’ into ‘functional regulation, under which a single regulation is imposed on a single investment service regardless of the institutions that provide it ’(Cho, S-H, 2007, p.21; Kim, D-H, 2008). The Roh government also expanded the liberalisation of foreign exchange transactions through switching over from the capital transactions approval system to a reporting system in January, 2006 (The National Economic Advisory Council [국민경제자문회의], 2007, p.226), raising the ceiling on total foreign property purchases for the purpose of investment in February, 2007 and at the same time, relaxing the procedural requirement for outward direct investment (Oh, J-R, 2010).

The Korea-U.S. FTA is also a representative neoliberal policy that the Roh government carried out in as much as it required an opening of the domestic market, ultimately in full scale, through trade liberalisation (Kim, K-O, 2011, p.290). The government set up the road map for the FTA in March, 2003, and revised it in May, 2004 as a change in the international trade environment was sensed in the course of the Doha Development Agenda (DDA) negotiation among the World Trade Organization (WTO) members, which proceeded with difficulty (Myoung, J-H, Jeong, H-S, Je, H-J and Moon, S-G,

2014, p.4). The road map aimed at reaching an agreement with countries which were able to immediately begin the negotiation, such as Singapore, Japan, Mexico, Canada, the European Free Trade Association (EFTA) states (Iceland, Liechtenstein, Norway, and Switzerland), for a short-term plan, and with countries which belonged to a large, advanced economic bloc, such as the United States, the EU states, and China, for a mid/long-term plan (The Federation of Korean Industries [전국경제인연합회], 2004, pp.5-6; Myoung, J-H, Jeong, H-S, Je, H-J and Moon, S-G, 2014, p.4). Ultimately, countries with a large, advanced economy, particularly the United States, were the key targets in the FTA plan since the Roh government perceived the FTA as a new strategy for economic growth under the US-led neoliberal order of international economy (Kim, K-O, 2011). It was expected that, facing China's rapid economic growth based mainly on manufacturing, the rearrangement from manufacturing industry-centred economic structure with high dependence on exports to a service industry-driven one would be achieved by adopting the advanced service industry through the FTA with the United States, and this would lead to a new growth drive and job creation (Lee, B-C, 2006). Until 2007, the Roh government achieved the conclusion of the FTA with 16 countries, including the United States and the EU, and preliminary negotiations with about 40 states (Kim, K-O, 2011, p.291). However, the results of the negotiation with the United States fell short of expectations in terms of opening the service sector as the former president Roh and trade experts pointed out and the Financial Times commented 'not a big deal' on the Korea-U.S FTA (Kim, Y-H, 2007).

The growing importance of business competitiveness under the neoliberal order of international economy drove the Roh government to turn its regulatory policy on *Chaebols* into deregulation of them (Kim, K-O, 2011). Facing the persistent demand and pressure from business and the worsened polarisation of wealth with the rise in unemployment, the government relaxed the regulations of large business in practice between 2004 and 2007 in order to induce their expansion of investment and employment (Kim, K-O, 2011, p.294). The Monopoly Regulation and Fair Trade Act [독점규제 및 공정거래에 관한 법률] amended in 2004 extended the scope of exemption from the regulations governing the ceiling on total equity investment [출자총액제한제도] and lowered the minimum share that a subsidiary company was required to

hold for its own subsidiary (Sung, T-Y and Kim, W-C, 2008, p.128). The further revision of the Act in 2007 sharply scaled down the scope of business entities subject to the equity invest limit from all affiliates to a business group with assets of over 6 trillion won (about £ 4 billion or \$ 5.3 billion at the exchange rate of June, 2017) to companies with assets of over 2 trillion won affiliated to a business group with assets of over 10 trillion won and raised the ceiling on the total amount of investment from 25 per cent of net worth to 40 per cent (Kim, C-H, 2007; Lee, S-K, 2007; Sung, T-Y and Kim, W-C, 2008, p.128; Kim, K-O, 2011, p.295). Varieties of regulations for a holding company were also relieved, including easing debt-to-equity ratio limit [부채비율한도 완화] and lowering the minimum share in its subsidiary company [자회사에 대한 최소지분을 하향조정] (Sung, T-Y and Kim, W-C, 2008, p.128).

The labour policy of the Roh, Moo-Hyun administration initially aimed at the creation of decent work, the construction of industrial relations for social integration, and the improvement of quality of life, through introducing labour rights at the level of global standards, relieving discrimination against non-regular workers, and adjusting the minimum wage rate to a realistic level. But, the policy was radically altered into ‘the subordinate neoliberal approach’ [종속적 신자유주의 노동체제] (Roh, J-K, 2006, p.11) within four months after the administration taking office. The approach included wage cuts through shortened working hours, labour market flexibility, the restriction on civil servant unions, the expansion of non-regular work, and the exclusion of labour from the policy-making process (Cho, D-M, 2006; Roh, J-K, 2006). Dealing with the issue of the Doosan Heavy Industry and Construction worker who burned himself as a plea for just treatment, the first rail strike, and the first unionised cargo truckers strike, which occurred around the launch of his administration, Roh showed his strong intent to reform industrial relations. However, as the second rail strike, the strike of the Korean Teachers and Educational Workers’ Union against the National Education Information System (NEIS), and the second unionised cargo truckers strike proceeded shortly, the Roh government’s inclusionary labour policy was completely abandoned (Roh, J-K, 2006, p.4). Instead, amending the Labour Standards Act [근로기준법] in August, 2003 the government reduced working hours from 44 hours a week to 40 hours, which led to a wage cut among employees (Cho, D-M, 2006, p.197). But, in the amended Act, wage

preservation provision was not clearly defined. Rather, the unit term to operate exceptions in applying working hours was extended from one month to three months, the number of paid leave was adjusted, and menstrual leave was changed from paid to unpaid in order to prevent labour costs from increasing (Kim, S-T and Kim, W-S, 2004). Also, the phased enforcement of the amendment was at odds with the original purpose of the prevention of working long hours because it applied to small and medium-sized firms, where working hours was typically very long, seven year later than its first enforcement. The Roh administration's labour policy switch was formulated by 'the advanced industrial relation plan' [노사관계선진화개혁방안], which was whopped up in one month autonomously by the Ministry of Employment and Labour and announced in September, 2003 (Roh, J-K, 2006, pp.5-6). The major feature of this plan was to legally institutionalise the so called, 'employers' right to resist labour disputes' [사용자 대항권] with the aim of minimising the cost occurred from the conflict between employers and employees, reinforcing flexibility in the labour market, and establishing law order in industrial relation (Roh, J-K, 2006, p.6; Cho, D-M, 2006, p.205). In the same vein, the Roh government brought in a bill on the protection of non-regular workers [비정규직 보호법안] in August, 2004 (Roh, J-K, 2006, p.7) and the bill on the establishment and operation, etc. of public officials' trade unions [공무원의 노동조합 설립 및 운영에 관한 법안] in October of the same year (The Confederation of Korean Government Employee's Unions [대한민국공무원노동조합총연맹], 2015). The key point of the bill on the protection of non-regular workers which was legislated later into three laws, the Act on the Protection, etc. of Fixed-Term and Part-time Workers [기간제 및 단시간근로자 보호 등에 관한 법률], the Act on the Protection, etc. of Temporary Agency Workers [파견근로자보호 등에 관한 법률], and the Labour Relations Commission Act [노동위원회법] was that a temporary, non-regular workers in service for 2 years should be changed to a permanent, regular position. But, employers can discharge a temporary, non-regular worker in service for less than 2 years legally under the laws, leading to mass dismissal. The bill on public officials' trade unions restricted the membership of civil servant unions to those who were involved only in general service but in direction and supervision, limited agenda for collective agreements, and banned political and collective actions (Roh, J-K, 2006, p.7; The Confederation of

Korean Government Employee's Unions [대한민국공무원노동조합총연맹], 2015).

The Lee, Myung-Bak Administration (2008-2013)

The former president Lee, Myung–Bak claimed to stand for neoliberalism as the keynote of economic policy from the period of his president-elect, such as ‘small government and big markets’, privatisation, deregulation, welfare reduction, and flexible labour market. More precisely, the neoliberalism that the Lee government practised for its first priority aim of economic growth was a modified neoliberal approach combined with development idea which was reminiscent of state economic management for development in the 1960s in Korea (Lee, G, 2008; Lee, J-K, 2013, p.63). The most critical goal of the Lee administration was to achieve the, so called, ‘747 election pledge [747 공약]’ which referred to sustained economic growth of 7 per cent, the era of a 40 thousand dollars GDP per capita, and the entry to the top 7 advanced states in the world. The Lee government employed as the main measures for it tax reduction, low interest, devaluation of Korean currency, business-friendly policies, and ‘the Four Major Rivers Restoration Project’[4대강살리기사업], the government’s multi-purpose Green New Deal project on Han River, Nakdong River, Geum River and Yeongsan River.

The Lee government announced the tax reform plan in September, 2008, aimed at increasing business investment and consumption in high-income bracket, expecting it leading to a trickle-down effect (Hwang, K-S and Kang, B-I, 2014, p.122). Amending the Income Tax Act[소득세법], the Corporate Tax Act [법인세법], and the Gross Real Estate Tax Act [종합부동산세법] in December, 2008, the government gradually lowered the income tax rates of all income brackets by 2 per cent, increased the deduction amount per capita of income tax from 1 million won to 1.5 million won (about £ 670 or \$ 870 at the exchange rate of July, 2017), raised the corporate taxable income from 100 million won to 200 million won (about £ 134,200 or \$ 174,000 at the exchange rate of July, 2017), lowered corporate tax from 13 per cent to 10 per cent for those with taxable income of 200 million won and less and from 25 per cent to 20 per cent for those with income of more than 200 million won, increased the criterion of the high-grade house for the real estate transfer tax from 600 million won to 900 million won (about

£ 603,800 or \$ 783,000 at the exchange rate of July, 2017), reduced the upper limit of imposing the real estate holding tax from 300 per cent of the payment in the previous year to 150 per cent, and lowered the inheritance and gift tax rate from 10~50 per cent to 6~33 per cent (The Ministry of Strategy and Finance [기획재정부], 2008).

The Lee administration also gradually lowered interest rates and weakened the Korean won against the major foreign currencies, such as the US dollar, in order to increase exports. On average for the five-year period, the government kept the Korean Bank base rate of 3.25 per cent and decreased the Korean won rate against the US dollar by about 24 per cent compared to the rate of 2007. These interventions not only led to an increase in exports, which was regarded as a main means of overcoming the global financial crisis in 2008, but also brought about rises in consumer prices. In this regard, the Lee administration has been criticised to have fattened business at the expense of the ordinary people's lives (Yoo, S-J, 2011). Its business-friendly policies are also found in the revision of regulations that the business had longed for in addition to corporate tax cut. In March, 2009, the regulations governing the ceiling on total equity investment [출자총액제한제도] was abolished by removing Article 10 of the Monopoly Regulation and Fair Trade Act [독점규제 및 공정거래에 관한 법률] in March, 2009 (Choung, W, 2014, p.104). Separation of industrial and financial capital [금산분리] was also relaxed through amending the Financial Investment Services and Capital Markets Act [자본시장과 금융투자업에 관한 법률] and the Financial Holding Companies Act [금융지주회사법] in June and July of the same year, respectively, which allowed non-financial holding companies to have a financial subsidiary (Cho, Y-H, 2015, p.20).

Along with the financial intervention and the reorganisation of legislation, the Lee administration pushed forward the Four Major Rivers Restoration Project [4대강살리기 사업] for pump-priming of the economy and job creation. The project was also in line with labour policy of the government which will be discussed below, in as much as the Lee administration pursued welfare through work and stressed 'active labour market'. It was a Korean New Deal policy in which 22.2 trillion won (about £ 14.92 thousand million or \$ 19.29 billion at the exchange rate of July, 2017) were thrown from December, 2008 to April, 2014 (The Four Major River Project Investigation &

Evaluation Committee [4대강사업조사평가위원회], 2014, p.4). Although the opposition parties, environmental organisations, and religious circles impugned the effectiveness of the project and public opposition against it was greater than supports⁵, the Lee government claimed under the banner of ‘Green Growth’ that 340-thousand new jobs were expected with the reactivation of the construction market, local economy around the four major rivers would revive with tourism, and all the benefits would lead to boosting the national economy (Gil, J-B, 2014, pp.994-995). However, the appraisal of its environmental effects has been highly controversial, and economic effects are also ambiguous in as much as the evaluations of the ripple effects on production and employment vary by research.⁶

The labour policy that the Lee administration adopted was also characterised by the combination of neoliberalism and authoritarian state intervention (Cho, H-R, 2013). In March, 2008, the Lee government proposed three key agenda on labour policy, ‘advanced industrial relationship [노사관계 선진화]’, ‘active labour market [활력있는 노동시장]’, and ‘employee-friendly labour administration [국민을 섬기는 따뜻한 노동 행정]’ (The Ministry of Labor [노동부], 2008). As against the rhetoric, the government’s top priority was the rearrangement of industrial relations and policies for flexible labour market. The government made public agencies amend their collective agreement and counted the revision into agency evaluation, in line with its plan for public agency advancement [공공기관 선진화 방안] in 2008 which mainly included privatisation, merger, abolishment, function adjustment, and personnel reduction (The Ministry of Strategy and Finance [기획재정부], 2012; Cho, H-R, 2013, pp.231-232). This brought about the reduction in paid leave, the introduction of the annual salary system, and the contraction of union activity, which led to conflicts between employers and employees in the public sector (Cho, H-R, 2013, p.232). The Lee government also revised the Trade Union and Labour Relations Adjustment Act [노동조합 및 노동관계조정법] in January, 2010 and enforced the provision of banning payment to full-time union officials, which had been deferred for 13 years, by the new ‘paid time-off’ system which allowed the union officials’ time-off only for negotiation and consultation between employers and employees, adjustment of grievance, and safety performance (The Ministry of Strategy and Finance [기획재정부], 2012, p.214). With the revision of the

Trade Union Act, the multiple trade union system was also implemented in July, 2011 (The Ministry of Strategy and Finance [기획재정부], 2012, p.215). This system allowed workers to set up more than one trade union in a single company, but the multiple unions in a company had to appoint their representative bargaining unit when they negotiated with their employer. These series of legal changes brought about weakening trade unions' activities and restricting bargaining rights of industry-based unions and minority unions (Cho, H-R, 2013, pp.233-234).

For active labour market policies, the Lee government focused not only on job creation, but also on the deregulation of employment rules and the flexibility of working hours under its perception that the barrier of job creation was labour market rigidity. Facing the sharp fall in employment caused by the 2008 global financial crisis, the Lee government made a turning point in labour market policy in 2009 through increasing spending in the government-funded job programme by 93.4 per cent compared to the previous year and injecting over 13.4 trillion won (about £ 9.04 billion or \$ 11.65 billion at the exchange rate of July, 2017) (Joo, M-H, 2015, p.7). Among the government-funded programmes which consisted of direct job creation, vocational training, employment service, employment promotion subsidies, start-up assistance, and income maintenance for the unemployed (Lee, K-Y, Kang, C-H, Kim, H-W, Kim, H-A, Park, S-J, Chang, H-I, Lee, H-C and Oh, S-H, 2013, p.1), direct job creation and employment promotion subsidies were the core government undertakings. In 2009, 3.7 trillion (about £ 2.5 billion or \$ 3.22 billion at the exchange rate of July, 2017) and 2.06 trillion won (about £ 1.4 billion or \$ 1.8 billion at the exchange rate of July, 2017) were spent for each of the two which was increased by 165.7 per cent and 110 per cent, respectively, compared to 2008 (Joo, M-H, 2015, p.7). Although the government-funded job programme was also in line with the government keynote policy of 'welfare through work', its outcome was merely a superficial achievement in employment rate in as much as jobs created by the programme, particularly through direct job creation, were mostly temporary, low paid ones. Meanwhile, in July, 2009, the government attempted to extend the employment contract terms of temporary and agency workers to 3-4 years (Cho, H-R, 2013, p.235) by revising the Act on the Protection, etc. of Fixed-Term and Part-Time Workers [기간제 및 단시간근로자 보호 등에 관한 법률] and the Act on the

Protection, etc. of Temporary Agency Workers [과건근로자보호 등에 관한 법률] under which workers should be converted into permanent position after the 2-year employment contract term. But it was frustrated facing resistance from the opposition party and trade unions who were concerned about mass production of non-regular, temporary jobs. In October, 2010, the Lee government published the National Employment Strategy 2020 [국가고용전략 2020]. This included introducing ‘saving overtime for leave scheme [근로시간저축휴가제]’, expanding ‘flexible work schedule [탄력적 근로시간제]’, broadening the scope of dispatch-permitted services, promoting private recruitment agencies, and advising to hire part-time workers in the public sector (Cho, H-R, 2013). The expansion of dispatch-permitted services and the promotion of private recruitment agencies were not implemented because of the trade unions’ strong resistance. However, the ‘saving overtime for leave scheme’ under which workers were able to use overtime hours worked for leave when needed or to fill the time with overtime after leave was enforced in July 2011 (Korea Government, 2010; Cho, H-R, 2013, pp.236-237). At the same time, the unit term of the ‘flexible work schedule,’ which allowed a worker to work for over 40 hours in a certain week without overtime allowance, provided that his average weekly working hours for 3 months were no more than 40 hours, was extended from 3 months to one year (Korea Government, 2010; Cho, H-R, 2013, pp.236-237). In May, 2011, the Ministry of Strategy and Finance advised public agencies to hire part-time workers working less than 40 hours a week over 10 per cent of new recruits and announced that the hire would be included in agency evaluation (Korea Government, 2010; Cho, H-R, 2013, pp.236-237).

The Lee government’s third agenda for labour policy, ‘employee-friendly labour administration,’ was in line with active labour market and included very broad, comprehensive strategies for expanding flexible labour market (Roh, J-K, 2008, p. 6). Among the strategies, ‘the reasonable minimum wage’ which referred to the change in the minimum wage fixing criteria and methods favourable to employers was incorporated (Roh, J-K, 2008, pp.6-7). This will be further discussed in the next section.

The Dynamics of Power

Although both governments were under the strong influence of neoliberalism and still ‘played a role as ‘the preserver of social and economic order’ rather than ‘the arbitrator of mediation’ in industrial relations’ (The Korean Industrial Relations Research Association [한국노사관계학회], 2011, pp.30-31) as did the previous administrations, their role as ‘preservers’ differed in degree, and the relations among government, employers, and employees had a different complexion. As stated in earlier section, the Roh government sought negotiation and compromise in the tripartite relations through the Economic and Social Development Commission [노사정위원회], the presidential advisory body consisting of government, employers’ organisations, employees’ organisations, and political parties. But it faced trade unions’ fierce opposition against neoliberal policies through a series of massive demonstrations and strikes and employers’ reservations about the government’s policy orientation which was particularly based on the government’s anti-business sentiment, along with the extension of economic structural power. By contrast, the Lee government excluded labour from the policy process by weakening and distorting the function of the Economic and Social Development Commission [노사정위원회] and actively and publicly reflected the demand of employers’ organisations in the policy process and decision-making (Roh, J-K, 2008). These relations were also displayed in the minimum wage fixing process. Employers and employees stood off from each other with relatively balanced power under the government’s endeavour of remaining neutral during the period of the Roh government, while employers held a dominant position in the minimum wage fixing process by taking advantage of the Lee government’s pro-business propensity.

The Roh, Moo-Hyun Administration (2003-2008)

The Roh government’s fundamental principles for industrial relations were ‘communication and compromise based on the law and rules [법과 원칙의 토대 위에 대화와 타협]’ (The Korean Industrial Relations Research Association [한국노사관계학회], 2011, p.37). However, trade unions maintained militant practices, and their series of violent collective actions made the government hostile to labour, which led to the

suspension of the Economic and Social Development Commission [노사정위원회] between April, 2004 and June, 2006 (Roh, J-K, 2006). Employers ostensibly cooperated in the government's institutional provision for enhanced industrial relations by participating in the tripartite commission but, in practice, adhered to the established strategy to neutralise unions or preclude organising unions (The Korean Industrial Relations Research Association [한국노사관계학회], 2011, p.36). Despite employees' and employers' non-cooperation, the government did not completely abandon its initial principle for industrial relations and resumed the Economic and Social Development Commission [노사정위원회] in June, 2006, although the Korean Confederation of Trade Unions (KCTU, [민주노총]) among the two umbrella labour organisations in Korea was excluded from the Commission (Roh, J-K, 2006). Based on the analysis of *The National Minimum Wage for the Year of OOOO: The Details of Deliberation and Decision* [OOOO년도 적용 최저임금 심의·결정경위], the Minimum Wage Council's annual report on minimum wage fixing process, the government's reformist intent, employees' militant behaviour, and employers' reserved manner made for a tight dynamic of power among the tripartite members in the minimum wage fixing and its system reform process, which, as a result, led to higher increases in the minimum wage and the mutual consent based on the fixing criteria under the law rather than through conventional bargaining.

The government tried to reinforce its role as a substantial arbitrator in the minimum wage fixing process to induce a rate and the system improvement under mutual agreement. It diversified the composition of human resources among the public interest members of the Minimum Wage Commission. Since the public interest members are appointed by the President based on the Minister of Labour's recommendation, they are likely to represent the government's interest. Before the Roh government, all of the public interest members consisted only of experts in economics and business administration, a few academics in law, researchers in government-funded institutions, and permanent members of the Minimum Wage Council, an affiliated organisation of the Ministry of Labour. An expert in the social field was included for the first time during the Kim, Dae-Jung government, the former progressive administration between 1998 and 2003. This implies that the minimum wage had been fixed based on

government interest in economic and business developments. Unlike the previous governments' practice, the Roh government not only enlarged the composition of academics in other disciplines than economics and business, such as sociology and social welfare, but also included the leader of a women's rights group. This suggests that the Roh government intended to include various public interests besides government's inclination and economic consideration in the minimum wage fixing process. Furthermore, the fact that two among the nine public interest members walked out and presented waivers in the first fixing decision under the Roh government when the chairperson announced by authority a vote on two very different rates demanded by representatives of employers and employees (*The National Minimum Wage for the Year of September 2003 to August 2004*, p.7) serves as counterevidence of the government's neutral intervention in the minimum wage fixing process for social cohesion through conversation and compromise. The point that the public interest members did not cast all their votes for a rate proposed either by employer members or by employee members in the following year also shows that they were not guided by the government in terms of fixing a minimum wage rate. From 2005, the public interest members enlarged their independent role in the fixing process, from exercising the casting vote to actively offering a range of negotiable rates with consideration for the statutory minimum wage fixing criteria, in order to reconcile the differences within their members and mediate between employer and employee representatives.

The Roh government's neutral stance in the minimum wage fixing process does not mean that it never influenced the policy process nor presented its interest regarding the minimum wage. The diversification in the composition of human resources among the public interest members prompted the Minimum Wage Commission's commitment to the improvement of various issues in the minimum wage fixing process by increasing the activities of committees inside and outside the Commission. As the Commission decided in 2005 to ratify the suggestion made in the plenary session after a review by the research committee, in response to the employee members' demand to set up a new committee for improving the minimum wage system (*The National Minimum Wage for the Year of September 2005 to December 2006*, p.5), the function of the research committee to aid the Commission's deliberation became more active and wider. The

members of the research committee are not the members of the representative groups in the Commission but researchers from business organisations, labour bodies, and labour-related research institutes who were appointed by the Minimum Wage Council. The research committee mainly looked over the feasibility of the minimum wage by industry and reviewed the annual study of living costs published by the executive office of the Minimum Wage Council before the start of a deliberation period. However, as the necessity of the discussion on the minimum wage system improvement was issued by employee members and agreed by other members of the Commission, the research committee held meetings more frequently and gained more standing to identify the problems of statistical data for the minimum wage fixing criteria, including living costs, employees' wage level, labour productivity, and income distribution, provide alternatives, and study about diverse matters addressed by government as well as by each representative group in the Minimum Wage Commission. The operating committee within the Commission also expanded its role in the fixing process and actively mediated between employer and employee members, aiming at inducing them to reach a mutual agreement. The operating committee comprises the chairperson of the Commission and two members from each representative group who are the most influential in each group. Until early in the Roh government, the committee had typically held a meeting once right before the start of deliberation to negotiate schedule and adjust agenda for discussion. From 2006, the operating committee instantly held a meeting whenever the conflict between employer and employee members increased due to either side's refusal of concessions for consultation in the plenary session and tried to reduce the gap in rates demanded by employer and employee groups and to prevent the worst scenario of either side's walkout or resignation before the decision, which had often occurred.

On the government's neutral stance in the minimum wage fixing process, the competition in the process during the five-year period can be summarised as employees' persistently strong stance for higher rates and the system improvement and employers' reluctant response in negotiation and compromise with a suspicion of the government's 'business-oppressed' position. Employee representative members consistently made a strong demand for an over-35 per cent increase in minimum wages, except in the last

year of the government, claiming that a rate should be at least the 50 per cent level of employees' average wage (The sections of Employee Representatives' Proposal in *The National Minimum Wage for the Year of September 2003 to August 2004, of September 2004 to August 2005, of September 2005 to December 2006, of 2007, and of 2008*). By contrast, employer members made an initial suggestion of an increase in the rate of between 2.4 per cent and 3.5 per cent, on the grounds of the growth rate of labour productivity or the optimal rate of wage increase which was calculated by subtracting the rate of increase in employment from the real GDP growth rate plus the rate of increase in consumer price (The sections of Employer Representatives' Proposal in *The National Minimum Wage for the Year of September 2003 to August 2004, of September 2004 to August 2005, of September 2005 to December 2006, of 2007, and of 2008*). At the same time, employer representatives resolutely warned about the risks relating to structural power, including dismissal, reduction in new hire, emigration of labour-intensive firms, financial difficulties of small and medium-sized business which employed over 80 per cent of the labour force, in particular of export firms suffering from high prices of oil and raw materials, unstable exchange rates, and the fixation of low growth (The sections of Employer Representatives' Proposal in *The National Minimum Wage for the Year of September 2003 to August 2004, of September 2004 to August 2005, of September 2005 to December 2006, of 2007, and of 2008*). Such position of employer members in the fixing process during this period can be understood as their defensive reaction to the 'business-unfriendly' government, in as much as they firmly claimed to freeze the minimum wage rate in the last year of the Roh government with no further argument (The section of Employer Representatives' Proposal in *The National Minimum Wage for the Year of 2008*).

Employer and employee members opposed each other, especially with regard to the fixing criteria. Employees stressed that the reference average wage should be the mean wage which was calculated on the basis of the fixed monthly salary (basic monthly salary plus fixed monthly allowances) among full-time workers in firms with five employees and more, rather than the median, because the median much less than the mean would not improve the big gap in wage and income between regular and non-regular employees (The sections of Employee Representatives' Proposal in *The*

National Minimum Wage for the Year of September 2003 to August 2004, of September 2004 to August 2005, of September 2005 to December 2006, of 2007, and of 2008).

Employers stuck to the average labour productivity for three years among low-paying firms with low ability to pay, arguing that the minimum wage already reached the level of over 50 per cent of all employees' wages when allowances other than the fixed monthly salary were included in calculation, which should be taken into account because of the unique Korean wage system (The sections of Employer Representatives' Proposal in *The National Minimum Wage for the Year of September 2003 to August 2004, of September 2004 to August 2005, of September 2005 to December 2006, of 2007, and of 2008*). The different focus between employer and employee groups with regard to the fixing criteria led to tendentious conflict in the fixing process. In 2003 and 2005, employee members walked out of a Commission's plenary session, presented waivers, and boycotted voting for fixing a minimum wage rate (*The National Minimum Wage for the Year of September 2003 to August 2004*, pp.7-8, and *of September 2005 to December 2006*, p.7). Specifically in 2003, the two umbrella labour organisations, the Korean Confederation of Trade Unions (KCTU) and the Federation of Korea Trade Unions (FKTU) raised objections on points of procedure and urged reconsideration of the rate fixed after the Minister of Labour's official announcement of the new rate (*The National Minimum Wage for the Year of September 2003 to August 2004*, pp.13-14). However, as the government added the income distribution ratio as a statutory fixing criterion in the Minimum Wage Act amended in May 2005, this brought about the revision of indices for the fixing criteria, stressing the improvement of workers' life. The Minimum Wage Commission realigned the indices for each fixing criterion on the ground of research from 2005 and aimed at relieving the wage gap by achieving 50 per cent of the median wage in phase from 2006 (*The National Minimum Wage for the Year of 2007*, p.47). The Commission urged employer and employee members to use the indices for fixing criteria in their revised rate demands. It seems that the changes in the Commission had an effect, to a degree, in as much as the final rates of increase suggested by employer and employee members were very close in 2006 and identical in 2007. Nonetheless, the tension with regard to fixing a minimum wage rate persisted until the end of the Roh government. In 2006, employer members proposed a rate which was close to employee members' one, but they opposed the 0.29 per cent higher rate

which the public interest members finally suggested in order to induce a mutual agreement between employer and employee members (*The National Minimum Wage for the Year of 2007*, p.12). In 2007, employers claimed to freeze the minimum wage rate for the first time during the Roh government as mentioned earlier (*The National Minimum Wage for the Year of 2008*, p.192).

The improvement of the minimum wage system was another arena of conflict between government, employer representative members, and their employee counterparts. In response to the employee representatives' suggestion in 2003, the Minimum Wage Commission set up a committee for system improvement within the Commission in 2004 (*The National Minimum Wage for the Year of September 2004 to August 2005*, p.5). However, it was agreed in the following year that the Minimum Wage Commission would ratify the recommendations that the research committee made based on their review and study of issues addressed as regard system improvement (*The National Minimum Wage for the Year of September 2005 to December 2006*, p.5). Many issues were addressed in the Minimum Wage Commission. The preservation of wage cuts by the reduction of statutory working hours⁷, the curtailed rate for surveillance and intermittent work, the curtailed rate for older employees, the inclusion scope of taxi drivers' salary items in calculating the minimum wage, and the issue of janitorial and security service contracts in the public sector were the issues which were given particular attention to and related to older workers. Employee members argued that a monthly minimum wage rate, as well as an hourly one, should be notified until the reduction of statutory working hours was applied to all firms and compelled in order to prevent the benefits of an increase in the minimum wage from being reduced due to the reduction of working hours (*The National Minimum Wage for the Year of 2007*, p. 24, p.98). They also claimed that among taxi drivers' salary items, the remainder that taxi drivers had after paying the required amount of their daily earnings to their company should not be included in calculation in the minimum wage (*The National Minimum Wage for the Year of September 2005 to December 2006*, p.30; *The National Minimum Wage for the Year of 2007*, pp. 23-24, p.99) and that the janitor and security service contracts in the public sector should be enhanced for contract employees so that they may benefit from a new minimum wage (*The National Minimum Wage for the Year of*

September 2005 to December 2006, p.31). Except for the issue of the public sector, which was chosen as recommendations to the government in 2006, employers sharply opposed the employees' arguments. They contended that the amended Labour Standard Act had the appropriate measure to prevent wage cuts caused by the reduction of statutory weekly working hours and employees' suggestion of compulsory compliance with both monthly and hourly rates would bring about huge increases in labour costs (*The National Minimum Wage for the Year of 2007*, p.24, p.41). They also argued that a variety of allowances that taxi drivers were regularly paid should be included in calculation in the minimum wage because those took a large portion of the pay due to the unique wage composition of taxi drivers (*The National Minimum Wage for the Year of 2007*, p.22). Although employer and employee members agreed to choose the issue regarding the taxi drivers' pay for recommendations to the government in 2006, they only demanded a broad enhancement in calculation mode of the minimum wage among taxi drivers, without a mutual consent on a specific opinion.

Meanwhile, the Minimum Wage Act amended in May 2005 applied the curtailed minimum wage rate from January 2007 to surveillance or intermittent work in which workers had been exempt from the minimum wage due to their exclusion from the application of the Labour Standard Act under Article 63, Clause 3 of the Act, as mentioned in Chapter Six. Employers instantly expressed their concern that it would bring about mass discharge among employees engaged in those jobs, especially older workers since the majority in those jobs were workers aged 55 and older (*The National Minimum Wage for the Year of September 2005 to December 2006*, pp.40-47). It seems that the government paid most attention to the employers' concerns, along with the rapid population ageing, in as much as the executive office of the Minimum Wage Council asked the Minimum Wage Commission to discuss about the feasibility of a curtailed minimum wage rate to older workers in 2006 (*The National Minimum Wage for the Year of 2007*, pp.22-23). While employers welcomed this, claiming that a 30 per cent curtailed subminimum would help stable employment among older workers, employees opposed a subminimum rate to older workers but suggested the provision to support firms hiring older workers (*The National Minimum Wage for the Year of 2008*, p.40). After conducting a study about older workers and obtaining legal advice, the discussion

on the issue was developed into seeking a measure to help firms hiring older workers, despite employers' persistent support for a curtailed rate to older workers, mainly because it was advised by the Ministry of Labour that a subminimum for older workers would violate the Act on Prohibition of Age Discrimination in Employment and Elderly Employment Promotion [고용상 연령차별금지 및 고령자고용촉진에 관한 법률].

The Lee, Myung-Bak Administration (2008-2013)

As implied in its principle for industrial relations, 'labour-management relations base on the law and rules [법과 원칙의 노사관계]' (The Korean Industrial Relations Research Association [한국노사관계학회], 2011, p.37), the Lee government foreclosed 'communication and compromise' with labour in the policy process, and instead, urged labour-management cooperation at the business level by the rule of law (Roh, J-K, 2008, p.2). The weakened function of the Economic Social Development Commission [노사정위원회] during the Lee government demonstrates the point. Although the Commission was not abolished despite the Lee administration's downscaling or abolishing of the established commissions within government, its role was diminished and distorted from formulating fundamental labour policies through the production of various agenda to discussing issues limited to the legislation and amendment of laws and regulations and legitimising the government-led labour policies (Roh, J-K, 2008, p.10). Trade unions were against the Lee government's business-centred policy orientation, but the fact that the government took office with overwhelming support from the public in both of the presidential election in 2007 and the general election in 2008, while the Labour Party having supported the trade unions suffered heavy losses in the general election and intraparty factionalism, weakened the trade unions' labour disputes (Roh, J-K, 2008, p.4). On the other hand, employers played a leading role in the reform of labour regulations. Immediately after the Lee government took office in 2008, five business organisations, including the Federation of the Korean Industries (FKI) [전국경제인연합회] and the Korea Chamber of Commerce and Industry (KCCI) [대한상공회의소], submitted a report which recommended reforms in 267 business-related regulations to the Ministry of Knowledge Economy [지식경제부] (Roh, J-K, 2008, p.2). Their proposal was later developed into 'the Policy Plan for Advanced

Labour Market' by the Ministry of Knowledge Economy and initiated by the Ministry of Labour (Roh, J-K, 2008, p.2). This dynamic between government, employers, and employees was reflected in the minimum wage fixing process. Although each committee inside and outside the Minimum Wage Commission functioned and the procedures of fixing a minimum wage rate and revising the system were executed as realigned during the previous five years, the Lee government increased its leverage to a limited extent in the minimum wage fixing process. Employers persistently pushed their strong claims under the pro-business administration, whereas employees maintained consultation and compromise in a relative sense for the first two years but displayed militant approaches from the third year of the Lee government, such as interruption to voting on fixing a rate and nonparticipation in the Commission for the last two years.

The Lee government heralded its intentions in minimum wage policy by replacing academics in the social field with experts in economics and business and researchers in government-funded organisations among the public interest members. As all of the public interest members finished their three-year service in April 2009, the Lee government appointed six academics in business administrations, economics, and consumer science, one expert in a government-funded organisation, one permanent member of the Minimum Wage Council, and one professor in social welfare to the public interest representatives in the Minimum Wage Commission (*The National Minimum Wage for the Year of 2010*, p.81). In 2012, at the appointed time to replace the representative members in the Commission, the Lee government filled the public interest group with five academics in business administration, economics, and consumer science, three researchers in the government-funded institutes, and one permanent member of the Minimum Wage Council (*The National Minimum Wage for the Year of 2013*, p.63). The transformed composition of the public interest members, who were appointed by the President based on the Minister of Labour's recommendation, implies that the government focused on 'contributing to the sound development of the national economy' more than 'to stabilise workers' life and to improve the quality of the labour force' as the purpose of the minimum wage.⁸

Such point is more clearly displayed in the range of growth rates of the minimum wage which the public interest representatives initially suggested during the five years for mediating between employer and employee members and the reference criteria which they used for the range. They suggested 4.1 per cent to 8.9 per cent in 2008, 0.4 per cent to 4.6 per cent in 2009, 4 per cent to 6.1 per cent in 2010, 2.9 per cent to 10.9 per cent in 2011, and 2.6 per cent to 10.5 per cent in 2012 (*The National Minimum Wage for the Year of 2009*, p.81, *of 2010*, p.22, *of 2011*, p.20, *of 2012*, p.24, *of 2013*, p.17). These ranges are distinctively lower than the ones suggested in the period of the Roh government, which were 7.5 per cent to 13.5 per cent in 2005, 10.6 per cent to 13.1 per cent in 2006, and 5.3 per cent to 11.2 per cent in 2007 (*The National Minimum Wage for the Year of September 2005 to December 2006*, p.5, *of 2007*, p.30, and *of 2008*, p.49). The lowered range of growth rates of the minimum wage resulted from different reference indices for fixing criteria applied. The public interest members during the Lee government produced the range based mainly on economic growth rates, the rate of increase in consumer prices, and the rate of increase in bargained wage in fixed monthly salary or in total monthly pay (*The National Minimum Wage for the Year of 2009*, p.81, *of 2010*, p.22, *of 2011*, p.20, *of 2013*, p.19). This is in contrast to the fact that the optimal rate of wage increase ((the real GDP + the rate of increase in consumer price) – the rate of increase in employment), the surplus in the living costs among employees compared to the rate of increase in consumer prices, and the award for relieving three- or five-year wage gap were considered for the range of growth rates of the minimum wage by the public interest members during the Roh government (*The National Minimum Wage for the Year of 2007*, p.30, *of 2008*, p.49). Although the public interest members in the Lee government took account of the award for improving the wage gap in 2008, no reference index for the 0.6 percentage point applied was clarified (*The National Minimum Wage for the Year of 2009*, p.81), which was much lower compared to the 3.7 percentage points or 6.7 percentage points applied in the previous years (*The National Minimum Wage for the Year of 2007*, p.30, *of 2008*, p.49). From 2009, the public interest members did not consider an index regarding wage gap for the range of growth rates of the minimum wage, and in 2011, they did not clarify any reference index for their suggested range.

Employer representative members took a hard-line stance in the minimum wage fixing process all through the Lee administration. They demanded cutbacks in the minimum wage rate by 5.8 percentage point in 2009 (*The National Minimum Wage for the Year of 2010*, p.215) as well as freezing the rates in other four years during the five-year period (*The National Minimum Wage for the Year of 2009*, p.222, *of 2011*, p.105, *of 2012*, p.95, *of 2013*, p.79). As the basis of their demands, it was argued that the minimum wage increase exceeded labour productivity, which aggravated labour costs in small businesses, and its level already reached over 50 per cent of the median fixed monthly salary among full-time employees in firms with one and more workers, being much higher than the minimum cost of living defined by the National Basic Living Security Act [국민기초생활보장법] (The sections of Employer Representatives' Proposal in *The National Minimum Wage for the Year of 2009-2013*). Sticking to their claims, employer members increased the growth rate of the minimum wage mostly by less than 1 per cent in the revision from their initial rate demands until the public interest members suggested a range of growth rates (*The National Minimum Wage for the Year of 2009*, p.81, *of 2010*, pp.95-96, *of 2011*, pp.131-132, *of 2012*, p.124, *of 2013*, p.106). Moreover, some of the employer members in 2008 and all of the members in 2010 and in 2012 abstained from voting and walked out of the plenary session in opposition to the final rates suggested for vote by the public interest members (*The National Minimum Wage for the Year of 2009*, p.22, *of 2011*, p.128, *of 2013*, p.104).

Compared to employer members, employee representatives took a relatively moderate position in the minimum wage fixing process for the first two years of the Lee government. Employee members demanded a 26.3 per cent increase in the minimum wage in 2008 and a 28.7 per cent increase in 2009, which were about 10 per cent less than the rates of increase demanded by employee members during the Roh government but based on the same criteria as before, 50 per cent of the mean of fixed monthly salaries among full-time employees in firms with five and more workers (*The National Minimum Wage for the Year of 2009*, p.193, *of 2010*, p.205). Although they resisted the employer representatives' small revision of rate demands by walking out of a plenary session for discussion in 2008 (*The National Minimum Wage for the Year of 2009*, pp.20-21), employee members largely reduced their demands for a high rate of increase

and agreed with members in other two representative groups to the rate finally suggested by the public interest members in 2008 and 2009 (*The National Minimum Wage for the Year of 2009*, p.81, *of 2010*, p.65). But, employee members radically changed their stance from 2010, having a grievance against employer members' repeated demand to freeze the minimum wage rate and refusal to revise it, the low rates of increase suggested by public interest members, and the appointment procedure and composition of public interest representatives. In 2010, employee members staged a rally by taking over a conference room in the Minimum Wage Council after employer members announced the initial demand to freeze the minimum wage rate. Although they participated in vote at the final plenary session of the Minimum Wage Commission, employee members continued the strike as employer members refused to revise their demand (*The National Minimum Wage for the Year of 2011*, pp.12-21). In 2011, three employee members from the Federation of Korea Trade Unions presented waivers and walked out, opposing the range of growth rates suggested by public interest members, and four members from the Korean Confederation of Trade Unions restrained representative members in other groups from voting in the final plenary session as well as refused themselves to vote (*The National Minimum Wage for the Year of 2012*, pp.25-31). During the demonstration, employee members demanded the resignation of the chairperson in the Minimum Wage Commission and a debate on the organisational structure and operation of the Commission. In 2012 when all of the public interest members were replaced due to the termination of their office, employee members addressed the method of appointing public interest members but faced a negative response from a director general from the Minister of Labour (*The National Minimum Wage for the Year of 2013*, p.6). This led to employee members' nonparticipation in the Commission until the end of the deliberation period in the year, except the first plenary meeting (*The National Minimum Wage for the Year of 2013*, p.104).

As the competition between employer and employee members was intense in fixing a rate of increase in the minimum wage itself, and the Minimum Wage Commission was limping along on employer and employee members' walkouts and boycotts of discussion and votes during the Lee government, fixing criteria and the agenda for improving the minimum wage system were rarely discussed within the Commission in

practice during this period. For the first two years of the Lee government, employer and employee members' demands on the modification of reference statistical data, on which a variety of indices for the four statutory fixing criteria and the influence rate of a minimum wage were produced, the issues of salary items included in calculation of the minimum wage, particularly among taxi drivers, the application of reduced minimum wage rate to older workers, and the expansion of regulations on the prime contractor's responsibility for employees from subcontractors to be paid at least a minimum wage rate were discussed through a forum and a workshop held after the deliberation period as well as in the Commission's plenary session (*The National Minimum Wage for the Year of 2009*, pp.15-16, pp.235-245, of 2010, p.12, pp.232-246). With the help of the research committee's review and research before and after the deliberation (*The National Minimum Wage for the Year of 2009*, pp.45-75, of 2010, pp.49-60), the representative groups were not sharply against each other with regard to the issues addressed. They agreed to make recommendations to government, such as tightening inspection and oversight of noncompliance, improving janitorial service contract in public sector, supporting small businesses with tax relief, and realigning employment and wage-related statistical data in these two years (*The National Minimum Wage for the Year of 2009*, p.96, of 2010, pp.99-121). But, in 2010, only employer and employee representatives' claims relating to reference statistical data for the fixing criteria and the influence rate of the minimum wage, which was included in their report submitted to the Minimum Wage Council at the beginning of the deliberation period, were in priority discussed in the research committee that had no authority to make decisions (*The National Minimum Wage for the Year of 2011*, pp.42-69). Although the recommendation to government was made in 2011, it was not through discussion and consultation between the tripartite representative groups in the Commission. Instead, there was an agreement that the research committee reviewed the employer and employee groups' demands presented in their reports and then the operating committee chose the final issue for recommendation to government, under the pressure of the time limit in deliberation period caused by fierce confrontation between employer and employee members on the rate of increase in the minimum wage (*The National Minimum Wage for the Year of 2012*, p.31). Further, as employee members did not attend the Commission in 2012, except for the first plenary session, no issue, other than the

method of appointing public interest members that employee members addressed in the first plenary session, was dealt with for the deliberation period of the year.

Implicit Characteristics of Minimum Wages

The dynamics of power between government, employees, and employers presented in the minimum wage fixing process shows the course that each administration followed to reach its own aims with regard to the minimum wage. As the Roh government pursued ‘the minimum wage at a realistic level’ whereas the Lee government sought ‘the reasonable minimum wage,’ as mentioned in the earlier section of government policy orientation, the minimum wage increased at high rates during the Roh government but at low rates for the Lee government period. However, more important is that the course of the dynamics between government, employers, and employees presented in the minimum wage fixing process implies distinctive characteristics of the minimum wage in each government period, which led to different sets of economic effects of the minimum wage.

The Roh, Moo-Hyun Administration (2003-2008)

The minimum wage increased at higher rates during the Roh government is characterised as the preservation of low paid workers’ monthly pay which was curtailed by the reduction of the statutory working hours. As stated earlier, the statutory working hours were shortened in phase from 44 hours per week to 40 hours per week since July 2004 by the revision of the Labour Standards Act in August 2003. The preservation of low paid workers’ monthly pay on top of an increase in the minimum wage was one of the most controversial issues in the Minimum Wage Commission during the period of the Roh government. Employee representative members argued that a minimum wage should be released in monthly rates for both 44 and 40 weekly working hours (226 and 209 monthly working hours, respectively) as well as in an hourly rate so that the monthly salary among low paid employees in firms to which reduced weekly working hours were applied should be preserved based on a new rate of increase in the minimum wage (*The National Minimum Wage for the Year of September 2004 to August 2005*, p.29, of 2007, p.98, of 2008, p.145). They provided an example that a minimum wage

worker in firms with 44 working hours per week was paid a 9.2 per cent higher monthly salary in 2006, compared to in 2005, whereas a counterpart in firms with 40 working hours per week received only 0.9 per cent higher monthly pay, based on the hourly minimum wage rate of 2006 (*The National Minimum Wage for the Year of 2007*, p.98). But, this demand was not agreed in the Minimum Wage Commission because it faced determined opposition from employer representative members who claimed that the amended Labour Standard Act contained sufficient provisions for the preservation of possible cut in workers' pay caused by the reduced statutory weekly working hours, as shown in the earlier section on the dynamics of power. As a result, low paid employees in firms which implemented a 40-hour week were likely to benefit significantly less from an increase in the minimum wage, despite its high growth rates during the period. Instead, the monthly salary paid to minimum wage employees in firms implementing a 40-hour week was likely to be preserved at the previous level of monthly pay for 44 hours through a high rate of increase in the minimum wage. The interview research on janitorial service contract firms, which was conducted by the Minimum Wage Council in May 2006 to investigate the influence of the reduction in statutory working hours and the minimum wage, shows the point. Fifty per cent of establishments responded that they increased rest time and decreased fixed working hours, although the real working hours was the same as before, so that their payroll costs were not changed (*The National Minimum Wage for the Year of 2007*, p.127). This practice to preserve monthly pay at the previous level through a high increase in the minimum wage seems to have been prevalently employed in a variety of low-paying service sectors, in as much as adjusting working hours through increasing the intensity of labour is relatively flexible in those sectors. Compared to service industries, the sectors in which task attributes did not allow employers either to increase rest time or to decrease the real working hours, such as manufacturing, tended to increase overtime after the reduction in the statutory working hours. According to the Minimum Wage Council's annual visiting research in 2007, three manufacturing firms among six multiple industry respondents answered that they increased overtime along with the introduction of 40 weekly working hours because the legal working hours were shortened (*The National Minimum Wage for the Year of 2008*, p.110, p.117, p.123). Similarly, a survey of firms' responses to the introduction of the reduction in the statutory working hours, which was conducted by

the Korea Employers' Federation in 2006, showed that the real working hours rarely changed in 56.7 per cent of respondent manufacturing firms while it decreased a little in 41.9 per cent of them (The Korea Employers' Federation [한국경영자총협회], 2006, p.157). Also, 38.0 per cent of respondent non-manufacturing firms did not change in the real working hours, whereas 58.0 per cent reduced the hours (The Korea Employers' Federation [한국경영자총협회], 2006, p.157). The Korea Employers' Federation made an interpretation of the results that firms in manufacturing sector were more likely to increase overtime along with the reduction in the statutory working hours, due to their relatively heavy workload compared to the firms in non-manufacturing sectors (The Korea Employers' Federation [한국경영자총협회], 2006, p.157). Obviously, low paid workers in firms which increased overtime were likely to benefit more significantly from the higher increase in the minimum wage, despite the function of a minimum wage preserving the previous monthly salary, because of the increased overtime rate resulted from a high growth rate of the minimum wage as well as due to the maintenance of working hours through overtime.

This peculiarity of the minimum wage during the Roh government explains considerably the effects of the minimum wage on the distributions of wages and family earnings and on employment among older employees for the first five-year periods presented in Chapter Seven. Recollecting the fact in Chapter Six that a large portion of older workers aged between 55 and 79 were hired in the low-paying service sectors, the role of a minimum wage to preserve monthly pay at its level in 44 weekly working hours partly explains the insignificant disemployment effect of the minimum wage for older workers during this period. Since the role restrained wage increases among a large proportion of low paid older workers, especially engaged in service sectors, the labour costs of employers hiring them were not so significantly affected as to reduce employment. Nonetheless, the facts that some employers who implemented a 40-hour week were likely to raise wages in need of the maintenance of working hours through overtime and that the curtailed statutory working hours were not yet applied to firms with less than 20 employees for this period support the small but significant effects of the minimum wage on the wage distribution among older employees. In parentheses, the practice of employers' wage differential between employees with different skills or

years of service explains the spillovers in the wage distribution among older employees. According to the annual visiting research conducted by the Minimum Wage Council, three out of six respondent employers answered that they increased wage rates for employees paid over a minimum wage at the growth rate of a minimum wage or more in 2006, and five out of six employers responded that they raised wage rates for workers paid over a minimum wage for wage differential between employees with different skills or years of service in 2007 (*The National Minimum Wage for the Year of 2007*, p.69, p.74, p.78, *of 2008*, p.100, p.110, p.116, p.123, p.129). However, the role of the minimum wage to preserve monthly pay for this period seems to bring about insignificant effects on the distribution of family earnings of older employees and on their exits from in-work poverty. Considering the fact that firms with less than 20 employees comprised 96.8 per cent of all establishments and hired 54.2 per cent of all employees in 2006 (The Korean Statistical Information Service (KOSIS) [국가통계포털], 2006), roughly 50 per cent of employees' monthly pay remained at a previous level due to the curtailed statutory working hours for this period, and this suggest that their family earnings rarely increased without a new hire among their family members. Accordingly, the increases in hourly wages for the other half by the high increases in the minimum wage may not sufficiently enhance the rate of increase in annual family earnings among the whole employees. This also provides a clue to the insignificant minimum wage effect on exits from in-work poverty, in as much as the main income source of households in in-work poverty would be family members' earnings.

The exemption from the minimum wage of and the subminimum wage for surveillance or intermittent work introduced in 2007 is another critical factor explaining the results of the minimum wage effects for older employees, in particular, of a large proportion of those paid below the minimum wage. The majority of those engaged in surveillance or intermittent work are older workers aged 55 and over who are typically working as building managers or caretakers. According to the analysis of those engaged in surveillance or intermittent work, which was conducted by the Korean Contingent Workers' Centre [한국비정규노동센터] (2004, p.61), using the Wage Structure Survey [임금구조기본통계조사] for the year of 2002, 69.1 per cent of those engaged in surveillance or intermittent work was building managers or caretakers, and 70.9 per cent

of building managers or caretakers was those aged 55 and older. The study also found that 97.5 per cent of building managers and caretakers was paid less than a minimum wage, on average, at the rate of 75.0 per cent of the minimum wage, less than 2.5 per cent of employees engaged in other types of surveillance or intermittent work was paid, on average, between 80 per cent and 92 per cent of the minimum wage, and older workers aged 55 and over were roughly from two times to four times more likely to be paid below the minimum wage than younger workers in surveillance or intermittent work (The Korean Contingent Workers' Center [한국비정규노동센터], 2004, pp.69-70). The fact that older workers were more often paid less than the minimum wage than younger workers in surveillance or intermittent work implies that paying less to older workers was likely to be widespread in other low-paying service or elementary work in which older workers were largely engaged. In this regard, the exemption of those engaged in surveillance or intermittent work from the minimum wage until 2006 can be thought to have functioned virtually as the exemption of older employees from the minimum wage. The fact that the executive office of the Minimum Wage Council addressed the feasibility of a subminimum for older workers in response to employer representatives' concern as regards the implementation of the subminimum for surveillance or intermittent work shows the point. Further, the subminimum for surveillance or intermittent work did not have the capacity to push the part below the minimum wage towards the right in the distribution of wages among older employees when it was introduced. It was fixed as 70 per cent of the normal minimum wage rate in 2007, which was lower than 75 per cent, the average wage of those engaged in surveillance or intermittent work before its implementation. Only in 2008 did the subminimum have the potential to raise the wages of those who had been practically exempted from the minimum wage above the wage level practiced in the exemption. It increased to 80 per cent of the normal minimum wage rate, and, this, as a result, brought about a 6.2 per cent higher rise in the subminimum than the rate of increase in the normal minimum wage rate, even if the curtailed statutory weekly working hours were applied. These points imply that the ambiguous change in the lowest wage bracket resulted from employers' wage practices for their low paid older employees based on the exemption from the minimum wage but responding to the high rate of increase in the minimum wage in consideration of employees' pay cut by the curtailed statutory

working hours. The insignificant effect on exits from in-work poverty can be also understood as an outcome that the practical exemption of older workers from the minimum wage during this period prevented those paid less than the minimum wage from obtaining it and deprived older employees' households in poverty of the chance to break out of it.

Along with the exemption of those engaged in surveillance or intermittent work from the minimum wage and the subminimum for them, noncompliance with the minimum wage is the major reason that older workers were paid below the minimum wage. The minimum wage has become known to the public since the mid-2000s as the number of non-regular workers sharply increased with the dramatic change in economic conditions and labour market. Even some employers as well as employees and the public did not know about the minimum wage during the Roh government period. In the Minimum Wage Commission's visiting survey in 2007, two out of six employers responded that they only knew the minimum wage rate or were not interested in the minimum wage, and two of six employees answered that they did not know about it at all or knew only the then rate (*The National Minimum Wage for the Year of 2008*, p.100, p.105, p.130). The violation of the minimum wage was not an object of crackdown and penalty but an object of inspection and advice, according to the descriptions in a brief report on actions taken by a branch office of the Ministry of Labour which was provided in the Minimum Wage Commission in 2007 (*The National Minimum Wage for the Year of 2008*, pp.137-139). Further, the inspection and advice were typically concentrated on small businesses hiring youths and foreign workers, given the fact that the report provided by a branch office of the Ministry of Labour specified those as vulnerable workers (*The National Minimum Wage for the Year of 2008*, p.137). This implies that older workers were not widely recognised as a group to be protected by the minimum wage during this period. The results of an opinion survey on the subminimum for older workers conducted in the Minimum Wage Commission's annual visiting research in 2007 support this contention. The majority of the respondent employers answered that a subminimum for older workers would be reasonable in terms of their relatively low productivity and helpful for their employment (*The National Minimum Wage for the Year of 2008*, pp.95-96). This perception of older workers seems to be internalised in older workers, themselves.

Although limited, a premise of discussion in the Conference for the 20th Anniversary of the National Minimum Wage in 2006 and the responses of employees interviewed in the Minimum Wage Commission's field investigations reflect this point. The report of the conference which was attached to the Minimum Wage Council's annual report for the year of 2007 stated:

While a large number of older workers want to work paid even below the minimum wage, employers are unwilling to hire them; in this regard, measures to apply the minimum wage flexibly are needed to be sought for the improvement of employment opportunity among older workers. (*The National Minimum Wage for the Year of 2007*, p.137)

In the same vein, an employee aged over 55 who worked at a men's clothing manufacturing firm said:

Because the level of the minimum wage is very high, many of friends around my age are hard to be hired. (*The National Minimum Wage for the Year of 2008*, p.115)

An older caretaker also responded:

I heard from acquaintances working in other security firms that many older employees have been dismissed since the minimum wage was newly applied to surveillance or intermittent work. I am very unhappy with the application of the minimum wage to this work because it threatens my employment. (*The National Minimum Wage for the Year of 2008*, p.129).

The Lee, Myung-Bak Administration (2008-2013)

The minimum wage fixed during the period of the Lee government which increased at the lowest rate among all of the governments is characterised as the maintenance of wage level for strengthening business competitive power, leading to the development of the national economy. As shown in the earlier section on the dynamic between the tripartite members in the Minimum Wage Commission during this period, all of the rates were fixed through voting on a rate suggested by the public interest representative

members which was based on indices forecasting the national economy rather than ones relating to the improvement of workers' life and income gap. Accordingly, the level of increase in the minimum wage was not significantly higher than the annual pay award during this period. Except for 2009 in which the rate of increase in the minimum wage was 4.4 per cent higher than the average rate of increase in bargaining wage, the growth rate of the minimum wage was 2.0 per cent lower than the average rate of increase in bargaining wage in 2010, identical with it in 2011, and 1.3 per cent and 2.6 per cent higher in 2012 and 2013, respectively (The Korean Statistical Information Service (KOSIS) [국가통계포털], 2004-2013; Appendix 3). The sharp contrast in the difference between the minimum wage rate and the annual pay award in 2009 and 2010 resulted from the deferred reflection of the 2008 global financial crisis on the minimum wage. These marginal increases in the minimum wage compared to the annual pay award suggest that the increases in the minimum wage for this period would have minor effects on the distribution of wages, in that employers were likely to rarely face pressure to raise their lowest wages above the rate of increase in wage bargaining and to differentiate wages between their employees. The ambiguous but significant change in the lowest wage bracket, the insignificant change in the lower-middle wage bracket, and the marginal increase in the middle wage bracket among older employees reflect this point. Considering the fact shown in Chapter Six that older employees' wages were much lower than their younger counterparts', the middle wage bracket in the wage distribution among older employees was likely to be comprised of those paid around the minimum wage. In response to a small increase in the minimum wage, employers were likely to focus on raising the wages close to a minimum wage rate with little consideration of wage differentials with the above and the below and to selectively increase their lowest wages which were far lower than a minimum wage rate. This understanding further provides insight to the likely small improvement in family earnings of households whose members were paid around the minimum wage but with a plausible reduction in the chance to exit from in-work poverty. Given that income from labour is the main source of household income among low-income working families, employers' wage practice centring on wages close to the minimum wage in response to its marginal increase would not lead to an enhancement of the family earnings of households whose employed members earned much below the minimum wage and thus

reduced their chances to exit from in-work poverty as the poverty thresholds were updated by reference to the average family earnings. Further, since the minor increase in the minimum wage compared to the annual pay award for this period also suggests insignificant increases in labour costs, employers were likely only rarely to dismiss their employees on account of an increase in the minimum wage.

The reduction in the statutory weekly working hours in 2011 is another factor to make the minimum wage effects being restrained for this period. The enforcement of the curtailed statutory weekly working hours from 44 hours to 40 hours was concluded among establishments with 20 employees or more until July 2008. However, the reduction in working hours for firms with less than 20 employees was implemented in July 2011 under the additional rules of the 2003 Labour Standard Act that the enforcement date for the establishment with less than 20 employees will be assigned by a Presidential decree, but the date should be no later than 2011. Firms with less than 20 employees comprised 96.4 per cent of all establishments and hired 51.1 per cent of all employees in 2011 (The Korean Statistical Information Service (KOSIS) [국가통계포털], 2011). Although the minimum wage rate in 2012 increased by 6.0 per cent, this rate of increase made the monthly pay of minimum wage workers working 40 hours a week in 2012 1.96 per cent lower than the pay of their counterparts working 44 hours a week in 2011. That is, minimum wage workers whose weekly working hours were reduced in 2011 were likely in 2012 to be paid less than or, at best, the same with the monthly pay of 2011 under the regulation for preserving employees' monthly salary in the 2003 Labour Standard Act. In this regard, it can be said that wage rises by the increase in the minimum wage were restrained in 2012 by its role to preserve the monthly pay curtailed by the reduction of the statutory working hours, which led to the zero disemployment effect.

However, the subminimum for surveillance or intermittent work increased from 80 per cent to 90 per cent of the normal minimum wage rate in 2012. This was likely to work as a positive factor for low paid older employees. Despite the tentative conclusion under the previous government that a sub-rate for older workers would contradict the Act on Prohibition of Age Discrimination in Employment and Elderly Employment Promotion, the feasibility of a subminimum for older workers was more positively considered in the

Minimum Wage Commission, as the subminimum for surveillance or intermittent work increased from 70 per cent to 80 per cent of the normal minimum wage from 2008. The fact that the questionnaire for the Minimum Wage Commission's annual visiting survey in 2008 and 2009 included more concrete questions regarding the issue of a subminimum for older workers shows that point (The sections of the Minimum Wage Commission's annual visiting survey in *The National Minimum Wage for the Year of 2009 and of 2010*). Although the consideration of a sub-rate for older workers did not lead to the initiation of legal proceedings, it is implied that the subminimum for surveillance or intermittent work was likely to play a role of a wage floor for older workers. The subminimum for surveillance or intermittent work, which was maintained as 80 per cent of the normal minimum wage rate for the first three years of the Lee government, increased from 80 per cent to 90 per cent of the normal minimum wage rate from 2012. This made a 10.3 per cent increase in monthly pay of employees engaged in those work despite the 40-hour week. The one-year high increase in the subminimum for surveillance or intermittent work might not be critical for the five-year minimum wage effects, in that the minimum wage effects were offset over the past two years by the annual pay award. However, given that the subminimum would work as a wage floor for older employees, the increase in the subminimum of the year was likely to contribute to meaningful wage increases among low paid older employees earning around the subminimum for this year. Moreover, while the normal minimum wage rate marginally increased only in two years during the Lee government period in practice, due to its increases being lower than or equivalent to the annual pay award and the widely enforced reduction in working hours, the subminimum rate had three-year increases during the period, owing to its high increase in 2012. In this regard, the increase in the subminimum for this period was likely among older employees to have a margin to raise some lower wages close to the subminimum, based on the employers' wage practice in response to a small increase in the minimum wage. This explains the slight increase in the median wage of older employees and the ambiguous change in their lowest wage bracket at the same time, providing a clue to the rise in family earnings among older employees' households which benefited from the low rates of increase in the minimum wage in 2009 and in 2013 and the high increase in the subminimum in 2012. However, the median family earnings of older employees, which

were only increased significantly and thus thought to benefit from the increase in the subminimum for surveillance or intermittent work, are much below the median family earnings of all employees. Given that the main source of family income among older employees' households in poverty is earnings, this implies that the wage increases only around the subminimum were likely to make the existing working poor households remain in poverty and also induce some new entries to in-work poverty.

The large proportion of those below the minimum wage in the wage distribution among older employees for the given five years are explained by the influence of a subminimum rate for surveillance or intermittent work over low paid older employees, in part, and largely by the prevalent noncompliance among firms hiring older workers. As the Minimum Wage Commission's series of actions along with the enforcement of the subminimum for surveillance or intermittent work implies, the sub-rate tended to be regarded as an implicit wage floor for low paid older workers. This was likely to reinforce employers' practice to pay less than the minimum wage to their unskilled older employees, combining employees' spontaneous commitment to work even for small pay. Employees' voluntary commitment to work for less than the minimum wage seems to be connected to their internalisation of age-related social perceptions as in the previous government period. Interviews with employers and employees conducted by the Minimum Wage Commission members in field investigations partly show it. An employer who ran a sewing factory stated:

When I took over the factory and interviewed for deciding the renewal of employment contract the existing female employees aged 60s and 70s who were paid only 500 thousand won a month, most of them asked to let them continue to work even if their pay would be cut. (*The National Minimum Wage for the Year of 2009*, p.126)

An employee aged over 50 who worked at a health functional food company said:

I want to continue to work even for small pay because I am over 50. (*The National Minimum Wage for the Year of 2010*, p.136)

Also, an older employee working for a cleaning and guard company answered:

I feel that jobs have recently been decreasing. As pay increased, older workers have been replaced by younger workers. As an older employee, the level of pay is not my priority, and thus I am not happy with the increase in the minimum wage. For me, remaining at work is much more urgent and important than the increase in the minimum wage. (*The National Minimum Wage for the Year of 2013*, p.241)

Meanwhile, during the Lee government, the regional branch offices of the Ministry of (Employment and) Labour enhanced public relations of the minimum wage through various types of campaign and strengthened inspection and advice by increasing the number of establishments and enlarging industrial fields for inspection (*The National Minimum Wage for the Year of 2009*, pp.183-188, *of 2010*, pp.197-201). From 2010, the Ministry of (Employment and) Labour introduced the Champion of the Minimum Wage [최저임금 지킴이] who were appointed among retirees from professional jobs to monitor and prosecute offenders of the minimum wage (*The National Minimum Wage for the Year of 2013*, p.289). However, as a standing member of the Minimum Wage Council mentioned that the Champion of the Minimum wage was expected to have been helpful in some degree to the reduction in the proportion of those paid below the minimum wage, but how it has exactly been was not known (*The National Minimum Wage for the Year of 2013*, p.36), there was no evidence of the practical crackdown and penalty which led to the improvement in noncompliance. Considering that low paid older workers were a particularly vulnerable group in gaining information, reports of the noncompliance with the minimum wage by older workers themselves were likely to be rare.

Conclusion

How the empirical results found in Chapter Seven can be understood was the main point of this chapter. Although the neoclassical economic approaches explained a large part of

the results, they left the questions of why the increase in the minimum wage had no disemployment effect among older employees, regardless of its level of increase, why noncompliance with the minimum wage significantly existed among older employees, despite the legal sanctions, in both five-year periods, and ultimately how the minimum wage operates in practice and for what. The discussion within a political economy framework proposed in Chapter Five provided more concrete contexts and better understanding of the empirical findings. Under different government policy orientations, the dynamics of power between government, employers and employee in the minimum wage fixing process during each five-year period made distinctive characteristics of the minimum wage in each period.

The high increases in the minimum wage during the Roh government were characterised as the preservation of low paid workers' monthly pay curtailed by the reduction of the statutory working hours, the exemption from the minimum wage of and the subminimum for surveillance or intermittent work playing a role as a wage floor for older workers, and the noncompliance with the minimum wage by the government's loose management of it. The role of the minimum wage to preserve monthly pay curtailed by the reduction of the statutory working hours restrained wage increases among a considerable proportion of employees for this period and brought about small but significant effects on the wage distribution without any disemployment effect, relying on some employers' practice of maintaining working hours through overtime in response to the reduction of the statutory working hours and firms to which the reduced working hours were not applied. However, since the role made roughly half of employees' monthly pay remain at the previous level, it prevented the increases in hourly wages for the other half caused by the increases in the minimum wage from sufficiently enhancing the rate of increase in annual family earnings among all employees. This provides a clue to the insignificant minimum wage effect on exits from in-work poverty, in that the main income source of households in in-work poverty would be family members' earnings. The exemption from the minimum wage of and the subminimum for surveillance or intermittent work was also important, particularly for the minimum wage effects on older employees. The discussions and debates through the minimum wage fixing process showed that they played a role as a wage floor for older

employees in practice. As the subminimum was fixed in its first year below the average market wage for the work before it was introduced, it increased higher than the exempted level only in the last year of the period. This explained that the practical exemption of older workers from the minimum wage during this period stopped those paid less than the minimum wage from obtaining it and deprived older employees' households in poverty of the chance to break out of it. It also suggested that the ambiguous change in the lowest wage bracket resulted from employers' wage practices for their low paid older employees based on the exemption from the minimum wage but responding to the high rate of increases in the minimum wage in consideration of employees' pay being cut by the reduced statutory working hours.

Meanwhile, the low increases in the minimum wage during the Lee government was characterised as the increases slightly higher than the annual pay award, the preservation of low paid workers' monthly pay curtailed by the reduction of the statutory working hours in 2012, the considerable increase in subminimum for surveillance or intermittent work in 2012, and the noncompliance with the minimum wage due to the government's loose management of it. The low increases in the minimum wage slightly higher than the annual pay award were responsible for the marginal changes in the wage distribution, centring on the increase in its median, and insignificant disemployment effect. As the minimum wage increased at a low rate, employers were likely to mainly raise wages close to a minimum wage rate and selectively increase their bottom wages far lower than a rate, having less pressure on wage differentials. This implied insignificant rises in labour costs and further provided a clue to the marginal improvement only in the median of family earnings of older employees and the reduction in the chance to exit from in-work poverty. The median family earnings of older employees would be much below the equivalent of all employees, and thus older employees earning their median family earnings were likely to be those paid close to a minimum wage rate. Nonetheless, as the marginal increases in the minimum wage rarely raise wages far lower than a minimum wage rate and thus were likely to make little improvement in family earnings of older employees' households below the median, the chance to exit from in-work poverty could be reduced among older employees. The role of the minimum wage to preserve monthly pay

curtailed by the reduction of the statutory working hours in 2012 was thought to be a factor weakening the impact of the minimum wage, in that the reduction was applied to roughly a half of the entire employees. But, the remarkable increase in 2012 in the subminimum for surveillance or intermittent work, which worked as a wage floor for older employees, played a decisive role in the marginal but significant effects on the wage distribution among older employees by making the three-year increases in the subminimum for this five-year period, compared to the two-year minor increases in the normal minimum wage owing to the reduced working hours.

For the two showcased five-year periods, noncompliance with the minimum wage was prevalent, relying largely on the loose supervision of both governments which had an exclusive power with regard to the minimum wage in its implementation stage.

Nonetheless, such noncompliance seems to have been based on the combination of employers' perceptions of older employees' labour productivity and older workers' internalisation of social perceptions of themselves as partly reflected in the interview responses in the Minimum Wage Commission's field investigations. With regard to older worker's internalisation of social perceptions, Jung, S-D, Song, A-Y and Jeon, H-S (2015) argue that Korean older people internalise ageism based on their findings showing stronger ageism at higher ages.

Notes

¹ For the first five-year period, the annual growth rate of wages for all employees ranges from 4.4 per cent to 6.6 per cent, and the minimum wage increase rate ranges from 8.3 per cent to 13.1 per cent. For the second five-year period, the annual growth rate of wages for all employees ranges from -0.9 per cent to 6.4 per cent while the minimum wage increase rate ranges from 2.75 per cent to 6.1 per cent, which has two interesting matches between 6.4 per cent of the annual growth rate of wages for all employees and 2.75 per cent of the minimum wage increase rate and between 5.3 per cent of the annual growth rate of wages and 6.0 per cent of the minimum wage increase rate. The annual growth rate of wages for all employees are based on the average monthly earnings of the Occupational Labour Force Survey At Establishments[사업체노동력조사] which is conducted every April and October by the Ministry of Employment and Labour for the sample of 32,300 workplaces with 5 or more permanent employees.

² According to Haggard and Kaufman (1995), the neoliberal economic policy is based on the fundamental principle of business efficiency, trade liberalisation, market openness, and a ‘minimalist’ state for a market-oriented economy. The concrete strategies for those principles were named ‘Washington Consensus’ in 1989 by international economic institutes in Washington D.C., such as the International Monetary Fund (IMF) and the World Bank, which included privatisation of the public sector to maximise the market efficiency, deregulation for flexible labour market and free business activities, and openness focusing on trade and monetary market liberalisation (Williamson, 1990, quoted from Kim, K-O, 2011, pp.279-280).

³ In the special lecture for venture business leaders held in October, 2007, the former president Roh, Moo-Hyun clarified the identity of his administration as a progressive one, refusing to agree to the criticism of its economic policy from both conservative and progressive camps (YTN, 18 October, 2007, quoted from Kim, K-O, 2011).

⁴ The schedule of the financial hub plan were advanced at the first financial hub meeting chaired by the president in June of 2005, from 2012 to 2010 for the construction of asset management-specialised financial hub and from 2020 to 2015 for the final goal (The National Economic Advisory Council [국민경제자문회의], 2007, p.225)

⁵ According to a survey that the Realmeter, an independent research company, conducted in March, 2010, opposition against the project was 49.9 per cent while supports for it, 36.7 per cent (Lee, Chang-Hwan, (22 May, 2017) ‘What is ‘the Four Major River Project’ on which the Blue House ordered inspection’ [청와대 감사 지시 ‘4 대강 사업’은 무엇인가], *The Asia Economy Daily* [아시아경제]).

⁶ The estimated ripple effect on production ranges from 13 trillion won to 46.5 trillion won, and the estimated effect on employment also varies from 46,628 jobs to 317,470 jobs. For detail, see Yoo, Seung-Hoon & Park, Dooho (2013). The effects of the Four Major Rivers Restoration Project on regional economy [4 대강 살리기 사업의 지역경제 파급효과]. *The Journal of Wetland Research* [한국습지학회지], 15, 159-164.

⁷ By the Labour Standards Act amended in September 2003, the statutory weekly working hours were reduced from 44 hours to 40 hours in phase. It was applied to the firms employing 1,000 full-time employees and more, financial and insurance businesses, and government-

funded organisations from July, 2004, and yearly extended until 2008 to the firms employing 300 and more and below 1,000, to the ones employing 100 and more and below 300, to the ones employing 50 and more and below 100, and to the ones employing 20 and more and below 50, respectively. For the firms employing below 20, it was applied from July 2011.

⁸ The Article 1 of the Minimum Wage Act states that ‘the purpose of this Act is to stabilize workers’ life and to improve the quality of the labour force by guaranteeing a certain minimum level of wages to workers, thereby contributing to the sound development of the national economy’.

Chapter Nine

Conclusion

Introduction

This thesis explored how the minimum wage in South Korea affected older workers. Three main questions were addressed: 1) *how the minimum wage affects the distributions of wages and family earnings, employment and exits from in-work poverty among older workers*, 2) *whether different rates of increase in the minimum wage have different effects among older workers*, and 3) *how the empirical results of the minimum wage effects on older workers can be understood*. These questions were examined through a case study of South Korea. Two consecutive government periods, Roh, Moo-Hyun government (2003-2008) and Lee, Myung-Bak government (2008-2013), were compared both empirically and contextually. Using the Korean Labour and Income Panel Study (KLIPS), linear least squares (OLS) models, fixed-effects models, and multilevel discrete-time event history models for competing risks were mainly employed for the empirical part of the analysis. Also exploiting the Minimum Wage Council's annual report on minimum wage fixing process, *The National Minimum Wage for the Year of OOOO: The Details of Deliberation and Decision*, a contextual analysis was conducted for further discussion of empirical findings. In this final chapter, the main findings of this thesis will be summarised answering the research questions addressed. Then, the review of the contributions and policy implications that this study made is followed by the limitations of and reflections on the research method that this study exploited.

Summary of Findings

The empirical part of this thesis provided answers to the first two research questions, *how the minimum wage affects the distributions of wages and family earnings, employment and exits from in-work poverty among older workers* and *whether different rates of increase in the minimum wage have different effects among older workers*.

Regardless of the rate of increase, the minimum wage created a spike at or around the minimum wage in the distribution of wages for older employees, but with a large proportion in the distribution left below the minimum wage. High increases in the minimum wage had significant effects on the middle percentiles of wages among older employees while low increases in the minimum wage had only on the median of wages among them. Further, high increases in the minimum wage reduced marginally and significantly the wage gap between the highest wage bracket and the lowest or lower-middle wage brackets but changed ambiguously the gap between the middle and lowest wage brackets. Low increases in the minimum wage had marginal and significant effects on the wage gap between the highest wage bracket and the lowest or middle wage brackets. In terms of the employment effects, there was no significant correlation between the increase in the minimum wage and regional changes in employment or unemployment rates among older employees for the period with highest rates of increase in the minimum wage. By contrast, low increases in the minimum wage were negatively and significantly correlated with regional changes in unemployment rates among older individuals. As regards the effects on the distribution of older employees' family earnings, no significant effect was found for the period with high increases in the minimum wage, whereas low increases were responsible for the rise in the median of older employees' family earnings. Further, high increases in the minimum wage had no significant effect on exits from in-work poverty among older employees' households, and small increases in the minimum wage marginally but significantly reduced the chance for older employees' households in poverty to exit from it.

These results were obtained from appropriate methods with consideration for the institutional peculiarities of the Korean national minimum wage. However, as already stated in Chapter Seven, the results for the distribution of wages and family earnings and employment among older employees from the OLS and fixed-effects models at the regional level should be reviewed with particular caution, in that no equivalent data for comparison groups to which the minimum wage was not applied were available. By comparison, it can be concluded that an increase in the minimum wage rarely leads to an individual's dismissal and exit from in-work poverty among older employees, in that the event history models directly addressed the likely transitions from a concerned

starting point. The methodological shortcomings are addressed again in the limitation and reflection section of this chapter.

These empirical results can be largely explained by the neoclassical economic explanations. However, the economic explanations left the questions of why the increase in the minimum wage had no disemployment effect among older employees, regardless of its level of increase, why noncompliance with the minimum wage significantly existed among older employees, despite the legal sanctions, in both five-year periods, and ultimately how the minimum wage operates in practice and for what. The third research question, *how the empirical results of the minimum wage effects on older workers can be understood*, was further explored by a contextual analysis based on the political economy framework proposed in Chapter Five. Under different government policy orientations, the dynamics of power between government, employers and employee in the minimum wage fixing process during each five-year period made distinctive characteristics of the minimum wage in each period. The high increases in the minimum wage during the Roh government was characterised as the preservation of low paid workers' monthly pay curtailed by the reduction of the statutory working hours, the exemption from the minimum wage of and the subminimum for surveillance or intermittent work playing a role as a wage floor for older workers, and the noncompliance with the minimum wage caused by the government's loose management. The role of the minimum wage to preserve monthly pay curtailed by the reduction of the statutory working hours restrained wage increases among a considerable proportion of employees for this period and brought about small and significant effects on the wage distribution without disemployment effect, relying on some employers' practice of maintaining working hours through overtime in response to the reduction of the statutory working hours and firms to which the reduced working hours were not applied. However, since the role made roughly half of employees' monthly pay remain at the same level, it prevented the increases in hourly wages for the other half caused by the increases in the minimum wage from sufficiently enhancing the rate of increase in annual family earnings among all employees. This provides insight to the insignificant minimum wage effect on exits from in-work poverty, in that the main income source of households in in-work poverty would be family members' earnings.

The exemption from the minimum wage of and the subminimum for surveillance or intermittent work was also important, particularly for the minimum wage effects on older employees. The discussions and debates through the minimum wage fixing process informed that they played a role as a wage floor for older employees in practice. As the subminimum was fixed in its first year below the average market wage for the work before it was introduced, it increased above the exempted level only in the last year of the period. This explained that the practical exemption of older workers from the minimum wage during this period restrained those paid less than the minimum wage from obtaining its benefit and deprived older employees' households in poverty of the chance to be out of it. It also suggested that the ambiguous change in the lowest wage bracket resulted from employers' wage practices for their low paid older employees based on the exemption from the minimum wage but responding to the high rate of increases in the minimum wage in consideration of employees' pay cut by the curtailed statutory working hours.

Meanwhile, the low increases in the minimum wage during the Lee government were characterised as increases slightly higher than the annual pay award, the preservation of low paid workers' monthly pay curtailed by the reduction of the statutory working hours in 2012, the considerable increase in subminimum for surveillance or intermittent work in 2012, and the noncompliance with the minimum wage by the government's loose management of it. The low increases in the minimum wage slightly higher than the annual pay award were responsible for the marginal changes in the wage distribution, centring on the increase in its median, and insignificant disemployment effect. As the minimum wage increased at a low rate, employers were likely to mainly raise wages close to a minimum wage rate and selectively increase their bottom wages far lower than a rate, having less pressure on wage differentials. This implied insignificant rises in labour costs and further provided a clue to the marginal improvement only in the median of family earnings of older employees and the reduction in the chance to exit from in-work poverty. The median family earnings of older employees would be much below the equivalent of all employees, and thus older employees earning their median family earnings were likely to be those paid close to a minimum wage rate. Nonetheless, as the marginal increases in the minimum wage rarely raise wages far

lower than a minimum wage rate and thus were likely to make little improvement in family earnings of older employees' households below the median, the chance to exit from in-work poverty could be reduced among older employees. The role of the minimum wage to preserve monthly pay curtailed by the reduction of the statutory working hours in 2012 were thought to be a factor of weakening the impact of the minimum wage, in that the reduction was applied to roughly a half of the entire employees. But, the remarkable increase in 2012 in the subminimum for surveillance or intermittent work, which worked as a wage floor for older employees, played a decisive role in the marginal but significant effects in the wage distribution among older employees by making the three-year increases in the subminimum for this five-year period, compared to the two-year minor increases in the normal minimum wage owing to the reduced working hours.

For the two showcased five-year periods, noncompliance with the minimum wage was prevalent, relying largely on the loose supervision of both governments which had an exclusive power with regard to the minimum wage in its implementation stage.

Nonetheless, such noncompliance seems to have been based on the combination of employers' perceptions of older employees' labour productivity and older workers' internalisation of social perceptions of themselves as partly reflected in the interview responses in the Minimum Wage Commission's field investigations.

Contributions

This thesis has contributed to knowledge in three ways. Firstly, it added limited but significant findings to the research of the minimum wage effects on older workers. The empirical results provided evidence that an increase in the minimum wage had no disemployment effect at an individual level among older workers. This might suggest that non-negative employment effects are likely to be the norm rather than the exception for older workers, in that Fang and Gunderson (2009) found positive employment effects for Canadian older workers. On top of the employment effects, this research provided empirical results of the minimum wage effects on the distributions of wages and family earnings among older employees and evidence of no improvement in their

chance to exit from in-work poverty. Although the results of the distributions of wages and family earnings are high plausibility rather than conclusive evidence due to the unavailability of using an ideal research design, those findings newly explored and added to the research of the minimum wages effects on older workers could work as a starting point of broadening the scope of the research field. This research also compared the minimum wage effects produced by very different levels of increases in the minimum wage. Since such comparison has rarely been conducted in the research of the minimum wage effects, it could give a fresh insight into the effects of the minimum wage.

Secondly, this thesis addressed the points which were not easily understood by the mainstream economic explanations and demonstrated better understandings of the empirical findings in addition to proposing an alternative political economy framework. Although the empirical results were largely understood by the mainstream economic theories and general economic rules, a considerable part of the results, such as a large proportion of those paid below the minimum wage and insignificant disemployment effects, were not explained. The findings from a contextual analysis based on the newly proposed framework provided more concrete explanations of the empirical results. For example, the implicit characteristics of the minimum wage, which were formed by the dynamics of power among government, employers, and employee, plus a government's policy orientation, informed that the non-negative employment effects for Korean older workers resulted from changes in related regulations lowering the level of increase in the minimum wage in practice and the exclusively low level of wages among older employees. This may suggest the necessity to take account of the minimum wage policy process for further understanding of the empirical results, especially in that Fang and Gunderson's (2009) supposition of the positive employment effects among Canadian older workers brought about by the substitution between arguably more productive low-paid older workers and arguably the least productive teenagers was denied by Lanot and Sousounis' (2017) findings in the UK context. The explanations based on the analysis of the minimum wage policy process for a large proportion of those paid below the minimum wage and the apparent inconsistency among the results of the wage distribution, of the distribution of family earnings, and of exits from in-work poverty

also support the necessity by providing new information, including older employees' internalisation of social perception on themselves, and calling attention to the importance of changes in other related regulations.

Connecting to the second point, this thesis showed the usefulness of employing a contextual analysis with qualitative data in the research of the minimum wage effects. Although a quantitative analysis using a sophisticated inference is a norm in the research field, accumulated empirical evidence from it are inconsistent and significantly unexplained by the dominant theories. As shown earlier, the findings from the contextual analysis of the minimum wage policy process fill the gap between the empirical results and the understanding of them. The consideration of the political attributes that the minimum wage has as a public policy may not necessarily lead to a qualitative analysis. However, stressing the point that an exploration of the policy process is necessary for figuring out complex contexts of the changing political attributes of the minimum wage, this research used the contextual analysis with qualitative data. This called additional attention to textual data, which informed what was discussed and decided in the minimum wage policy process and what was not and how the decided and undecided issues worked to create the characteristics of the minimum wage. Despite the importance of its value as a record of the minimum wage policy process, the Minimum Wage Council's annual reports, which were used for the contextual analysis in this thesis, have never been used as data in previous research on the minimum wage effects in Korea. This first try at employing the reports for the research on the minimum wage effects might induce the production of more detailed and definitive records as regards the minimum wage policy process for researchers in this field to use them in various ways.

Policy Implications

The findings from both quantitative and qualitative analyses provide several critical implications to government and policy decision-makers. First and most importantly, the findings imply that older workers are particularly vulnerable as regards minimum wage policy and its effects. The results that a large proportion of older employees were paid

below the minimum wage and that the two indicators of an increase in the minimum wage had contrasting effects in lower wage brackets implies that employers' widespread wage practice exclusively to their low-paid older employees is based on the extent of the gap between the bottom wages and a minimum wage rate rather than on compliance with the minimum wage, relying on their perception of older workers' productivity. This is supported by the facts that the proportion paid less than the minimum wage was kept below 13 per cent among all employees during the researched periods (Lee, G-P, 2019) and the contrasting effects of the two indicators were not found in Jeong, J-H's (2011) study for all employees. The fact that the Minimum Wage Commission, despite its likely violation against the age discrimination law, kept discussing the feasibility of a subminimum for older workers for several years since the subminimum for surveillance or intermittent work was introduced, which suggested that the subminimum for surveillance or intermittent work worked as a practical wage floor for older employees, also support the implication of employers' discriminatory wage practice to older workers. This further implies that government and policy decision-makers share employers' biased perceptions of older workers, without reliable evidence about their low productivity. A more critical finding which calls attention of government and policy decision-makers is that older workers are likely to internalise such biased perception of themselves and actively accept employers' discriminatory wage practice.

Older workers' vulnerability described above addresses the issue of the government's management of noncompliance with the minimum wage and the widespread biased perception of older workers. As presented in Chapter Eight, government tended to neglect the management of it, especially for firms hiring older workers. Government and policy decision-makers' share of employers' biased perception of older workers gives rise to concern that they would keep allowing employers' noncompliance with the minimum wage, especially for their low-paid older employees. However, recalling that the empirical results of the distribution of older employees' family earnings and of their chance to exit from poverty, especially for the period with low rate of increase in the minimum wage, suggested low wage older employees benefiting from an increase in the minimum wage were likely to be largely breadwinners in low-income households, unlike their younger counterparts, and noncompliance with the minimum wage mainly

brought about the negative effect on their chance to exit from in-work poverty, fair management of noncompliance could improve the welfare of low-income older employees' households and relieve in-work poverty among older workers. This point needs to be emphasised more, in that the subminimum for surveillance or intermittent work was abolished as the normal minimum wage rate was applied to this work from 2015. At the same time, older workers' vulnerability presented by the findings of this research may suggest the need for government's comprehensive review of their perception of older workers (and further older people) in making and implementing policies and provisions of measures to improve employers' perception of older workers, in consideration of rapidly ageing Korean workforce.

This thesis also reminds us of the fact that the effects of the minimum wage can be largely influenced by the changes in other related regulations as well as within the minimum wage act. The findings from the contextual analysis indicated that the introduction of the subminimum for surveillance or intermittent work made a part of noncompliance with the minimum wage legalised, which contributed to a large proportion paid less than the minimum wage, whilst an later increase in the subminimum worked as a critical factor to induce some positive effects, and the change in the Labour Standard Act, particularly in the statutory weekly working hours, critically weakened the impact of the minimum wage. It was shown that such findings were from the absence of the sufficient research and discussion about the plausible influence of related legal changes in the minimum wage fixing process. In as much as the debates on the minimum wage recently heat up further but still remain in focusing on its rate of increase, the comprehensive consideration of the influences of various legal changes would provide a clue to relieving conflicts and reaching an agreement as well as to generating desirable minimum wage effects.

Limitations and Reflections

Several points that this research was not able to cover or could have further considered, particularly in terms of research methods, can be noted as follows. As stated in Chapter Seven, the empirical results obtained from the OLS and fixed-effects models should be

cautiously understood because no comparison group was available. If equivalent data were available for before the introduction of the minimum wage or for regions/sectors with no application of the minimum wage, the models could be tested for the difference between times in the difference between the various percentiles of wages and family earnings or employment and unemployment rates before the introduction of the minimum wage or in regions/sectors where it was not applied and their counterparts after the introduction or in regions/sectors with an increase in the minimum wage. However, the institutional peculiarities of the Korean national minimum wage allow us to set up no comparison groups, and accordingly, the estimated OLS and fixed-effects models in this study may not provide robust evidence of minimum wage effects but high plausibility.

By comparison, the empirical results from the multilevel discrete-time event history models for competing risks are convincing but do not provide a full account of employment effects for older workers and a further exploration of their plausible inflow into in-work poverty resulted from an increase in the minimum wage. Since the main concerns of this thesis as regards employment and poverty issues were whether an increase in the minimum wage would bring about older employees' dismissal and raise their chance to exit from in-work poverty at an individual level, the event history models examined individuals' transitions only from being employed and from being in in-work poverty for each topic. In this regard, the findings do not inform us of whether an increase in the minimum wage prevented new hires or induced the fall into in-work poverty among older workers. For a full account of employment effects, the minimum wage effect on older workers' transitions from being unemployed or being in other types of employment to being employed should be also explored. Likewise, for a further exploration of the minimum wage effect on older employees' inflow into in-work poverty, whose possibility was raised by the negative and significant result of the minimum wage effect on older employees' exits from in-work poverty for the second five-year period, older workers' transitions from other states, such as being employed but not poor, being unemployed, or being in other types of employment, can be examined.

This thesis could have conducted qualitative interviews for an exhaustive study of the minimum wage fixing process. Although the Minimum Wage Council's annual report gave relatively detailed accounts of the process, including each representative group's demands and responses, the discussions and interactions between the groups, surveys and workshops conducted by the commission, and recommendation to government, there are likely to be more facts and contexts which were not presented in the official government document. For this thesis, qualitative interviews were virtually impossible because of time limits and the issue of accessibility to interviewees. Several of the critical years of the Korean Labour and Income Panel Study were released one year later than originally scheduled, and the multiple level discrete-time event history models for competing risks required a huge amount of preparatory work with the data.

Experiencing time constraints for the empirical analysis part, it was concluded that interviews with at least two groups of 27 former commission representatives in Korea would exceed the possibility of this thesis and it would be better to leave it for future study.

Lastly, the fact that the contextual analysis of this study focused on the minimum wage fixing process implies that the understanding of the empirical results from the contextual analysis could have a lacuna which is explained by an analysis of the minimum wage implementing stage. Particularly for noncompliance, looking at the practices of government department and branch offices, which are responsible for inspection and control of violation of the minimum wage, would provide more abundant information for a sound explanation. Meanwhile, this study did not deal with the influence of public opinion in the contextual analysis because a cohesive and powerful force of public opinion significantly involved in the minimum wage policy process was not found for the observed periods. It seems that the Minimum Wage Commission externally fulfil the necessary conditions for a social consultative group, and in this regard, potent movements of civic groups for or against the minimum wage are likely to be rarely found. However, public opinion is a political factor not to be overlooked, in as much as it exhibits potentially an influential force as often observed with regard to other issues.

Conclusion

This thesis studied the impact of the minimum wage on older workers in a Korean context, in terms of their distributions of wages and family earnings, employment, and chance to exit from in-work poverty. Despite the limitations of some statistical models, it provided critical empirical results and evidence on the effects, and further demonstrated through a contextual analysis the link between the empirical results and the outcomes of the minimum wage policy process, based on a newly proposed political economy framework for an enhanced understanding of the minimum wage effects. The findings of this thesis, first and most importantly, showed that older workers were especially vulnerable even in terms of minimum wage policy, which was expected to work as a bottom line for the lowest paid in the labour market. It was pointed out that such vulnerability was likely to be reproduced by government's sharing employers' poor perceptions of older workers, and older workers' internalisation of the perception, as well as employers' discriminatory wage practices based on their biased perception of older workers' productivity. These main points of this thesis call special attention to the fact that older workers should no longer be 'them' either in the labour market or in our society and should be included as 'us' in public policies and labour market practices, especially when facing unprecedented rapidly ageing workforces, particularly in Korea.

Appendix

Appendix 1: KLIPS Data Used and Minimum Wage (MW) Applied

	MW Fixing Time Point	MW Rate Application Period	MW Applied (₩) (Increase Rate, %)	KLIPS Wave Used (Data Collection Period)
Roh, Moo-Hyun Government (2003.2 – 2008.2)	2003. 8	2003. 9 – 2004. 8	2,510 (10.3)	Wave 7 (2004. 4 - 9)
	2004. 8	2004. 9 - 2005. 8	2,840 (13.1)	Wave 8 (2005. 4 - 9)
	2005. 8	2005. 9 – 2006. 12	3,100 (9.2)	Wave 9 (2006. 4 – 9)
	2006. 8	2007	3,480 (12.3)	Wave 10 (2007. 4 – 9)
	2007. 8	2008	3,770 (8.3)	Wave 11 (2008. 4 - 9)
Lee, Myung-Bak Government (2008.2 – 2013.2)	2008. 8	2009	4,000 (6.1)	Wave 12 (2009. 4 - 9)
	2009. 8	2010	4,110 (2.75)	Wave 13 (2010. 4 - 9)
	2010. 8	2011	4,320 (5.1)	Wave 14 (2011. 4 - 9)
	2011. 8	2012	4,580 (6.0)	Wave 15 (2012. 4 - 9)
	2012. 8	2013	4,860 (6.1)	Wave 16 (2013. 4 - 9)

Note: Each data collection period contains September in which a new minimum wage rate is applied, but Wave 7 & 8 are assumed to represent the effect of an established minimum wage rate rather than a newly applied one; Information on the fraction of those affected by a new minimum wage rate and on household income for each year was from the previous wave and the following wave, respectively. Thus, information on the fraction of those affected by the rate applied between September, 2003 and August, 2004 was from Wave 6; and information on household income for 2013 was from Wave 17.

Appendix 2: MLwiN Macros for Multilevel Competing Risks Models

A. Analysis of Transition in Employment Status

NOTE: The Effect of Minimum Wage on Older Workers' Employment? Macro to set up Multilevel Models for Competing Risks in MLwiN

NOTE: C:\Documents\Database\emp0711.sav

NOTE: c1-c12: c1 'id' c2 'year' c3 'event' c4 'dur' c5 'atrisk' c6 'sex' c7 'age' c8 'edu' c9 'mwap' c10 'aplr'

NOTE: Calculate duration-squared variable

```
calc c11='dur'*'dur'
```

```
name c11 'dursq'
```

NOTE: Create level 2 ID (coded 1,2, . . . , 2338)

```
code 2338 1 1 c12
```

```
name c12 'lev2id'
```

NOTE: Create vector of ones - needed for estimation of intercept terms

```
put 2338 1 c13
```

```
name c13 'cons'
```

NOTE: Declare event as categorical then as a multinomial response, with category 0 the reference

NOTE: 2 new variables are created, the stacked binary responses for categories 1 and 2 and a response index

```
catn 1 'event' 0 'stillemp' 1 'une' 2 'selfe'
```

```
mnom 0 'event' c14 c15 0
```

```
name c14 'resp' c15 'resp_ind'
```

NOTE: Create 'long' version of ATRISK. (Values of other variables will be repeated automatically when added to the multinomial model.)

```
repe 2 'atrisk' c17
```

```
name c17 'atrisk_long'
```

NOTE: Divide by ATRISK to obtain probability of each type of event within one-year interval and declare as response

```
calc c18='resp'/'atrisk_long'
```

```
name c18 'y'
```

```
resp 'y'
```

NOTE: Declare ATRISK as the denominator

```
calc c19='atrisk_long'
```

```
name c19 'denom'
```

NOTE: Declare multilevel structure. Level 1 used to define multivariate structure.

```
iden 1 'resp_ind' 2 'lev2id' 3 'id'
```

NOTE: Declare sex edu mwap variables as categorical and name categories

```
catn 1 'sex' 1 'male' 2 'female'
```

```
catn 1 'edu' 1 'high-' 2 'high+'
```

```
catn 1 'mwap' 0 'mw not affected' 1 'mwaffec'
```

NOTE: Add covariates

```
addt 'cons'
```

```
addt 'dur'
```

B. Analysis of Exits from In-Work Poverty

```
NOTE: The Effect of Minimum Wage on Older Workers' Exit from Poverty? Macro to set up Multilevel Models
for Competing Risks in MLwiN
NOTE: C: \Documents \Database \wp0711.sav
NOTE: c1-c12: c1 'id' c2 'year' c3 'event' c4 'dur' c5 'atrisk' c6 'sex' c7 'age' c8 'edu' c9 'hhold' c10 'fnum' c11 'mwap'
c12 'aplr'

NOTE: Calculate duration-squared variable
calc c13='dur'*dur'
name c13 'dursq'

NOTE: Create level 2 ID (coded 1,2, . . . , 670)
code 670 1 1 c14
name c14 'lev2id'

NOTE: Create vector of ones - needed for estimation of intercept terms
put 670 1 c15
name c15 'cons'

NOTE: Declare event as categorical then as a multinomial response, with category 0 the reference
NOTE: 2 new variables are created, the stacked binary responses for categories 1, 2, 3 and a response index
catn 1 'event' 0 'stillwp' 1 'exitwp' 2 'une' 3 'selfe'
mnom 0 'event' c16 c17 0
name c16 'resp' c17 'resp_ind'

NOTE: Create 'long' version of ATRISK. (Values of other variables will be repeated automatically when added
to the multinomial model.)
repe 3 'atrisk' c19
name c19 'atrisk_long'

NOTE: Divide by ATRISK to obtain probability of each type of event within one-year interval and declare as
response
calc c20='resp'/atrisk_long'
name c20 'y'
resp 'y'

NOTE: Declare ATRISK as the denominator
calc c21='atrisk_long'
name c21 'denom'

NOTE: Declare multilevel structure. Level 1 used to define multivariate structure.
iden 1 'resp_ind' 2 'lev2id' 3 'id'

NOTE: Declare sex edu hhold mwap variables as categorical and name categories
catn 1 'sex' 1 'male' 2 'female'
catn 1 'edu' 1 'high-' 2 'high+'
catn 1 'hhold' 0 'not household' 1 'household'
catn 1 'mwap' 0 'mw not affected' 1 'mwaffec'

NOTE: Add covariates
addt 'cons'
addt 'dur'
```

Appendix 3: Growth in Minimum Wage, Annual Pay Award, Annual Inflation (CPI) & GDP per capita, and Minimum Wage relative to Average Wage of Full-time Workers in South Korea, 1988-2014 (%)

	Growth in MW	Annual Pay Award	Annual Inflation	GDP per capital growth	MW relative to mean wage of full-time workers	MW relative to median wage of full-time workers
1988	-	-	7.1	10.8	26.00	32.96
1989	26.3	-	5.7	6.0	27.97	34.65
1990	15.0	-	8.6	8.7	27.36	33.67
1991	18.8	-	9.3	9.3	27.34	33.31
1992	12.8	-	6.2	5.1	26.11	30.82
1993	8.6	-	4.8	5.8	25.70	30.08
1994	8.0	-	6.3	8.1	25.33	29.13
1995	7.8	-	4.5	8.5	23.92	27.78
1996	9.0	-	4.9	6.6	23.06	27.21
1997	9.8	-	4.4	4.9	23.23	27.12
1998	6.1	-2.7	7.5	-6.2	24.31	28.50
1999	2.7	2.1	0.8	10.5	24.95	29.46
2000	4.9	7.6	2.3	8.0	23.81	28.80
2001	16.6	6.0	4.1	3.7	26.09	31.81
2002	12.6	6.7	2.8	6.8	27.31	33.42
2003	8.3	6.4	3.5	2.4	27.30	34.00
2004	10.3	5.2	3.6	4.5	28.22	35.31
2005	13.1	4.7	2.8	3.7	29.78	37.29
2006	9.2	4.8	2.2	4.6	30.62	38.92
2007	12.3	4.8	2.5	4.9	33.35	42.86
2008	8.3	4.9	4.7	2.1	34.13	43.60
2009	6.1	1.7	2.8	0.2	35.91	45.20
2010	2.8	4.8	2.9	6.0	35.86	45.07
2011	5.1	5.1	4.0	2.9	35.82	45.48
2012	6.0	4.7	2.2	1.8	34.11	42.94
2013	6.1	3.5	1.3	2.4	35.06	44.22
2014	7.2	4.1	1.3	2.7	35.71	45.85

Source: Korea Minimum Wage Council (<http://www.minimumwage.go.kr>) & OECD.Stat (<http://stats.oecd.org/Index.aspx>)

Note: '-' data not available

Appendix 4: Changes in Labour Force Participation, Employment and Unemployment among Workers Aged 50+ in South Korea, 2000-2014 (%)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Participation rate															
50-54 Years old	72.5	72.5	73.3	72.7	72.9	73.8	74.1	74.5	75.4	75.6	75.9	76.4	77.0	77.6	78.8
55-59 Years old	64.3	64.1	64.8	64.7	65.1	64.9	64.7	66.6	67.3	67.3	68.3	68.9	69.7	70.7	72.6
60-64 Years old	54.3	54.8	55.9	52.7	53.7	54.5	55.8	56.3	55.1	55.1	55.5	56.9	57.8	58.5	59.8
65+	29.6	30.0	30.7	28.7	29.8	30.0	30.5	31.3	30.6	30.1	29.4	29.5	30.7	31.4	31.9
Employment/population ratio															
50-54 Years old	70.2	70.3	71.8	71.3	71.4	72.1	72.6	73.0	73.9	73.7	74.2	74.7	75.4	76.3	77.2
55-59 Years old	62.2	62.5	63.7	63.2	63.4	63.1	63.2	65.2	65.9	65.6	66.5	67.4	68.1	69.2	70.8
60-64 Years old	53.0	53.7	55.0	51.8	52.7	53.4	54.5	55.0	54.1	53.8	53.7	55.1	56.1	57.2	58.3
65+	29.4	29.9	30.5	28.6	29.6	29.8	30.3	31.1	30.3	29.7	28.7	28.9	30.1	30.9	31.3
Unemployment rate															
50-54 Years old	3.2	3.0	2.0	2.0	2.1	2.3	2.0	2.1	1.9	2.5	2.3	2.1	2.0	1.7	2.1
55-59 Years old	3.3	2.6	1.8	2.4	2.6	2.8	2.4	2.1	2.1	2.4	2.6	2.1	2.3	2.1	2.5
60-64 Years old	2.3	2.0	1.6	1.6	1.7	2.1	2.3	2.3	1.7	2.2	3.4	3.1	2.8	2.3	2.6
65+	0.6	0.5	0.5	0.4	0.7	0.7	0.7	0.7	0.8	1.2	2.4	2.2	2.1	1.5	2.0

Source: The National Statistical Office of Korea, Economically Active Population Survey [경제활동인구조사], Each Year.

Appendix 5: Changes in the Growth Rate in Population, Labour Force Participation and Employment among Workers Aged 50+ in South Korea, 2001-2014 (%)

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
50-54 years old														
Population	2.9	3.2	3.0	4.9	9.4	7.9	6.7	4.6	5.1	4.8	3.4	2.4	1.7	0.4
Labour force participation	2.9	4.3	2.1	5.3	10.7	8.3	7.4	5.8	5.4	5.2	4.0	3.2	2.5	1.9
Employment	3.1	5.4	2.2	5.2	10.4	8.6	7.3	6.0	4.8	5.4	4.2	3.4	2.8	1.6
55-59 years old														
Population	0.2	1.7	3.7	4.5	5.1	3.4	2.6	2.5	4.8	6.8	7.5	6.9	5.7	5.6
Labour force participation	-0.1	2.9	3.5	5.1	4.8	3.2	5.4	3.7	4.7	8.5	8.4	8.3	7.2	8.3
Employment	0.7	3.7	2.8	4.9	4.6	3.6	5.8	3.7	4.3	8.3	9.0	8.1	7.4	7.9
60-64 years old														
Population	2.4	2.5	1.2	-0.3	0.2	1.7	2.4	1.9	3.9	4.0	3.5	3.1	3.0	4.9
Labour force participation	3.4	4.5	-4.6	1.5	1.9	3.9	3.4	-0.3	3.8	5.0	6.0	4.7	4.4	7.2
Employment	3.8	4.9	-4.6	1.3	1.6	3.7	3.4	0.3	3.3	3.8	6.3	4.9	5.0	6.9
65 +														
Population	5.5	5.5	5.4	5.2	8.1	4.5	2.9	3.4	3.3	3.7	4.2	5.4	3.6	4.2
Labour force participation	6.9	8.0	-1.3	9.2	8.7	6.2	5.5	1.1	1.5	1.5	4.6	9.7	5.8	6.1
Employment	7.0	7.9	-1.2	8.9	8.7	6.2	5.5	1.0	1.1	0.3	4.8	9.9	6.4	5.5

Source: The National Statistical Office of Korea, Economically Active Population Survey [경제활동인구조사], Each Year, Author's calculation

Appendix 6: Changes in Employment Status of Workers Aged 50+ in South Korea, 2007-2013, (%)

	2007. 08	2008. 08	2009. 08	2010. 08	2011. 08	2012. 08	2013. 08
Self-Employed							
50-59 Years old	36.9	35.8	35.2	33.2	33.0	32.8	31.6
60 Years old and over	50.1	49.4	45.4	44.3	44.3	44.0	43.4
Wage Employees							
50-59 Years old	54.3	55.2	56.6	58.9	59.5	60.5	61.6
60 Years old and over	37.1	37.2	42.4	44.0	44.2	44.2	45.8
Regular · Irregular							
50-59 Regular	57.4	60.4	59.4	60.7	60.4	62.4	62.9
50-59 Irregular	42.6	39.6	40.6	39.3	39.6	37.6	37.1
60+ Regular	34.0	34.3	27.3	30.4	29.5	29.5	32.5
60+ Irregular	66.0	65.7	72.7	69.6	70.5	70.5	67.5

Source: The National Statistical Office of Korea, Supplementary Results (by Type of Employment and for Non-wage Workers) of the Economically Active Population Survey [경제활동인구조사 (근로형태별, 비임금근로자) 부가조사], Every August in Each Year, Author's calculation.

Appendix 7: Changes in Industrial Composition among Workers Aged 55-79 in South Korea, 2005-2014 (%)

	2005. 5	2006. 5	2007. 5	2008. 5	2009. 5	2010. 5	2011. 5	2012. 5	2013. 5	2014. 5
55-79 years old										
Agriculture, Forestry & Hunting (A)	33.6	31.9	29.1	28.5	27.4	24.4	23.5	21.9	21.2	19.2
Mining (B)	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1
Manufacturing (C)	8.7	8.4	8.6	9.2	8.5	9.1	9.1	9.2	9.2	10.1
Construction (F)	6.4	6.0	6.4	6.4	5.7	6.8	6.9	7.0	7.2	7.5
Wholesale & Retail Trade, Hotel & Restaurants (G,I)	19.2	20.0	20.5	20.0	20.1	18.9	19.6	19.6	19.2	19.5
Business, Personal, Public Service & Others (E,L~U)	25.3	26.7	28.6	28.8	30.7	32.3	31.4	32.9	33.3	33.5
Electricity, Transport, Communication & Finance (D,H,J,K)	6.9	7.0	6.7	7.1	7.5	8.4	9.4	9.3	9.8	10.1
55-64 years old										
Agriculture, Forestry & Hunting (A)	22.1	20.5	18.2	17.8	17.2	15.0	13.8	13.1	12.6	11.4
Mining (B)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Manufacturing (C)	10.9	10.4	10.4	11.1	10.5	11.3	11.0	11.3	11.6	12.8
Construction (F)	8.2	8.0	8.6	8.8	7.5	8.9	9.1	9.1	9.2	9.2
Wholesale & Retail Trade, Hotel & Restaurants (G,I)	20.8	22.4	22.5	21.0	22.2	20.8	21.6	21.1	20.7	21.3
Business, Personal, Public Service & Others (E,L~U)	29.2	29.8	31.3	32.0	32.9	33.6	32.8	34.0	34.1	33.7
Electricity, Transport, Communication & Finance (D,H,J,K)	8.7	8.8	9.0	9.3	9.5	10.3	11.7	11.3	11.6	11.6

	2005. 5	2006. 5	2007. 5	2008. 5	2009. 5	2010. 5	2011. 5	2012. 5	2013. 5	2014. 5
65-79 years old										
Agriculture, Forestry & Hunting (A)	55.0	52.6	48.8	48.0	46.5	42.7	43.1	39.6	38.1	35.4
Mining (B)	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Manufacturing (C)	4.5	4.9	5.4	5.9	4.6	4.9	5.3	5.1	4.6	4.7
Construction (F)	2.9	2.4	2.4	2.2	2.2	2.5	2.5	2.7	3.2	4.1
Wholesale & Retail Trade, Hotel & Restaurants (G,I)	16.1	15.6	17.0	17.9	16.2	15.4	15.7	16.6	16.3	15.9
Business, Personal, Public Service & Others (E,L~U)	18.2	20.9	23.7	23.0	26.6	29.7	28.5	30.7	31.7	32.9
Electricity, Transport, Communication & Finance (D,H,J,K)	3.4	3.7	2.6	3.0	3.9	4.7	4.9	5.4	6.1	7.0

Source: The National Statistical Office of Korea, Supplementary Results (for the Old Population) of the Economically Active Population Survey [경제활동인구조사 (고령층) 부가조사], Every May in Each Year, Author's calculation

Note: Industry groups are based on the 9th Korean Standard Industrial Classification (KSIC) [제 9차 개정 한국표준산업분류]. D: electricity, gas, steam and water supply, E: sewerage, waste management, materials recovery and remediation activities, G: wholesale and retail trade, H: transportation, I: accommodation and food service activities, J: information and communication, K: financial and insurance activities, L: real estate activities and renting and leasing, M: professional, scientific and technical activities, N: business facilities management and business support services, O: public administration and defence, compulsory social security, P: education, Q: human health and social work activities, R: arts, sports and recreation related services, S: membership organisations, repair and other personal services, T: activities of households as employers, undifferentiated goods- and services-producing activities of households for own use, U: activities of extraterritorial organisations and bodies.

Appendix 8: Changes in Occupational Composition among Workers Aged 55-79 in South Korea 2005-2014 (%)

	2005. 5	2006. 5	2007. 5	2008. 5	2009. 5	2010. 5	2011. 5	2012. 5	2013. 5	2014. 5
55-79 years old										
Clerks	2.6	2.8	3.0	2.8	3.5	3.3	3.6	3.9	4.4	5.1
Service & Sales Workers	19.0	18.7	20.0	19.3	18.9	18.1	19.5	19.8	19.6	20.6
Skilled Agricultural, Forestry & Fishing Workers	31.3	29.9	27.3	26.7	25.2	22.5	21.6	20.5	19.7	17.8
Craft and Equipment, Machine Operating & Assembling Workers	14.2	14.9	15.2	16.4	16.5	18.3	19.3	19.6	20.3	21.0
Elementary Workers	25.1	26.0	26.6	25.9	27.3	29.2	26.9	27.5	27.6	26.7
55-64 years old										
Managers & Professionals and Related Workers	9.7	9.6	9.9	10.8	10.3	10.5	11.0	10.6	10.3	10.9
Clerks	3.3	3.4	3.7	3.3	4.6	4.4	4.6	5.1	5.7	6.2
Service & Sales Workers	22.3	22.6	23.4	22.3	22.3	21.3	23.2	22.9	22.6	23.9
Skilled Agricultural, Forestry & Fishing Workers	20.7	19.3	17.1	16.7	15.9	13.8	12.9	12.3	11.9	10.6
Craft and Equipment, Machine Operating & Assembling Workers	18.6	19.5	20.4	21.4	21.5	23.5	24.2	24.9	25.4	25.8
Elementary Workers	25.4	25.6	25.5	25.5	25.5	26.4	24.0	24.1	24.2	22.6

	2005. 5	2006. 5	2007. 5	2008. 5	2009. 5	2010. 5	2011. 5	2012. 5	2013. 5	2014. 5
65-79 years old										
Managers & Professionals and Related Workers	4.1	4.2	4.3	5.7	5.2	4.8	5.4	5.2	4.7	4.5
Clerks	1.4	1.6	1.8	1.8	1.6	1.4	1.4	1.4	1.9	2.7
Service & Sales Workers	13.1	11.9	13.7	13.9	12.5	11.9	11.9	13.6	13.6	13.8
Skilled Agricultural, Forestry & Fishing Workers	51.0	49.1	45.7	44.6	42.7	39.3	39.2	36.6	35.1	32.6
Craft and Equipment, Machine Operating & Assembling Workers	6.1	6.4	6.0	7.3	7.3	8.2	9.2	8.9	10.1	11.0
Elementary Workers	24.4	26.8	28.5	26.7	30.6	34.5	32.9	34.4	34.5	35.3

Source: The National Statistical Office of Korea, Supplementary Results (for the Old Population) of the Economically Active Population Survey [경제활동인구조사 (고령층) 부가조사], Every May in Each Year, Author's calculation

Appendix 9: Changes in Monthly Wage, Hours Worked and Hourly Wage by Age Group in South Korea, 2005-2014 (₩, hrs)

Age	Monthly wage (₩)				Weekly hours worked (hrs)				Hourly wage (₩)			
	30-49	50-59	60-64	65+	30-49	50-59	60-64	65+	30-49	50-59	60-64	65+
2005. 8	1,821,000	1,651,000	1,077,000	728,000	47.4	48.1	50.2	46.0	9,316	8,465	5,554	4,118
2006. 8	1,879,000	1,742,000	1,154,000	719,000	46.6	47.7	48.5	43.9	9,704	8,982	6,067	4,428
2007. 3	1,942,000	1,830,000	1,167,000	801,000	46.0	46.6	47.5	44.7	10,193	9,549	6,092	4,492
2007. 8	1,985,000	1,858,000	1,213,000	788,000	46.2	47.0	47.7	43.0	10,323	9,647	6,450	4,603
2008. 3	2,042,000	1,924,000	1,219,000	767,000	45.6	46.0	47.6	42.5	10,749	10,150	6,351	4,558
2008. 8	2,090,000	1,951,000	1,247,000	788,000	45.4	46.2	47.0	41.1	11,046	10,282	6,469	4,917
2009. 3	2,093,000	1,944,000	1,231,000	782,000	44.5	45.3	47.2	39.7	11,193	10,328	6,397	5,057
2009. 8	2,112,000	2,001,000	1,220,000	751,000	44.1	44.9	45.9	38.0	11,388	10,761	6,488	5,070
2010. 3	2,216,000	2,040,000	1,394,000	762,000	43.9	44.6	45.5	37.3	11,986	10,989	7,513	5,212
2010. 8	2,224,000	2,058,000	1,447,000	774,000	43.8	44.6	44.2	36.4	12,049	11,054	8,029	5,270
2011. 3	2,316,000	2,095,000	1,491,000	806,000	43.5	44.1	44.4	37.6	12,627	11,345	8,181	5,459
2011. 8	2,339,000	2,114,000	1,522,000	821,000	43.1	44.0	43.9	35.8	12,845	11,464	8,287	5,778
2012. 3	2,430,000	2,198,000	1,490,000	872,000	42.7	43.6	44.1	36.5	13,470	12,024	8,185	5,756
2012. 8	2,430,000	2,218,000	1,418,000	876,000	42.5	43.4	43.5	35.2	13,481	12,158	7,754	5,835
2013. 3	2,503,000	2,277,000	1,399,000	897,000	42.2	43.2	42.5	35.6	13,927	12,564	7,839	5,970
2013. 8	2,504,000	2,348,000	1,524,000	901,000	42.2	43.1	42.6	34.5	13,934	12,969	8,767	6,111
2014. 3	2,562,000	2,408,000	1,581,000	893,000	42.2	43.1	42.0	33.7	14,284	13,289	9,041	6,230

Source : The National Statistical Office of Korea, Supplementary Results (by Type of Employment) of Economically Active Population Survey [경제활동인구조사 (근로형태별) 부가조사], recited from Nam (2014), pp.15-16

Appendix 10: Changes in the Proportion of Older Employees Earning less than 50 % of the Median Wage

	50-54 years old	55-59 years old	60-64 years old	15-64 years old
1987	5.69	6.43	6.64	6.64
1988	5.75	7.42	11.89	6.42
1989	7.79	9.51	12.29	6.67
1990	7.1	9.05	12.23	6.63
1991	6.26	8.42	15.58	6.11
1992	4.88	6.0	10.14	4.55
1993	9.18	11.2	19.01	8.45
1994	10.12	12.58	20.14	8.28
1995	9.54	13.19	18.89	7.93
1996	8.45	13.64	20.83	6.81
1997	9.09	14.01	20.26	7.09
1998	10.51	16.24	23.1	7.67
1999	10.98	18.05	22.25	8.3
2000	13.12	21.99	30.92	10.23
2001	13.63	26.08	40.02	10.51
2002	14.7	25.68	42.18	11.27
2003	15.72	24.08	42.33	11.57
2004	15.2	23.3	42.1	11.44
2005	15.97	25.82	43.32	12.18
2006	16.95	28.71	46.48	13.98
2007	17.82	27.38	46.43	15.07
2008	14.27	19.47	27.34	10.13
2009	13.33	18.44	24.72	9.96
2010	13.9	17.34	25.02	10.13
2011	13.96	19.41	27.82	10.48
2012	13.17	17.74	27.9	10.02

Source: Survey on Labor Conditions by Type of Employment [고용형태별 근로실태조사] raw data, each year; quoted in Yoo, H-J, Kim, K-H and Oh, B-D, (2014), p. 34.

Appendix 11: Methods and Variables Used in Quantitative Analyses

Effects of MW	Method	Variables
Distribution of wages	Kernel density estimates	Log hourly wage minus log minimum wage for each employee aged 55 and older in each year
	OLS & Fixed-effects models	<ul style="list-style-type: none"> ● Dependent Variable: <ol style="list-style-type: none"> 1) The changes in the 10th, 25th, 50th, 75th, and 90th percentiles of log hourly wages among employees aged 55 and older for each region 2) The changes in ratios between the 90th and 10th, the 90th and 25th, the 90th and 50th, and the 50th and 10th percentiles of log hourly wages among employees aged 55 and older for each region ● Independent Variable: <ul style="list-style-type: none"> - <i>The fraction affected</i>, the proportion of employees aged 55 and older who earned less than a new minimum wage in the previous year to all employees of the same age group for each region - <i>The fraction newly affected</i>, the proportion of employees aged 55 and older who were paid between an old and a new minimum wage in the previous year to all employees of the same age group for each region ● Control Variable: <p>The changes in the proportion of employees aged 55 and older who are neither self-employed nor engaged in unpaid work to all individuals of the same age group for each region</p>
Employment	OLS & Fixed-effects models	<ul style="list-style-type: none"> ● Dependent variable: <ol style="list-style-type: none"> 1) The changes in the proportion of employees aged 55 and older who are neither self-employed nor engaged in unpaid work to all individuals of the same age group for each region 2) The changes in the proportion of those aged 55 and older who are neither employed, self-employed, nor engaged in unpaid work to all individuals of the same age group for each region ● Independent variable:

		<ul style="list-style-type: none"> - <i>The fraction affected</i> - <i>The fraction newly affected</i>
	Multilevel discrete-time event history model for competing risks	<ul style="list-style-type: none"> ● Dependent variable: Individuals' transition from being employed to being unemployed or to being in other types of employment ● Independent variable: <ul style="list-style-type: none"> - Minimum wage application or not * log hourly real minimum wage - <i>Duration</i> spent in being employed (which was centred by variable, <i>year</i>, by which the value, zero indicated the mean of the <i>duration</i> for each year) - Square of duration ● Control Variable: <ul style="list-style-type: none"> - Sex - age - Level of education obtained
Distribution of family earnings	Kernel density estimates	Log annual family earnings per capita for each older employee's household minus log 60 per cent of the median annual family earnings per capita for all employees' households in each year
	OLS & Fixed-effects models	<ul style="list-style-type: none"> ● Dependent Variable: <ul style="list-style-type: none"> - The changes in the 10th, 50th, and 90th percentiles of log annual family earnings per capita among employees aged 55 and older for each region - The changes in ratios between the 90th and 10th and the 50th and 10th percentiles of log annual family earnings per capita among employees aged 55 and older for each region ● Independent Variable: <ul style="list-style-type: none"> - <i>The fraction affected</i> - <i>The fraction newly affected</i>

		<ul style="list-style-type: none"> ● Control Variable: The changes in the proportion of employees aged 55 and older who are neither self-employed nor engaged in unpaid work to all individuals of the same age group by region
Exit from working poor	Multilevel discrete-time event history model for competing risks	<ul style="list-style-type: none"> ● Dependent variable: Individuals' transition from being poor while being employed to getting out of poverty while staying employed, to being unemployed, or to being in other types of employment including self-employment or non-wage family business work ● Independent variable: <ul style="list-style-type: none"> - Minimum wage application or not * log hourly real minimum wage - <i>Duration</i> spent in being working poor (which was centred by variable, <i>year</i>, by which the value, zero indicated the mean of the <i>duration</i> for each year) - Square of duration ● Control Variable: <ul style="list-style-type: none"> - Sex - age - Level of education obtained - Householder or not - Number of family members

Appendix 12: Adjustments to Minimum Wage Policy and Major Political Economic Developments in South Korea, 1986-2015

Year	Adjustments to Minimum Wage Policy	Political Economic Developments	
1986	The Minimum Wage (MW) Act enacted		
1987	MW came into effect, covering only manufacturing		
1988	MW extended into mining and construction (10 employees or more)		
~			
1998		Korean Financial Crisis (IMF bailout programme)	
~			
2000	MW extended into all workplaces with one employees or more		
~			
2003		The credit card lending crisis in Korea	Roh, Moo-Hyun Government <ul style="list-style-type: none"> - Monetary market liberalisation - Expansion of trade liberalisation through FTA - Deregulation of <i>Chaebols</i> (Korean conglomerates) - ‘The subordinate neoliberal approach’ to labour <ul style="list-style-type: none"> ▪ Wage cut through shortened working hours ▪ Labour market flexibility ▪ Restriction on civil servant unions ▪ Expansion of non-regular work ▪ Exclusion of labour from the policy making process
2004		Reduction of statutory weekly working hours (Firms with 1,000 full-time employees and more; financial and insurance businesses; government-funded organisations)	
2005	Income distribution ratio added into the statutory minimum wage fixing criteria	Reduction of statutory weekly working hours (Firms with 300-1,000)	
2006		Reduction of statutory weekly working hours (Firms with 100-300)	
2007	Introduction of subminimum rate for surveillance or intermittent work (30% less than normal minimum wage rate)	Reduction of statutory weekly working hours (Firms with 50-100)	
2008	Subminimum rate for surveillance or intermittent work (20 % less than normal minimum wage rate)	Global Financial Crisis	
		Reduction of statutory weekly working hours (Firms with 20-50)	Lee, Myung-Bak Government <ul style="list-style-type: none"> - Government-driven, neoliberal approach to economic policy

2009			<ul style="list-style-type: none"> ▪ Tax relaxation in income, corporate, and real estate ▪ Lowering interest rates & devaluating Korean currency ▪ Relaxation of regulations as regards monopoly and fair trade ▪ Korean New Deal project - Authoritarian neoliberal labour policy <ul style="list-style-type: none"> ▪ Flexible labour market ▪ Weakening trade unions through legal changes ▪ Direct job creation & employment promotion subsidies ▪ Deregulation of employment rules & flexibility of working hours
2010			
2011		Reduction of statutory weekly working hours (Firms with below 20)	
2012	Subminimum rate for surveillance or intermittent work (10% less than normal minimum wage rate)		
2013			
2014			
2015	Application of normal minimum wage rate to surveillance or intermittent work		

Note: indicates the period which the rates fixed under the Roh government were applied, and indicates the period which the rates fixed under the Lee government were applied.

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