Essays on CFO and Firm Financial Policies

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Declaration

I confirm that this thesis is my work and is the result of my accomplishments unless the contents are referenced in the text. I am aware of the university's guidance on the use of unfair means (www.sheffield.ac.uk/ssid/unfair-means). The content in this thesis has not been submitted elsewhere for any other degree or qualification in this or any other institution. However, parts of the thesis have been submitted to several workshops, doctoral masterclasses, and conferences.

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Abstract

This thesis provides a novel insight into Chief Financial Officers' (CFOs) attributes and moderating roles of the board of directors on firm financial policies in the UK. It consists of three main studies. Throughout these studies, I follow the upper echelon theory and agency theory for building expectations on CFO attributes and firm financial policies. Furthermore, I follow research dependency theory and gender based social role theory to relate moderating role of board on CFO decisions.

The first study examines the potential effect of a CFO's generalist career experience on firm cash holdings using a sample of 8,280 observations of UK-listed firms from 1999−2019. The baseline results show that firms with more generalist CFOs opt for more cash holdings than those with less generalist CFOs. The analyses suggest that firms with generalist CFOs hold more cash due to their willingness to engage in risk-taking through more investment (for R&D intense firms and overinvestment in general) with less costly internal finance. This extra cash holding by generalist CFO is significant only in firms with less dominant CEOs, confirming the CEO dominance and principles of reciprocity from social exchange theory. Furthermore, I show that female non-executive independent directors (INED) negatively moderate the positive relationship between generalist CFO and firm cash holdings. The results are consistent with different robustness checks. The results have important policy implications on the recruitment and compensation of generalist CFOs and persuade better corporate governance with influential monitoring roles by female INEDs on boards.

The second study investigates the potential effect of Chief Financial Officers' (CFOs) generalist career experience on firm dividend policy using a sample of 8,289 observations of UK-listed firms from 1999 to 2019. The baseline results confirm that firms with more generalist CFOs opt for less dividend payment than firms with less generalist CFOs due to their willingness to take risks with internal finance. Furthermore, such dividend-cut decision is more pronounced for firms with shorter-tenured CFOs, as with longer-tenure, CFOs become specialists in their current firms

and behave accordingly inside firms. Interestingly, the findings show that female board representation positively moderates the relationship between generalist CFO and firm dividend due to their monitoring role and ethical commitment towards stakeholders. Such dividend cut is prominent only in firms with less powerful CEOs. The results are consistent with different endogeneity checks and robustness checks. Overall, my results suggest that CFO generalist career experience is a key attribute and highlight the importance of gender composition of the board in curbing excessive managerial risk-taking.

The third study focuses on the contemporary debate on whether female CFOs, while deciding on non-price terms of debt like debt maturity, enjoy privilege with favourable terms and choose long term debt (Francis, 2014) or choose short term debt due to their ethical nature and transparency (Datta, Doan and Toscano, 2021)[1]. On top of that, my third study explores the first empirical investigation of the interplay between the female CFO and the financial expertise of the CEO and board of directors for a firm debt maturity policy. With a dataset of 7,255 observations of listed firms on the London Stock Exchange from 1999 to 2019, my results show that female CFOs take more short-term debt similar to the findings of (Datta, Doan and Toscano, 2021). In subsample analyses, such positive association is significant only for firms with lower CFO tenure and lower firm financial constraints suggesting that female CFOs are not risk takers, as expected to pierce through the glass cliff, instead, it is their mere ethical attitude to receive external monitoring with refinancing. The results are consistent with different robustness checks. Finally, the CFO stock option significantly alleviates the positive association between female CFOs and short-term debt. With more stock options, the CFO becomes more of a shareholder and may be prone to avoid unnecessary external supervision. Further analyses show that financial sector expert CEOs and boards curtail female CFOs' short-term debt-taking. The study contributes to the literature by observing the conditions under which female CFOs lead to significant effects on firm

[1] I could not check the possibility of female CFO being discriminated with respect to non-price terms of debt due to data unavailability; however, the gender based credit discrimination studies on female entrepreneurs in the UK context cannot be undermined to reject such possibility.

outcomes and how the financial expertise of the CEO and board contribute as a mediating factor for corporate governance.

In summary, the thesis contributes to the literature on when and how CFOs significantly influence firms' internal corporate financing decision like liquidity management and dividend payout decision as well as external financing decisions like debt maturity structure within the CEO and board dynamics.

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Chapter 1

Introduction

1.1. Background

With the evolution in business challenges in the global market, the task and responsibility of the Chief Financial Officer (CFO) has extensively progressed from a mere back-office treasurer and controller towards a strategic partner to the Chief Executive Officer (CEO) and internal advisor to the board of directors. Besides their fiduciary duties and core responsibility to monitor critical financial decisions, CFOs are inbounded with additional responsibilities with strategic planning, sourcing low-cost capital, liquidity management, risk management and mergers and acquisitions. For example, a recent article in Fortune entitled "How CFOs can pull their weight in M&A" states that "Whether they're playing a central role in a takeover or readying a company for acquisition, CFOs have cast off the bean-counter stereotype by driving M&A strategy."[2] Despite the growing significance of CFOs in corporate financial decisions and their legacy of outstanding contribution towards accounting-related decisions, existing literature has primarily concentrated on the influences of CEO on firm policies and outcomes (e.g., (Malmendier and Tate, 2005; Graham, Harvey and Puri, 2013; Custódio and Metzger, 2014). Prior studies on CFOs are mostly focused on the USA firms CFO, whereas, the UK firms CFO have unique practice of being executive board members that offers an interesting narrative to research on how UK CFOs influence firm financial policies within dynamic board. On top of that, how CFOs interplay among the interrelated internal and external financial polices like cash, dividend, and external financing, particularly debt maturity structure, would be an noteworthy empirical question to seek for answers. Finally, studies on female CFOs have mixed evidence that requires further clarification, for example, in the USA context, female CFOs prefers short term debt (Datta, Doan and Toscano, 2021), whereas, bank prefers female CFOs with long term debt (Francis et al., 2013); this area on female CFOs and debt maturity structure is under-researched in the UK context. In this thesis, I attempt to address these prominent research gaps and investigate accordingly in the UK context.

[2] See the article, "How CFOs can pull their weight in M&A", by Nick Rockel, Published on February 24, 2023.

1.2. Motivations

This thesis aims to investigate the impact of CFOs in corporate financial decisions as crucial members of top management teams, under the supervision of the board, using a UK sample of all non-financial firms listed on the London Stock Exchange. The rationale behind selecting the UK is that, in most of the listed companies in the UK, CFOs sits on board as executive directors, unlike their counterparts in USA listed firms. This high presence of CFOs on UK board can be attributed to their responsibility to ensure in-time superior financial information delivery towards the board (Financial Reporting Council, 2011: Section 1.16) as well as towards the Higgs Review 2003 and the UK Corporate Governance Code, that advocate a balanced mix of executive and independent non-executive directors on the board. Furthermore, the percentage of UK CFOs sitting on other companies' boards as non-executive directors in advisory roles is remarkably higher than that of the USA CFOs (Florackis and Sainani, 2018). Thus, the UK corporate environment provides a unique setting to explore the significance of CFOs under board governance.

As CFOs' roles are evolving with time, a key aspect of this thesis is to develop a measurement index to identify the diverse career experience of CFOs and assess their impact on corporate policies. I follow the upper echelon and agency theory to relate CFO attribute and firm financial polices in each empirical studies in my thesis. This CFO diverse career index is measured with a set of CFO experience features that include (1) the number of organisation types, (2) the number of sectors, (3) the number of firms, and (4) the number of roles in which the CFO had worked on a cumulative yearly basis. These four attributes are combined into a single index using factor analysis (FA). Based on the index value, I classify CFOs into "Generalist" versus "Specialist/ less Generalist". The higher the value of the index, the more generalist the CFO is and vice versa.

Furthermore, CFO has strategically dynamic relations with the CEO and the board of directors who are involved in key decision-making inside the firm,; thus, it is important to understand the dynamic environment that might motivates or sometimes hinder CFOs to decide on the firm financial policies. I expect that CFOs can impact firm policy when they have higher managerial discretion, greater flexibility to work and

power to influence, and vice versa (see, Hambrick, 2007; Wangrow, Schepker and Barker, 2015). The difference in CFO influence on firm policies due to the CFO attribute will not be translated into observable outcomes, if CFO influence on firm strategies is restricted by the CEO or the board. Since CFOs are second-man to the CEO in the top management team, this condition allows us to test how the power of the CEO moderates CFO impact according to CEO dominance and principles of reciprocity from social exchange theory. Additionally, I consider board moderation by board female representation and financial expertise following research dependency and gender based social role theory. Prior studies have presented strong evidence for the effective monitoring role of female directors. Also, the financial expertise of the CEO and the board members are expected to have a genuine interest in the CFOs impact on firm financing policies. In the first two empirical chapters, I utilise the CFO generalist experience to examine how CFOs affect firms' liquidity and dividend policy in moderation with the female representation on the board. In the final chapter, I examine the impact of female CFOs on firm debt maturity decisions along with the moderation from financial expert CEOs and board of directors.

In Chapter 2, I briefly discuss the relevant theories and conceptual framework of the thesis. As this thesis aims to investigate CFOs' impact on firm financial policies in the presence of board monitoring, I employ Upper Echelon Theory (UET) and Agency Theory to address the managerial influence on firm policies. I also refer to findings from psychological studies while explaining the link between managerial attributes and individual risk attitudes. Furthermore, I utilise Managerial Discretion Theory, Resource Dependency Theory and Social Role Theory to address the CEO supervision and board governance of CFOs while they decide on firm financial strategies. I provide a conceptual framework on how the study variables are interlinked and how I have designed the analyses.

1.3. Research Questions, Data and Contributions

In each of my empirical chapters in this thesis, I investigate two main questions with respect to CFOs and firm financial polices, these are, (1) whether and how CFOs influence firm financial polices and (2) how board moderate the decision proposed by

the CFOs given UK CFOs are executive board members. All of my three empirical chapters address these two major questions with respect to different set of CFO attribute and firm policies. As mentioned earlier, my thesis is focused on the UK context due to unique board sitting criteria of the UK CFOs.

In Chapter 3, I analyse the effect of the CFO generalist experience on the firm cash policy, moderated by female board representation. The worldwide increase in firm cash holding draws the attention of academia and practitioners to investigate the motives, determinants and consequences of the high cash holding level (Weidemann, 2018). Considerable media attention and shareholders' criticism have been observed in the UK for a significant increase in the cash level for the past decades. By the end of June 2020, UK "private non-financial corporations" (mainly the corporate sector) had accumulated, including global deposits, gross cash worth almost £900bn, equivalent to 40% of the UK GDP, while it was less than 10% in 2010 (according to Office of National Statistics figures).[3] This large cash reserve with lower returns has accelerated shareholders tension who want raised dividends, enhanced investment, or active management in mergers and acquisitions to increase returns. Even the economists in the Bank of England expressed their concern that such cash piling might disappoint the economic growth of the UK.[4] Among the various explanations for what makes firms pile cash, one prominent cause is managerial entrenchment to serve their own purpose while harming shareholders. Such cash holding by managers can damage business trust and economic activity. The board of directors are expected to monitor and regulate such value-eroding management behaviour. Prior studies show that, on a index based strength measure, strong UK CFOs significantly reduce firm cash holdings (Florackis and Sainani, 2018); however, further resaerch is needed to investigate CFO, CEO and board dynamics. Thus, Chapter 3 examines whether and to what extent CFO generalist experience affects firm cash policy under the supervision of powerful CEOs and female board directors, using a sample of 8,280 observations of non-financial UK-listed firms over the period of 1999

[3] See the article, "Companies' post-pandemic cash reserves at record high – by the numbers", by ICAEW Insights, Published on November 27, 2020.

[4] See the article, Carneys Salutary Change of Mind, in The Financial Times, published on: February 12, 2014.

to 2019. The study also uncovers possible mechanisms that could drive the CFOs' cash-holding decisions in current governance settings.

The empirical results based on different data analysis techniques in Chapter 3 show that firms with generalist CFOs, CFOs with higher score in the index, hold more cash than those with less generalist CFOs. One potential explanation is that generalist CFOs are risk takers and have a higher need for funds for overinvestment; they keep aside cash for their overinvestment as the internal fund, which is less costly less strictly monitored by external financiers. Consistent with this view, a positive association between generalist CFOs and firm cash is significant in firms with R &D intensity and in firms with overinvestment. All results are robust to the tests addressing endogeneity concerns. Furthermore, I observe that firms with generalist CFOs have higher marginal value of cash holdings for than that of firms with less generalist CFOs, this findings may pose possible explanation on why CFO hold more cash. The result is significant only in cases where the firm CEOs are less dominant. With a similar measurement of the generalist CEO, I find that only generalist CFOs are relevant for the cash-holding decision. I also documented that generalist CFOs have higher precautionary and less agency demand for cash holdings, which brings the board monitoring question relevant. The result shows that the board's independent executive female directors (INED) have significant negative interaction terms with generalist CFOs while regressing on firm cash. Thus, the results indicate that generalist CFOs may hold more cash to internally finance their higher investment need as risk-taker managers and board INED female representation significantly monitor CFO behaviour and curve such risk-taking by lowering the cash level and correcting misalignment of incentives between managers and shareholders.

In Chapter 4, I investigate the effect of generalist CFOs on firm dividend policy, moderated by female board representation. Studies on dividend policy are still relevant due to the presence of high-level, unexplained variance in the dividend models predicted with firm-level, market-level, board-level and management-level factors (Brav *et al.*, 2005; Deshmukh *et al.*, 2013). The dividend is perceived to be the residual after investment and financing decisions; prior studies show that CFOs impact both of these financial decisions (e.g., Florackis and Sainani, 2018; Ferris and Sainani, 2021;

Schopohl, Urquhart and Zhang, 2021). UK firms tend to pay more regular dividends than USA firms; around 80% of listed UK firms pay regular dividends (Ataullah *et al.*, 2022; Renneboog and Trojanowski, 2011). The dividend is considered a risk-averse strategy compared to investment (see, Caliskan and Doukas, 2015; Bernile, Bhagwat and Yonker, 2018). Generalist managers are expected to take risk (May, 1995) in firm-level decisions and thus may pay less dividends. The UK, where CFOs mostly sit on board, provides a perfect research setting to test the impact of generalist CFOs on firm dividend decisions. I also observe how powerful CEO and board female representation moderate the dividend decision shaped by the CFOs.

The empirical analyses in Chapter 4 establish a relationship between firms with generalist CFOs and firm dividend policy following upper echelon theory. Using a sample of 8,289 observations of non-financial UK-listed firms for 1999 to 2019, I observe a negative relation between the presence of generalist CFOs and firm dividend payment. I also find that the presence of generalist CFOs also significantly reduces the dividend payment in firms with internal financing deficits, which indicates a generalist CFOs tendency to choose risky investments instead of dividend payment. Furthermore, such dividend-cut decision is more pronounced for firms with shorter-tenured CFOs. With longer tenure, CFOs become specialists in their current firms and behave accordingly to firm policy decisions. This negative association persist in the firm where CEO is less powerful. Interestingly, female board representation positively moderates the relationship between generalist CFO and firm dividend following resource dependency and gender based social role theory. The results are consistent with different endogeneity checks and robustness checks. Overall, the results suggest that CFO generalist career experience is an important attribute and highlight the importance of gender composition of the board to tackle excessive managerial risk-taking.

Chapter 3 and Chapter 4 focus on two internal corporate finance polices and find significance influence of CFOs. In Chapter 5, I focus on an external financing policy, firm debt maturity policy, and female CFOs due to its contemporary nature, mixed evidence and under-researched area in the UK CFO context. I use short-term debt, debt that will be matured within a year, as a proxy of maturity structure. Prior studies show that, in the UK, female CFOs significantly reduce firm leverage; however, such

ability is moderated by powerful CEOs and diverse boards (Schopohl, Urquhart and Zhang, 2021). On top of that, in the USA context, female CFOs and debt maturity literature have mixed outcomes. Studies on the gender-based difference in financial decision-making show that, female management, both CEO and CFO (La Rocca, Neha Neha and La Rocca, 2020; Datta, Doan and Toscano, 2021) are likely to issue more short-term debt[5] compared to their male counterpart due to their genuine ethical nature to maintain clean performance records with recurring external checks. On contrary to this findings, studies on bank loan literature show that female CFOs enjoy favourable price and non-price terms on loan and receive long term debts from banks due to their accounting transparency (Francis *et al.*, 2013). There is a research gap in the UK CFOs context whether female CFOs enjoy favourable terms or face gender based credit discrimination. However, excessive reliance on short-term debt might not be universally suitable for all firms depending on firms' financial health; such decisions are expected to be highly checked and balanced by financial expertise in monitoring authority due to their lower costs in acquiring information for firm financial transactions and the associated risks (Harris and Raviv, 2008; Minton, Taillard and Williamson, 2014). This chapter contributes and extends that line of research by investigating the relationship between female CFO and firm short-term debt, in the context of CEO and board's financial expertise.

The empirical findings in Chapter 5 indicate that firms with female CFOs have a higher short-term debt ratio. Using a large sample of 7,255 observations of non-financial UK-listed firms over 1999-2019, I find a significant positive association between female CFOs and short-term debt ratio, compared to male CFOs. Further analyses show that CEOs and board members with financial sector expertise/experience curtail female CFOs' short-term debt-taking. In subsample analyses, such negative association is significant only for firms with lower leverage ratios, lower CFO tenure, and lower financially unconstraint firms, suggesting that female CFOs are not risk takers (that might make them prone to take more short-term debt considering its refinancing risk). Instead, it is their mere ethical attitude towards receiving external monitoring with refinancing. Due to data unavailability, it was out of this research scope to check on

[5] as well as female board members (Li and Zhang, 2019).

gender based credit discrimination on female CFOs in the UK context, however, in general, UK female entrepreneur faces such credit constraints (Pavlova and Gvetadze, 2023; Sena et al., 2012; Kwong et al., 2012). Finally, the CFO stock option significantly alleviates the positive association between female CFOs and short-term debt. With more stock options, CFO becomes more of a shareholder and may be prone to avoid unnecessary external supervision. The results are consistent with different robustness checks. This study evident the conditions for significant observable effect of female CFOs in firm financial decisions and contributes to the literature. Overall, the evidence presented in Chapter 5 supports that firms with female CFOs are prone to take shorter-term debt, and such decision is moderated by financial expert CEO and board. Table 1.1 provides a summary of the key points on the three empirical chapters.

1.4. Structure of the Thesis

The thesis is organised as follows. Chapter 2 discusses the theoretical framework of the studies in the thesis. Chapter 3 investigates the effect of generalist CFOs on firm cash policy with the moderating role of female independent non-executive board of directors. Chapter 4 discusses the impact of generalist CFOs on firm dividend policy with the moderating role of the female board of directors. Chapter 5 examines the moderating role of the financial expertise of the CEO and board of directors on female CFO and firm debt maturity structure decision. Finally, Chapter 6 provides the concluding notes and implications.

Table 1.1: Summary of Study 1, Study 2, and Study 3

	Key Hypotheses	Sample	Dependent Variables	Explanatory Variables	Methodology	Main Findings
Study 1	H1a. Firms with more-generalist CFOs have lower cash holdings than firms with less-generalist(specialist) CFOs. H1b. Firms with more-generalist CFOs have higher cash holdings than firms with less-generalist CFOs.	8280 observations of non-financial UK-listed firms for 1999 to 2019	Cash Ratio	Generalist CFO	Panel Regression, OLS Estimator with Industry and Year Fixed Effects	Firms with Generalist CFOs keeps more than that of firms with less Generalist CFOs
	H2. Board with more independent non-executive (INED) female directors negatively moderate the relationship between generalist CFOs and firm cash holding.			INED Female Directors Number, Ratio, and Blau Index		Board with INED female directors negatively moderate the relationship between generalist CFOs and firm cash holding.
Study 2	H1. Firms with more-generalist CFOs have lower dividend payouts than firms with less-generalist CFOs.	8,289 observations of non-financial UK-listed firms for 1999 to 2019	Dividend Payout Ratio, Dividend Yield	Generalist CFO	Panel Regression, OLS Estimator with Firm and Year Fixed Effects	Firms with Generalist CFOs decrease dividend payment than that of firms with less Generalist CFOs.
	H2a. Highly gender diverse boards intensify dividend cuts in firms with more-generalist CFOs. H2b. Highly gender diverse boards rectify dividend cuts in firms with more-generalist CFOs.			Female Directors Number, Ratio, and Blau Index		Board with more female directors positively moderate the relationship between generalist CFOs and firm dividend.
Study 3	H1a: Female CFOs adopt a shorter debt maturity than their male counterparts. H1b: Female CFOs adopt a longer debt maturity than their male counterparts.	7,255 observations of non-financial UK-listed firms over 1999-2019,	Short Term Debt Ratio	Female CFO	Panel Regression, OLS Estimator with Firm and Year Fixed Effects	Female CFO takes more short term debt than that of their male counterpart.
	H2: Financial sector expert CEO negatively moderates the relationship between female CFOs and firm debt maturity decision.			Financial Sector Expert CEO Dummy		Financial Sector Expert CEO and Borad of Directors significantly and negatively moderates the positive association between female CFO and firm short term debt.
	H3: Board with financial sector board members negatively moderate the relationship between female CFOs and firm debt maturity decisions.			Ratio of Financial Sector Expert Directors		

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Chapter 2

Theoretical Framework

Background

This thesis aims to investigate (1) whether and how CFO attributes that are generalist career experience and gender influence firm financial policies, and (2) whether and how the board of directors moderate the decisions. To address the relationship between managerial attribute and firm policies, I primarily follow the idea of the upper echelon theory (UET) which suggests that top management's background characteristics (e.g., demographics, experience) influence firm policy. However, UET does not offer detailed explanation on how each of managerial attributes may influence firm outcome. To address this gap, I refer the general findings from psychology literature on how human attributes, both for in general and for top management team, opt for certain risk preference in individual level while decision-making on behalf of the firms they work for and consequently impact firm policies. My study develops on the thought that CFO attributes set firm-exogenous individual risk preferences while deciding on in firm cash holdings, dividend payment, and debt maturity decision. This explanation on risk-performance framework differs from agency theory assumptions as my study is focused on policy performance rather than risk-reward structure for the CFOs. With respect to my second query, I employ managerial discretion theory, social exchange theory with principles of reciprocity, resource dependency theory and social role theory to investigate the moderating role of the board of directors between managerial decisions and firm policies. CFOs are part of top management team and operate under the final verdict of the board of directors. Theoretically, influence of CFOs in firm policies are constrained by how much independence they have under the CEOs and the board. The set of theories that I choose to follow, support me to develop the foundation of my opinions on whether and how CFO attributes influence firm policies under board moderation before I test the empirical data. In the following discussion, I highlight the main idea of the theories as well as their critical link with my research questions in positivist research framework based on hypotheses.

2.1. Relevant Theories on Managerial Attributes and Firm Policies

Neoclassical economic theory assumes that managers are homogenous inputs to the production process; if so, managers are be expected to be perfectly substitutable, and their attributes should not be a significant factor for determining firm policy and performance. However, as firm cannot take decision on its own, firm level decision are often designed at individual manager level. With their diverse personality and separable intensions from firm entity, managers can significantly influence on firm outcomes that substantially differ from one another given the complex business environment with potential alternatives to choose from. This unavoidable paradox is acknowledged in the behavioural theory of the firm (Cyert, and March, 1963) that poses the conflict between individual managers and their firms. In this thesis, I employ the UET, psychological literature and the agency theory to develop the theoretical structure on how managerial attributes influence on firm policies.

2.1.1. Upper Echelon Theory

UET is widely used theory in studies related to managerial characteristics and firm policies. UET is built on the seminal work of Dearborn and Simon (1958) that recognizes managers show difference in attitude, perspective and knowledge depending on their functional background. Proposed by Hambrick and Mason (1984), UET may be the first comprehensive framework proposing managerial background characteristics partially predict the organisational outcome, both in the case of the choice of firm strategies and execution of plan to achieve firm performance at desired level. Within the bounded rationality of managers, UET suggests that a good match of contextual factors and upper-echelon attributes of managers can better forecast corporate situations than using one alone; this recognises the significance of managerial characteristics on corporate decisions. Furthermore, Hambrick and Mason (1984) state that background and experience develop personalized lenses to judge in context of honesty and ambiguity tolerance at individual (manager) level, this distinct patterns

in judgement result in diverse set of choices to select form alternatives for each complex problem inside the firm and leads to different performance in similar context for firm. Studies in this thesis focus on "ambiguity tolerance" feature of individual managers, that is, CFO risk preference developed from attributes, gender and experience, and how such attribute(s) influences firm's financial policies. UET describes the framework but lacks a complementary explanation on why and how each of these attribute (gender and experience in this case) influence decision individually. As I aim to study CFO attribute on individual basis, that is career experience and gender, I follow the findings from studies on human attributes, an interdisciplinary approach to understand and explain attribute, risk preference and decision-making phenomena.

2.1.2. Psychology Literature on Managerial Attributes and Risk-Taking

Following recent trends in managerial studies, studies in this thesis refer to the literature on psychology to posit plausible explanation on how managerial attributes leads to individual risk preference that eventually impact on their design over firm decisions. My research interest is similar to that of human psychology literature where researchers are concerned on how human act and react on uncertainties that involves risk-taking while considering human limitations on information processing about the events studied. These studies are less concerned with how to measure and model risk attitude for rational choice.

Earlier studies in psychology literature (Mischel, 1968) commonly presumed individual risk-taking as personality feature (Plax and Rosenfeld, 1976). Psychology literature has abundant experimental studies on human attributes and their influence on decision-making in uncertain future; findings of these studies suggest some common notions. Difference in risk attitude due to career experience and gender difference have long been studied in sociology, psychology, and behavioural economics. Managers with generalist career experience (working in diverse industries, firms or roles) shows risk-taking attitudes due to their confidence with dynamic career (Custódio, Ferreira and Matos, 2013; Custódio, Ferreira and Matosc, 2019) and easy job switching (Ma, Ruan, Wang, *et al.*, 2021). In general, females are observed as risk-averse compared to their

male counterpart(Barber and Odean, 2001; Croson and Gneezy, 2009; Charness and Gneezy, 2012). There is a possibility that, managers are different in risk attitude from general human beings as they have enhanced knowledge and skill on risk management that improve their risk tolerance level. Recent trend on managerial studies provides sufficient evidence on common notions developed by the psychological literature. For example, studies on female top management show that females managers usually go with conservative accounting style than that of their male managers (Francis *et al.*, 2015). Female are less interested in merger and acquisitions and keep lower leverage (Huang and Kisgen, 2013). Studies done on managerial transition (e.g., from male to female managers or vice versa) presents that female CEOs reduce firm risk significantly (Faccio, Marchica and Mura, 2016). The general risk aversion tendency of female managers are evident in these studies. However, studies on female in monitoring role (board of directors) shows female are strong monitor of managers (Adams and Ferreira, 2008).

2.1.3. Agency Theory

One of my research aim is to understand how CFO attributes may influence firm financial policies. To comprehend such query from theoretical lens, I also included the agency theory (Jensen and Meckling, 2007) for a possible alternative explanation to my research framework.

Agency theory discusses on the conflict of interest between stakeholders and how to mitigate such conflicts with proper reward-penalty incentives. In particular to my research interest, according to agency theory, managers (CFOs) are appointed agent and their interest is preassembly different from that of the owner of the firms, the shareholders. As managers takes decision on behalf of firms, shareholders have to ensure check and balance with expert and robust board of directors (for example, in this cases, female independent non-executive directors, financial sector experts directors) whether their (principal-agent) divergence in interest arise conflict and lead managers to degrade firm value in long run in exchange of managers' entrenchment. There could have been another plausible solution to avoid conflict, by providing equity incentives (stock

options) to the managers to align their interest similar to that of shareholders. Notably, stock options induce managerial risk taking as managers assume themselves as owner of the firm rather than mere compensation based defined-benefit workers. Empirically, firm-awarded CFO risk-taking incentives (stock options) have significant impact on firm liquidity and debt maturity structure.

However, my empirical studies on CFO attributes and firm financial policies does not comply with some critical assumptions of agency theory. For example, agency theory assumes that conflict arises due to difference in risk attitude between managers (risk averse in general) and shareholders (risk neutral in general); to mitigate such conflict alignments of risk interests by providing risk taking incentives to managers is one way out (Eisenhardt, 1989; Jensen and Meckling, 2007). On the contrary, my empirical chapters are exploring risk attitudes of CFOs due to their diversity in individual attributes (career and gender, in particular) which does not go with the idea of manager being risk averse. On top of that, firm-awarded risk incentives do not directly address these exogenous factors that might shape CFOs' risk attitude. Nonetheless, agency theory articulates the boarder background on why personal choice of managers due to their diverse risk preferences should even be a substantial matter for the firms. My third empirical chapter shade some light on awarding stock options to CFOs that somehow highlight the positive incentives proposed by the agency theory. Thus, I rely mostly on UET and by some means on agency theory to sketch and propose the theoretical expectation on CFO attributes and firm policies.

In summary, in line with my research query, according to UET, Generalist CFOs will significantly impact firm financial policies as generalized career experience should provide them with sufficient information to develop an distinct outlook for uncertainty about firms future compared to the specialized CFOs. On top of that, psychology literature suggest that generalized CFOs are expected to develop risk-taking attitude due to their diverse resource pool and easy job mobility; this risk taking attitude is expected to make firm policies taken by generalist CFOs substantially different from their counterparts.

2.2. Relevant Theories on the CEO and Board Monitoring of the CFOs

As CFOs work in the top management team under the CEO and board governance, the effect of CFOs on the firm policy should be observed through the lens of how much managerial discretion the CFO enjoys. For all my empirical chapters, I utilize CEO dominance and board moderation on CFOs decision with respect to firm financial policies. The later section of this chapter discuss on this CEO dominance and monitoring role of board on CFOs in detail.

2.2.1. Managerial Discretion Theory

The managerial decision-making environment inside firms is one of the critical factors in explaining the difference in firm outcomes due to the variety of managerial preferences. Managerial discretion theory addresses power dynamics inside firm. This theory focuses on the existing flexibility of firm managers to influence firm policies (Hambrick, 2007); if managers have a high range of discretion to influence firm policy, managerial risk attitude due to versatile attributes are highly likely to be echoed in the firm decision, whereas, if their flexibility and power are restricted, their difference in preference may not be translated into a significant difference in firm decision outcomes (Timothy J. Quigley and Hambrick, 2015; Wangrow, Schepker and Barker, 2015). I deploy this theory to observe the conditions when CFOs' risk-taking preferences due to gender and experience are highly likely to impact firm policies but might not lead to significant measurable effects on firm policies.

CFOs' discretion depends on their liaisons with others in top positions in the firm, especially the CEOs and the board of directors, who can inhibit or expedite CFOs' influence on firm policies (Wangrow, Schepker and Barker, 2015). Thus, I observe the power of the CEOs, board female representation, CEO and board financial expertise as significant administrators of the CFO's impact on firm policies. The more powerful the CEOs are, the more dominant they might be and the less likely they are to delegate responsibility to CFOs for independent decision making. Thus, theoretically CEO

dominance turns out to be a significant factor to regulate CFOs' influence on firm policy no matter which CFO attribute(s) is selected for research.

2.2.2. Social Exchange Theory -Principles of Reciprocity

I utilize another theory, social exchange theory and principles of reciprocity, to develop my expectation with respect to how CEO might influence CFO decision on firm policies. This theory is widely utilized to explain the mutual benefit scenario between CEO and the board of directors' appointment (Westphal and Zajac, 1997; Ma and Khanna, 2016), that is, the board will defer to the top management, specially the CEO, as independent directors feel indebted for being offered a board position and in exchange independent directors provide supports to the management. The norms of reciprocity (Gouldner, 1960) is to mutual reinforcement in social exchange, not only by helping the benefactor directly but also to support him indirectly in an implied social exchange situation (Ekeh, 1974). In particular to my research interest, CEOs and CFOs can be part of such social exchange situation where the CFOs might feel pressure of reciprocity if appointed by the CEOs, and take policy decision that best suits the vocals of the CEOs. This test of reciprocity with CEO-CFO Co-option is one of the theoretical contribution of my study.

2.3. Relevant Theories on the Board Monitoring of the CFOs

The board, as the final decision maker on firm policies, is expected to synchronize the proposed decision of CFOs; thus, board members have direct and indirect authority on CFOs' choice. To clarify the board moderation role on CFOs in my research, I utilize two more theories – resource dependency theory and social role theory.

2.3.1. Resource Dependency Theory

The board of directors have two prominent roles -monitoring and advising the top management team (Monks and Minow, 2004). Board monitoring can be similar to the

"watchdog" role so that managerial and shareholders' interests are aligned. In the advisory role, the board is hands-off regarding monitoring and uses directors' expertise to counsel management in planning and implementing corporate strategies. Resource dependence theory (Pfeffer, J. and Salancik, 1978; Hillman and Dalziel, 2003) highlights the substantial role of board members' human and social capital in maximising corporate governance mechanisms to protect shareholders' interests by monitoring the management. This theory sets a perspective on how the board function- directors' human capital (expertise, knowledge, and professional networks) plays an active role in reducing agency problems and in achieving firms' goals through four channels: (a) advice and counsel, (b) legitimacy, (c) access to information, and (d) commitment or support from outside elements. These channels support access to required but scarce in-house resources (Mizruchi and Stearns, 1994). This theory proposes that firms are likely to search for, procure and exchange resources from outside to attain survival as a going concern and consequently create a dependency between firms and their externality. Board is representation of this dependency on external resources that might not have arranged in given time and constraints. Board is a pool of required external resources with diverse expertise, skills, strategy, network and engagements (Cordeiro, Profumo and Tutore, 2020). However, these resources pool can only be fully utilized if they are procured from diverse source, board of directors, that blend their unique experience and knowledge (Hillman, Shropshire, and Cannella, 2007). Among board characteristics that represent board resources, the board size, independence, tenure, directors' expertise, age, and gender, have been tested and empirically evidenced to have a significant impact on firm policies. Resource dependency theory has been explored in recent studies as a critical lens to understand the impact of gender diverse board on firm policies and performance. However, disentangling board moderating roles on managers while they design firm policies has become a recent trend in literature; only a few studies have done board moderation with CFOs (Schopohl, Urquhart and Zhang, 2021).

In this thesis, I noticed two distinct features of the board while observing board moderation on the CFOs- board female representation and financial expertise. Board members' financial expertise is aligned with the understanding of resource dependency

theory, whereas female board representation and its moderating effect on CFOs need further clarification.

2.3.2. Social Role Theory

Female representation on board has been studied with a focus on a variety of theories, such as social identity (Ashforth and Mael, 1989), female critical mass (Kramer, Konrad and Erkut, 2006), and social categorisation theory (Tajfel, 1981). However, arguably, most empirical studies that utilised those theories discuss female presence in terms of tokenism or minority status on board while ignoring other substantial factors that shape women, for example, knowledge, experience, and moral practice. The female can bring their diverse view and expertise at the board level along with necessary critical external resources (Hillman, Canella and Harris, 2002; Hillman, Shropshire, and Cannella, 2007). Furthermore, in most cases, these theories believe that females are systematically (e.g., cognitively, physiologically, and psychologically) different from their male counterparts (Croson and Gneezy, 2009).

The role of female directors can be viewed from two schools of theories – economic and social. Economic-based theories focus on economic (Croson and Gneezy, 2009), organisational (Srinidhi, Gul and Tsui, 2011), and psychological (Khlif and Achek, 2017) difference between male and female; these theories suggest that females are risk averse compared to their male counterpart. Prior studies aligned female risk aversion with a less aggressive, altruistic, and responsible mindset of females (Powell and Ansic, 1997). These can arguably facilitate that female directors may monitor management strictly than male directors.

On the contrary, socially based theories focused on ethical and social roles suggest that females are, on average, moral and ethical than their males counterparts (Adams and Funk, 2012). Social role theory (Chizema, Kamuriwo and Shinozawa, 2015; Eagly, 1987) suggests that females are more prone to show 'communal' traits that helps to maintain relationships with concern for others' wellbeing. In contrast, male counterparts are more 'agentic', focusing on achievement, control, status and power. These empathetic traits of female directors may support them in gaining the trust of the management

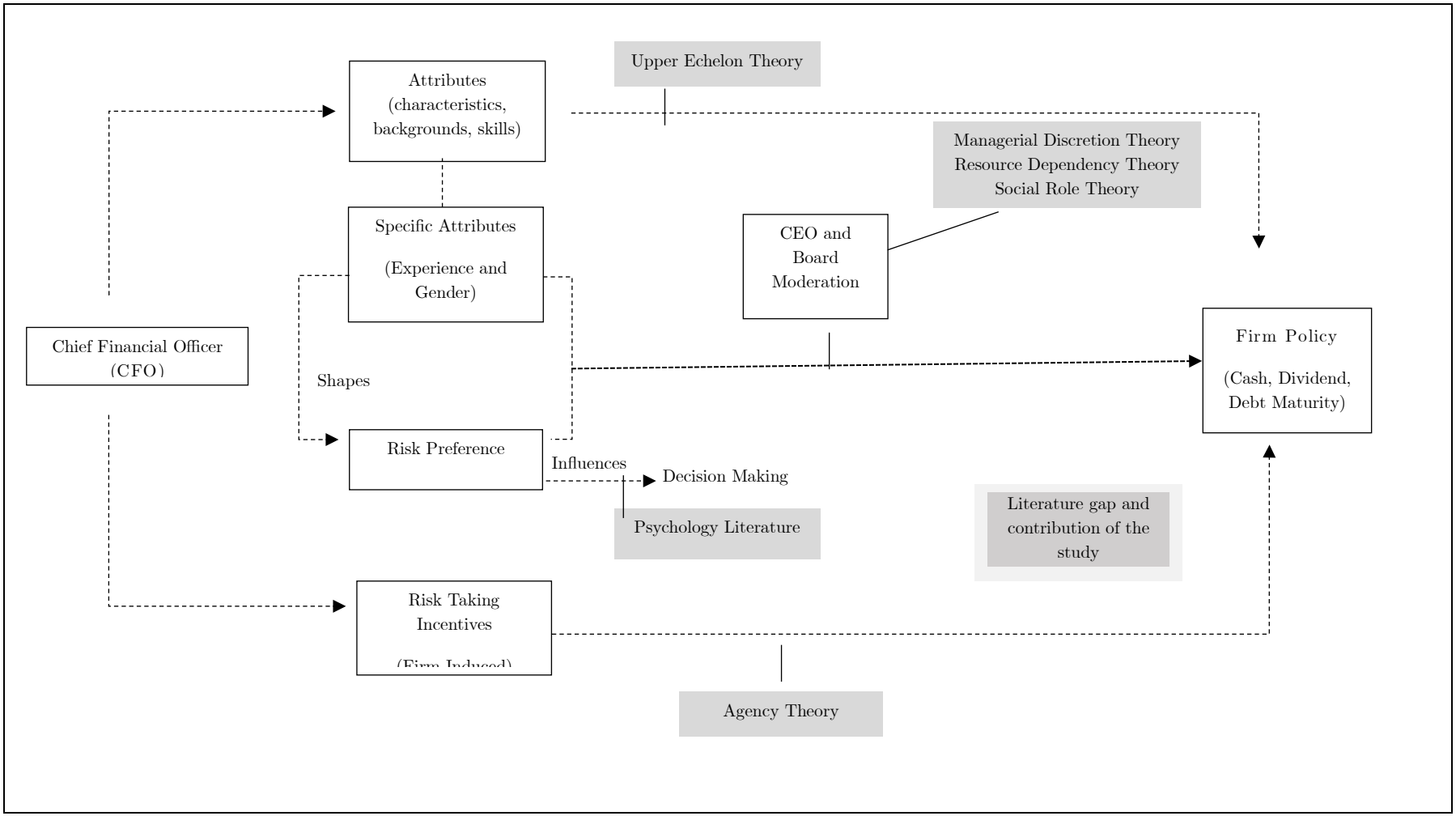
team and arguably permit female directors to perform advising roles better than their male counterparts (Adams and Ferreira, 2008).

Prior studies have employed several theories to explain monitoring role of female board directors. However, I utilize gender socialisation theory (Liu, 2018) and resource dependence theory to explain how female directors may influence top management while managers are designing firm policies. First, gender socialization theory proposes that due to their variety in interest and attributes, female and male act and response differently in social interactions (Liu, 2018). Female are arguably practice participatory and shared leadership and follow democratic decision making styles (Ben-Amar, Chang and McIlkenny, 2017). These collaborative qualities ensure board effectiveness with enhanced quality of discussion and better communication with different types of stakeholders. Also, the theory notes that female directors are more prone to engage in policies with ethical aspects than their male counterparts. Female directors tend to show universalism traits with low orientation to power and seeking welfare for people and environment (Adams and Funk, 2012). Furthermore, board gender diversity ensure timely information dissemination to the stakeholders through integrated reporting due to concerns for stakeholders (Nadeem, Suleman and Ahmed, 2019).

From resource dependency perspective of diverse board, female directors are more likely to build networks and connections with external settings, which is crucial part of business survival, compared to their male counterparts. Female representation brings diverse human and social capital that enhance firms' social outcomes along with disclosures (Mallin and Michelon, 2011). This capacity of enhanced external engagement with stakeholders (Pucheta-Martínez and Gallego-Álvarez, 2019), posits female directors with better information flow and better governance. Furthermore, recent studies show that, women behave in ways contrary to existing board norms, rather than gender stereotyping, for example, by coming to board meetings highly prepared, ask questions for clarifications, thus, impacting interactions in the board (Wiersema and Mors, 2023). In summary, by bringing their specialized resources and outlook on boardroom interactions, female representation play a vital role on monitoring managers, the CFOs in my research.

In Figure 2.1, I provide the conceptual framework in a diagram to highlight the relevant theories to my research questions in the three empirical chapters. To address my research question one, that is, whether and how CFO attributes like career experience and gender influence and firm policies, I utilized upper echelon theory, agency theory, and literature on human psychology with respect to risk attitudes. UET and agency theory endorse the idea of individual agent can influence firm level decision and psychology literature supports with generalized findings on how human attribute set risk appetite and consequently drive managers to choose firm policies in a certain way that fits managerial risk appetite. Furthermore, with respect to my research question two, that is, how board moderates the CFO choice on firm policies, it is theoretically explained with managerial discretion, social exchange, resource dependency and social role theory in a befitting manner. As a part of top management team, CEO dominance and CEO reciprocity is expected to influence CFOs' independent decision taking. On the other hand, the board being the final authority for strategic decision, expertise and social outlook of board members is expected to play a significant role to moderate any decision taken by the management, in my case, the CFOs. Noteworthy to mention, I utilize the social exchange theory and principles of reciprocity along with managerial discretion theory to explain CEO-CFO dynamics which is one of the contribution lenses of my thesis.

Figure 2.1: Theoretical Framework for CFO Attributes, Board Moderation and Firm Financial Policies



Source: Author.

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Chapter 3

CFO Generalist Career Experience and Firm Cash Policy: Moderating Role of Board Gender Diversity[6]

[6] I presented this chapter in BAM Annual Conference, September 2023, and ASFAAG 3rd Annual Conference, July 2023. I presented this chapter in SUMS Finance PhD Workshop, January 2023. I am thankful for the feedback I received from the participants.

3.1. Introduction

The worldwide increase in firm cash holding draws the attention of academia and practitioners to investigate the motives, determinants, and consequences of the high level of cash holding (Weidemann, 2018). Well-documented excess cash holdings by the UK firms during the sample period between 1999 and 2019 posed concern among stakeholders on probable adverse effects on investment and economic growth along with effective corporate governance mechanisms to deal with the practice. Concerning cash holdings determinants, previous studies have primarily focused on firm-level determinants (Kim and Bettis, 2014), quality of governance (Harford, Mansi and Maxwell, 2008), industry setting (Deb, David and O'Brien, 2017), and personal attributes of CEOs (Aktas, Louca and Petmezas, 2019). Agency theory (Jensen, 2009) contends that large cash holding by the firm heighten conflicts of interest between stakeholders and managers as managers are naturally presumed to be opportunistic on such cash spending. CFO holds a key position among the top management team regarding firm finance policies, particularly cash holding. Furthermore, CFOs in the UK are mostly executive board members and also play role as non-executive board members in other firms (Florackis and Sainani, 2018) and UK CEOs tend to be less powerful compared to the US CEOs (Fu and Zhang, 2019; Aguilera *et al.*, 2006; Keenan, 2004; this unique board sitting practice by UK CFOs provide us with a distinctive set up to examine the CFO's influence on firm liquidity management. Prior studies evident that the strong UK CFOs holds less cash compared to their counterpart (Florackis and Sainani, 2018); however, considering UK CFOs board sitting, further research is necessary to investigate on CFO attributes and board dynamics in the UK context. Does CFO's generalist career experience impact firm cash holding? Following the upper echelon theory and agency theory, I posit that the generalist experience[7] of CFOs can

[7] Risk preference due to CFO attributes, age (Jarkko *et al.*, 2021; Jinghui *et al.*, 2019) and gender (Schopohl, Urquhart and Zhang, 2021; Liao, Smith and Liu, 2019) have widely been addressed in prior studies; I focus on CFO experience and risk preference in this study.

affect firm cash holdings for two reasons—managerial risk-taking and avoiding higher financing costs for more investment.

Among a CFO's attributes, experience is highly relevant to a firm's strategic choices in areas such as cash policy (Florackis and Sainani, 2018), as experience builds cognitive knowledge, shapes perceptions of firm opportunity and threat, and influences managers' strategic preferences. Following the seminal work of Becker (1962) distinguishing managers' general and special skills, a vast literature has demonstrated a significant role for generalist CEOs in higher risk-taking (May, 1995). Generalist managers have greater strategic relevance (Finkelstein and Hambrick, 1989), with a broader knowledge base (Karaevli and Tim Hall, 2006) and enhanced information-processing ability (Custódio, Ferreira and Matosc, 2019) and they are more prone to risk-taking (Ma, Ruan, Wang, *et al.*, 2021). Thus, this study attempts to explore how the generalist experience of CFOs influences firm cash-holding decisions.

CFOs belong to top management team with supervision by board of directors. Female directors are considered strong board monitors (Adams and Ferreira, 2008). Prior research suggests that the female contribution to boards depends on their functions (Liu, Wei and Xie, 2014), there needs to be an understanding of how board roles fulfilled by female directors influence firm cash policies. In their recent study, Atif, Liu and Huang (2019) present that female board directors have significant negative relationship with firm cash holding. Prior studies show persistent gender differences obvious in economic behaviours (Croson and Gneezy, 2009). In particular, female's preferences for more stringent monitoring and governance (Adams and Ferreira, 2008) and higher risk aversion (Faccio, Marchica and Mura, 2016; Bernile, Bhagwat and Yonker, 2018) are much obvious. In a recent study, Cambrea, Tenuta and Vastola (2019) suggest that female INEDs who are appointed to with monitoring role attempt to reduce agency costs by lowering free cash flow amount; consequently, the firms with more female INEDs reduce cash balance to limit the availability of cash to opportunistic managers. Entrenched managers could invest extra cash in negative value projects for entrenchment at the cost of minority shareholders (Liu, Wei and Xie, 2014). Following resource dependency theory and gender base social role theory, I examine on how female

directors respond to CFO's cash holding decision and thus posit their moderating role on generalist CFOs' firm liquidity management.

With a sample of 8280 firm-year observations listed on the Main Board of the London Stock Exchange, I study the impact of generalist CFOs on firm cash holdings by adjusting empirical models of Opler *et al.*, (1999) and Bates, Kahle and Stulz (2009). I find a significant positive relationship between generalist CFOs and firm cash levels. The results suggest that generalist CFOs have intentions to hold more cash for their higher investment needs than their counterparts. Such higher cash holdings can provide generalist CFOs with more flexibility on their future long-term expenditures without market scrutiny through external financing. This finding supports the CEO overconfidence literature, where overconfident CEOs take risky policies, avoid external financing perceiving it costly, and have a notable incentive to pile up cash for new investment.

To ensure my analyses results are not constrained by omitted variable bias, I control for observable CFO, CEO, and board characteristics such as CFO age, female CFO, CEO Chair dummy, board size, and board independence. The results are robust to include these controls and alternative specifications. Moreover, I arrived at similar and consistent results even after controlling the models with industry and year fixed effect. This further alleviates potential concerns that findings of the studies are driven by unobserved time-invariant heterogeneity. To understand CFO's managerial discretion with respect to CEO power and delegation, following managerial discretion, CEO dominance and principles of reciprocity based on social exchange theory, I examine the association between generalist CFO and firm cash holdings by splitting the sample into firms with (1) CFO-CEO Co-option and (2) CEO accounting expert dummy. The positive relationship between generalist CFOs and firm cash is significant in cases where CEO power is less pronounced.

I deal with endogeneity issues that may drive the results; for example, the board may choose to recruit CFOs with specific attributes that best fit the firm's strategic needs. If I do not properly control for such, the difference in cash between generalist CFOs may be mistakenly qualified towards difference in CFO attributes rather than the divergence in firm features. I address endogeneity in three ways. First, I implement

instrumental variable (IV) approach and employ two potential instruments (CFO network size and Top Rank, Top Rank is a dummy variable indicating whether the CFO has a business degree from top-ranked universities, e.g., Russel groups, Ivy League, and the Times Higher Education Top 25 universities) for generalist CFOs and obtain similar results. Second, I utilize Heckman two-stage least square method with an exogenous variable in the selection model (number of roles per industry per year). Third, I use propensity score matching technique and compare between firms with more generalist CFOs with a corresponded subset of peers with less generalist CFOs similar to respective observable firm characteristics. The analysis results from these endogeneity tests further confirm the primary findings.

I offer a plausible explanation for the positive connection between cash holdings and generalist CFOs. If generalist CFOs are highly prone to risk-taking, they are expected to invest more and are more motivated to hoard cash for low-cost, low-monitored internal financing than their counterpart. I conduct two tests to explore this possibility. First, I split the entire sample in sub-samples based on the intensity of expenditure in research and development (R&D) with respect to yearly median R&D expense of firms. I observe the positive relation between firm cash and the generalist CFO is significant only for the subsample of intense R&D firms. Second, I do similar firm subsample analyses based on overinvestment and find that the positive relationship between generalist CFO and firm cash is significant only for firms with overinvestment. These findings indicate that the generalist CFOs in firms with a higher tendency to invest more are likely to have a higher demand for funds, which can be attributed to their propensity to keep more cash and accumulate internal funds.

Furthermore, I check whether or not board independent non-executive (INED) female representation moderates the firm cash decisions of generalist CFOs. The results confirm the hypothesis and imply that the presence of female board directors works as an useful monitoring tool on the generalist CFOs; depending on context, female directors may change the CFO's decisions on the firm's liquidity management. Managerial behaviour might be disciplined and monitored with a straightforward governance mechanism, i.e., effective female representation in board. Prior studies (Chen, Leung and Goergen, 2017);Banerjee, Humphery-Jenner and Nanda, 2018)

present that the female directors' inclusion in board is positively linked with noteworthy progresses in firms (for example, acquisition, firm performances), and negatively linked with aggressive investments and firm level risk-taking, conditional on firm having an overconfident risk-taker CEO.

I offer a plausible explanation for moderating female representation on the positive association between cash holdings and generalist CFOs. As female representation is vigilant in monitoring, they are expected to balance liquidity management and agency problems due to abundant cash. In particular, female directors are not expected to moderate CFOs' cash holdings if firms have traditional motives for cash holdings, transactions, and precautionary motives. In contrast, female directors are expected to moderate CFOs' cash holdings if the firm undergoes agency problems due to free cash flow. I test these hypotheses by separately looking at sub-samples of firms that are expected to have high and low traditional demands for cash holdings. These are constructed using common proxies, (1) growth opportunities (Tobin's Q) for the transaction motive; (2) financial constraints (KZ index) for the precautionary motive; and (3) asset turnover for the agency motive.

I contrast the level of cash holdings between high-transaction/precautionary/agency and low-transaction/precautionary/agency groups to verify the effects of traditional motives in explaining the effects of generalist CFOs on corporate cash policies. In line with the expectations, I find that the positive relation between generalist CFO and firm cash level is significant only in the firm sub-samples with low precautionary demand and low agency cost, I did not find any significant result for transaction motives. This finding suggests that female representation on board may play an important monitoring role for firm governance.

This paper contributes to the empirical literature by researching on how managerial attributes is related to firm liquidity management, e.g., cash policies (Florackis and Sainani, 2018; Doan and Iskandar-Datta, 2021). Existing managerial literature predominantly draw attentions towards how CEO attributes affect firm liquidity and other policies related to finance decisions. Despite their significance in the firm financial decision (for example, liquidity (Florackis and Sainani, 2018; Xu *et al.*, 2019), debt (Mobbs, 2018; Schopohl, Urquhart and Zhang, 2021), merger and acquisition (Ferris

and Sainani, 2021), very few studies focus on CFOs. The study attempt to extend this less explored area of literature by examining the significance of CFOs' generalist experience on firm financial decisions. My study is developed upon the studies of Chava and Purnanandam (2010), Custódio and Metzger (2014), Hoitash, Hoitash and Kurt (2016), Florackis and Sainani (2018), Mobbs (2018) Datta, Doan and Toscano (2021). Custódio and Metzger (2014) show that the financial expertise of CEOs can influence firm policies and have a higher general ability index calculated based on their range of past careers. Chava and Purnanandam (2010) find that firm-induced option-based CEO risk rewards are comparatively critical for firm liquidity policy than that of CFOs. Mobbs (2014) documents that firms with CFO board membership face fewer financial restrictions, thus keeping less cash. Hoitash *et al.* (2016) observe that CFOs with accounting expertise are more prone to avoid external financing; they source funds externally only in industries with high future potentials. Doan and Iskandar-Datta (2020) present that female CFOs lower excess liquidity in firms; such reduction does not lead to suboptimal investment policies. Finally, Florackis and Sainani (2018) show strong CFOs keep less cash in UK firms due to lower precautionary demand of strong CFOs. However, they do not report any the moderating role of female directors on CFOs' cash decisions. The study complements and extends these studies in three crucial ways: First, rather than a single attribute, I dynamically measured generalist CFO with four dimensions of CFO experience. Second, I attempt to investigate and provide rationales for why generalist CFOs hold more cash than their counterparts. This study suggests a new motive for cash holdings and the risk-taking attitude of managers besides the other empirical findings; for example, firms hold cash due to earnings volatility and high cost of external financing (Kim, Mauer and Sherman, 1998), growth prospects (Pinkowitz and Williamson, 2002), asymmetric information (Kim, Mauer and Sherman, 1998), policy uncertainty (Phan *et al.*, 2019) and political uncertainty (Xu *et al.*, 2016). Third, Despite CFO being an active voice on the board in the UK and a leading decision taker in firm liquidity management, empirical studies on cash primarily focus on the USA firms and CEOs; further evidence from the UK firms support development of wider understanding on firm CFOs and cash holdings. Finally, I provide evidence that female board representation effectively moderates and mitigates agency issues that might arise from excess cash holding by generalist CFOs. Female directors

with monitoring roles can ensure robust controls and consequently reduce cash holdings to lower agency costs, and managerial opportunism (Harford, Mansi and Maxwell, 2008). I show that female directors only moderate CFOs' cash-hoarding decisions in firms with a lower traditional motive for cash holdings. The study upholds the evidence that female-inclusive governance may limit value-eroding managerial decisions while promoting strategies to ensure long-term value.

The remainder of the study is organised as follows. Section 2 discusses the related literature and the development of my hypotheses. Section 3 describes the data, how I construct the main variables of interest and moderating variables, and presents the summary of descriptive statistics. Section 4 presents my main empirical findings from the analyses, offers probable explanations for my research findings, and deals with the endogeneity issues. Finally, Section 5 presents a conclusion on the findings.

3.2. Related Literature and Hypotheses Development

3.2.1. Generalist Managers and Firm Policy

Upper echelon theory (Hambrick and Mason, 1984) first proposed that managerial traits and experience may influence firm outcomes with respect to both firm performance and strategy choices. Managerial attributes and experience set perspectives regarding honesty and ambiguity tolerance for individual managers, which in turn influence those managers' choices when solving complex problems, subsequently leading to different outcomes for similar firms (Hambrick and Mason, 1984).

Managerial experience and knowledge build the cognitive abilities that influence strategy preferences inside firms (Carpenter, Geletkancz and Sanders, 2004; Herrmann and Datta, 2006). In the seminal study, Becker (1962) distinguished two types of managers based on diversity of experience: generalists and specialists. Generalist managers have diverse career and industry experience and transferable skills, whereas specialist managers have single-industry or firm-specific expertise. Generalist CEOs

accumulate experience from several firm and industry contexts, thereby enhancing their information-processing abilities (Dragoni *et al.*, 2011), reducing firms' communication costs (Ferreira and Sah, 2012), and developing their ability to accomplish complex tasks (Custódio, Ferreira and Matos, 2013). Furthermore, generalist CEOs master firm-specific resources, thereby ensuring their environmental fit (Garicano and Rossi-Hansberg, 2006), improving their relationships with investors (Murphy and Zabojnik, 2007), facilitating recovery from financial distress (Gilson and Vetsuypens, 1993), promoting firm innovation (Custódio, Ferreira and Matosc, 2019), and benefit shareholders (Betzer *et al.*, 2020). Thus, generalist managers tend to have greater strategic relevance (Finkelstein and Hambrick, 1989), and such skills are more valuable at the upper echelons (Custódio, Ferreira and Matos, 2013).

However, in some cases, generalist managers are considered disadvantageous for firms due to their diverse and transferable skills. In particular, generalists enjoy greater mobility (Ma, Ruan, Wang, *et al.*, 2021), which may encourage weaker commitments to their firms' previous strategies (Hambrick, Geletkanycz and Fredrickson, 1993) and engagement in riskier projects (Custódio, Ferreira and Matosc, 2019). This risk-taking can cause additional agency problems for firms (MAY, 1995; Mishra, 2014; Gounopoulos and Pham, 2018). In addition, this career mobility comes at the expense of career specialization (Mishra, 2014), which often means superficial knowledge in various areas and mastery in none (Zuckerman *et al.*, 2002). Thus, generalists may struggle to align current firm resources with the external environment (Wang and Murnighan, 2013) due to their limited firm-specific knowledge (Kang and Snell, 2009) and possible irrelevance in new contexts (Reuber and Fischer, 1997). Furthermore, they may learn more slowly (Morrison and Brantner, 1992) or provide negative knowledge transfer with high reliance on past cognitive records (Hamori, 2015).

In contrast, specialist managers have better insights into the interrelationships between firm resources and environmental factors (Ma *et al.*, 2021), as they are more efficient in acquiring, assimilating, and integrating knowledge (Brown and Duguid, 1991). They can more easily process information in their relevant fields(Bolton and Dewatripont, 1994). As they have a narrow scope of diverse experiences, they tend to have a narrow range of knowledge. This lack of range compels them to stick with existing firm

practices (Geletkanycz and Black, 2001), and they may be unwilling to change firm strategies on questions such as cash holding policy.

3.2.2. Firm cash policy and motives for cash holdings

Liquidity management of firms has been one of the widely researched area for the last few decades; particularly for the last twenty years since seminal research conducted by Kim, Mauer and Sherman (1998) and Opler *et al.* (1999). Increased interest among researchers to publish in this topic is arguably due to worldwide consistent increase in firm level cash holdings over time (Amess, Banerji and Lampousis, 2015). For instance, during the 1990s, UK-firms cash level on an average signified 9.9% of total assets of the firms (Ozkan and Ozkan, 2004), whereas, the same cash ratio has turned out to be 13.7% during the last twenty years (Farinha, Mateus and Soares, 2018). Firms in both developed and emerging economies have practiced similar trends. As a consequence, this worldwide increase in firm level cash holdings motivated researchers and practitioners for in depth analysis on this topic, with the primary aim of identifying the motives, drivers, and consequences of holding cash.

Literature on firm cash holding shows that firms hold more cash due to diverse motives, for example, transaction motive (Meltzer, 1965), precautionary motive (Bates, Kahle and Stulz, 2009), agency motive (Dittmar, Mahrt-Smith and Servaes, 2003; Jensen, 2009) etc. Among these, widely used ones are transaction and precautionary (later one includes speculative motive in this study following Opler *et al.*, 1999; Bates *et al.*, 2009) motives[8] for operations as well as agency motive by the managers (Myers and Majluf, 1984; Jensen, 1986; Harford, 1999; Opler *et al.*, 1999; Harford, Mansi and Maxwell, 2008). According to precautionary motives (Almeida *et al.*, 2013), the adverse expectations regarding financing prospects in future compel firms to accumulate internally generated funds with cash and raise precautionary reserves. Transaction and

[8] Keynes (1936) proposes three motives for cash holdings: for daily operations (transaction motive), for unexpected contingencies (precautionary motive) and for future investment opportunities (speculative motive); studies combine precautionary and speculative motives together (e.g., Opler *et al.*, 1999; Bates *et al.*, 2009).

precautionary motives developed from trade-off theory, whereas agency motives indicate agency theory; however, the precautionary motive may also indicate some issue of agency problem (Opler *et al.*, 1999). Furthermore, the literature suggests that firms hold cash more for precautionary purposes than agency motives due to the dynamic business environment (Bates *et al.*, 2009; McLean, 2011). Both theories explain the use of cash but do not consider the attribute of the decision-making manager. In this study, the risk-taking attitudes of managers with cash responsibility, that are CFOs, would also affect firm cash policy.

Following the pecking order theory, managers favour retained earnings over debt, debt over equity, and short-term debt over long-term debt when financing new investments to resolve information asymmetry. The higher the asymmetry, the costlier the new equity issuance as it trades at a lower price. The firm holds more cash in case of the higher cost of external financing and volatile earnings (Kim *et al.,* 1998). Furthermore, firms hold cash even with growth opportunities associated with risky cash flow (Pinkowitz and Williamson 2001). Literature documented several determinants that motivate the firm to keep more cash or liquid assets; these are- firm size (Al-Najjar 2013), firm ownership (Gupta and Bedi, 2020), degree of diversification (Duchin, Ozbas and Sensoy, 2010), hedging (Sun, Yin and Zeng, 2022), supply chain (Nguyen *et al.*, 2021), corporate governance (Dittmar, Mahrt-Smith and Servaes, 2003; Kuan, Li and Liu, 2012), multiple directorships (Chou and Feng, 2019), CEO belief (Deshmukh, Goel and Howe, 2021), and board gender diversity (Atif *et al.* 2019).

As a critical corporate decision, firm cash holdings provide liquidity to firms for their operational necessities but increase firm costs too (Opler *et al.*, 1999). If a firm holds cash with precautionary motives, that is, holding cash to manage cash flow volatility, external funds uncertainty, or higher cost of financial distress, firms become beneficiary with high cash holding (Keynes, 1937; Opler *et al.*, 1999; Acharya, Gale and Yorulmazer, 2011). Furthermore, holding cash with such a motive will increase firm value in case of financial constraint, poor credit rating, or financial distress (Faulkender and Wang, 2006; Denis and Sibilkov, 2010; Chang, Benson and Faff, 2017). However, excess cash holdings (non-operational cash holdings) are considered detrimental to

shareholders' wealth due to lower returns and double taxation (Opler *et al.*, 1999; Jensen, 2009).

The most reasonable motive for keeping non-operational liquid money in firm is associated with managerial entrenchment opportunity that arise agency problem inside firms (Jensen, 1986). Liquid asset like cash provides managers flexibility for discretionary and self-fullings expenditure with minor scrutiny by the stakeholders. Such managers shield their entrenchment activities with abundant cash reserves to avoid market inquiry from investors, press and analysts; they do not have to face external pressure for funding (Harford, Mansi and Maxwell, 2008). Holding cash for managerial self-interest in low-growth firms, that is, agency perspective, can be value-eroding for firms as the firms are not distributing unproductive cash as dividends. Such agency problems erode the value of cash, especially when firms have poor governance (Dittmar, Mahrt-Smith and Servaes, 2003; Jiang and Lie, 2016).

3.2.3. Managerial Attributes and Firm Cash Policy

Literature on cash holding is extensive yet focused on investigating firm-level determinants of cash. Recently, a growing trend of literature focus on managerial attributes and behavioural bias on cash level (Deshmukh, Goel and Howe, 2021), the value of cash (Aktas, Louca and Petmezas, 2019), and adjustment momentum towards optimal (El Kalak, Goergen and Guney, 2020). However, very few studies have observed the impact of CFO attributes on cash.

Within CFO demographics, prior studies find mixed evidence on female CFOs and firm cash policy. Doan and Iskandar-Datta (2021) observe the effect of female CFOs and agency cost of cash flow. Their findings show that female CFOs decrease firm cash levels significantly in firms with surplus cash, which is expected to reduce agency conflict due to managerial discretion. They also show that female CFOs pay more dividend in firms with surplus cash to increase distribution toward shareholders. Furthermore, they document that this cash reduction does not lead to suboptimal investment. Finally, they comment that female CFOs undertake more ethical decisions (gender-ethics hypothesis) but do not necessarily take more risk-averse decisions (risk-aversion hypothesis) than their male counterparts. However, Xu *et al.* (2019) examine female CFOs' liquidity management in Chinese publicly listed firm through the lens of precautionary and agency theories. Their findings show that female CFOs keep more cash, and such effect is stronger in financial constraints firms and non-SOEs (state-owned enterprises) firms. They also find that such excessive cash holding of female CFOs is not appreciated by market sentiment (e.g., decreased marginal value of cash). Finally, they note that if female CFOs can improve their abilities (six CFO attributes used in the paper of Florackis and Sainani (2018) – executive, outside directorship, top 3 rank, tenure, financial expertise, and education), they can lessen the gender-based differences in firms' cash holdings.

With firm induced CFO risk incentive provided through stock option, Chava and Purnanandam (2010) examine managerial risk-taking incentives provided by the firm, both for CEO and CFO, and document that such incentives significantly affect the firm financial policies. They mention that CEOs' firm induced risk incentives are related

with leverage and cash level, whereas CFOs' risk incentives are associated with debt maturity structure and earnings management through accruals.

With CFO experience, prior studies find CFO tenure has positive whereas CFO board membership has negative association with firm cash policy. Cai and Li (2022) observe that CEO-CFO tenure consistency and firm cash holdings have a positive association. Such a relationship is more evident in firms with the same person as CEO-Chairman, a lower board independence ratio, and a greater agency problem. Furthermore, CEO-CFO tenure consistency destroys the value of cash holdings. In the US market, a firm with a board member CFO keeps lower cash and can quickly adjust to optimum capital structure after financial shock as they are in less financial constraints; however, these advantages lessen when CFO leaves the board (Mobb 2018). Khan and Mauldin (2021) conduct comparative analyses on CFOs and CEOs between board directorships in other firms and firm policies in own firms, such as, investments, capital structure, and firm performance. For their sample period from 2003 to 2014, they find that fewer CFOs sit on outside boards than CEOs. Those CFOs with outside directorship have less issues with underinvestment, and sensitivity between cash level and cash flows. Furthermore, they evident long-term consistent performance for their firms through their positive knowledge transfer. On the contrary, the authors find less support of such knowledge transfer from CEOs with outside directorship. Their findings suggest that outside directorships allow CFOs to enhance their network with other professionals and improve firm practices.

With managerial conservatism measured by handwritten signatures (emotionally restrained disclosure styles) motivated by psychology, Duong, Banti and Instefjord (2021) analyse managerial conservatism and firm decision and observe that CFO conservatism determines cash holdings and financial decisions better than CEO conservatism. Their findings also show that conservative CEOs make a safer investment with low research and development expenditure and low finical leverage. Furthermore, they are highly likely to use their cash to stock repurchase rather than paying cash dividend.

With CEO-CFO personality dynamics, Veerhoek (2022) analyses CEO and CFO personality difference on the level of firm cash holdings. With a sample from US publicly

listed firms for 2002-2019, CEO and CFO personality differences, with respect to conscientiousness, extraversion, agreeableness, openness and neuroticism) are negatively associated with cash holdings, and such association is more pronounced when there is a low similarity between CEO and CFO. Furthermore, such association is less pronounced in firms with financial constraints, no CEO duality, smaller boards, lower board independence, and higher female representation.

Besides analysing CFO attribute on standalone basis, Florackis and Sainani (2018) developed an Index with a set of attributes to represent the influential capacity of the CFO. These include board membership, outside board directorship, seniority (as a proxy by age and/or tenure), financial expertise, pay status within the top three, and relative pay compared to CEO . They remark that strong CFOs who has high score in the index, keep less cash as they can easily arrange external fund even in a tight credit market, e.g., the financial crisis of 2008. They conclude that firm can even lessen agency problem with strong CFOs with analysing the two proxies of agency cost- excess cash (Jensen 1986) and CEO ownership (Nikolov and Whited, 2014).

With CFO overconfidence, Ben-David, Graham and Harvey (2007) show that companies with overconfident CFOs use lower discount rates to value cash flows, invest more, rely more on debt specifically long term debt, are less likely to pay dividends. As generalist managers have similar practice in firm policies, I focus on managerial overconfidence literature in detail.

Managerial overconfidence and firm cash holdings is another strand of literature based on managerial psychology. It suggests that overconfident CEOs need to maintain more cash from internal financing for their subsequent investment needs (Chen, Ho and Yeh, 2020). Overconfident CEOs are highly likely to opt for more investment as they overestimate future pay-off of the firm. In their survey on CFOs, Ben-David *et al.* (2013) find that manager with overconfidence are highly likely to undervalue the volatility of forthcoming cash flows and the probability of failure due to the misperception of their control over the future outcomes and initiate more aggressive firm policies like overinvestment and heavy reliance on debt financing. In their experimental research on participants who acted like managers, Pikulina, Renneboog and Tobler (2017) find their overconfident subjects are highly likely for higher

investment levels compared to their moderately or less confident counterparts. They are highly likely to embark on value-destroying merger and acquisitions, similar to the outcome with excess cash holdings in firm and agency problem (Richardson, 2006).

Furthermore, they disagree with the stock market response regarding the firms' equity value with the investors and rely highly on internal finance. Overconfident CEOs overinvest only if firms with ample internal funds and underinvest if they have to seek external financing (Malmendier and Tate, 2005). Overconfident CEOs invest more if they have sufficient internal funds than firms without overconfident ones. However, overconfident CEOs are likely to expense more on capital investment when firm keep adequate financial slacks. To manage the internal fund, they even attempt to decrease dividend payment (Deshmukh, Goel and Howe, 2013). Due to their overestimation of investment payoffs, they avoid seasoned equity offering (Malmendier and Tate, 2005) and use internal financing for new projects.

Overconfident CEOs tend to overestimate firms' upcoming cash flow and eventually consider their firms are undervalued in the equity market (Malmendier, Tate and Yan, 2011). Thus, they perceive external financing as too expensive (Deshmukh, Goel and Howe, 2021) and extensively depend on funds from internal sources to finance their investment needs. Studies show that overconfident CEOs hold more value for cash (Aktas, Louca and Petmezas, 2019) and invest excessively only when they have sufficient fund from internal sources (Malmendier and Tate, 2005). However, overconfident managers keep cash reserves when they sense potential business opportunities in near future (Huang-Meier, Lambertides and Steeley, 2016). Thus, their demand for cash in precautionary motive is usually lower than that of their counterparts. Some studies show female CEOS are in general less overconfident and more conservative and keep more cash than male CEOs (Zeng and Wang, 2015).

Considering these empirical findings on risk-taker overconfident CEOs' behaviour concerning corporate financing decisions, firm cash policy with risk-taking generalist CFOs can be explained by precautionary and agency motives. However, risk-taking behaviour is related with human psychology literature and precautionary/agency motives are related with economics literature on objectivity of functions; thus, it is

important to investigate the impact of risk-taking generalist CFOs on firm cash holdings.

Prior literature focuses on board role and firm properties (e.g., Fama, 1980; Harford *et al.*, 2008; Myers and Majluf, 1984; Ozkan and Ozkan, 2004) to mitigate agency issues with excess cash holdings. Literature shows that investors perceive a higher value of firm cash holding in firms with efficient internal control (Chen, Chang and Lee, 2020), better institutional monitoring (Ward, Yin and Zeng, 2018), better disclosure quality (Huang and Zhang, 2012), lower information asymmetry (Drobetz, Grüninger and Hirschvogl, 2010) and better quality of earnings (Sun, Yin and Zeng, 2022). However, little is explored in the empirical literature on influence of gender diversity to monitor opportunistic behaviour of managers in terms of cash holdings. As female directors have been found relevant for better monitoring, it will be interesting to investigate their contribution to the firm cash-holding decision made by CFOs.

3.2.4. Moderating Role of Board Gender Diversity

Through the theoretical lenses of planned behaviour (Ajzen, 1991) and social influence (Cialdini and Goldstein, 2004), I may expect that managers tailor their behaviour according to norms and common social context of their environment. The risk-taking behaviour of generalist CFOs could be affected by the presence and the behaviour of strong monitoring of the female board of directors. Thus, I aim to observe how female board representation affects cash policy proposed by generalist CFOs.

Prior studies present a significant role of board gender diversity in firm policies and performances. However, only a few studies focus on the moderating role of board gender diversity on firm management as a moderator of baseline relationship (e.g., (Westphal and Stern, 2007; Tuggle, Schnatterly and Johnson, 2010; Triana, Miller and Trzebiatowski, 2014; Mitra, Post and Sauerwald, 2020; Karavitis, Kokas and Tsoukas, 2021). For example, Triana, Miller and Trzebiatowski (2014) present that female directors' power and firm performance positively moderate the board gender diversity's influence on strategic change. Mitra, Post and Sauerwald (2020) present shareholders are less dissent against female directors with lower board presence depending on

shareholders' value. Overall, board diversity moderates the baseline relationship in these studies by refining and contextualizing its understanding.

Gender diversity enhances the board outcomes. First, diversity improves the board's capacity to advise, monitor, and service roles. Second, diversity also moderates the interaction among board members regarding cohesion (Tuggle, Schnatterly and Johnson, 2010) and interpersonal trust and openness (Zhu *et al.*, 2013). The more gender-diverse board and more involved in monitoring (Adams and Ferreira, 2008). Also, balanced gender representation beyond critical mass (over a maximum of three members) is positively linked with board engagement and strategic discipline (Nielsen and Huse, 2010). On the contrary, diversity in the background is negatively related to board behaviour (Amore, Garofalo and Minichilli, 2014), and diverse subgroups inside the board may create faultiness and hamper the effective functioning of the board (Veltrop *et al.*, 2015).

Firms worldwide are increasing female board presentations due to regulatory pressure and the voluntary inclusion of more females to tap the benefit of diverse boards. Prior studies find a significant influence of gender-diverse boards on firm outcome, valuation, and risk attitude (Adams and Ferreira, 2008; Adams and Funk, 2012; Ahern and Dittmar, 2012). The general outcome of the prior studies are that firm strategies like merger and acquisition, investment, innovation, and liquidity are highly influenced female board representation as they ensure better corporate governance with effective monitoring. Female directors are considered more independent than male directors (Kang, Cheng and Gray, 2007). Due to their extensive practice of piercing the glass ceiling, female directors are less conformist and more out-spoken than their male counterparts (Carter, Simkins and Simpson, 2003). Furthermore, with their diverse perspectives and experience, they can support resolving complex issues with their better deliberations (Huang and Kisgen, 2013). Gender-diverse boards engage in constructive discussion and are less likely to suffer more group thinking (Chen, Crossland and Huang, 2016). Female directors emphasis on welfare and corporate social responsibility (Shaukat, Qiu and Trojanowski, 2016), successful acquisition negotiator with lesser bid premiums (Levi, Li and Zhang, 2014), opt for less risky financial and capital expenditure selections (Faccio, Marchica and Mura, 2016), and improve firm

profit (return on assets and return on sales) performance (Liu, Wei and Xie, 2014). On top of that, female directors enrich the legitimacy of firm practices (e.g., Hillman, Shropshire, and Cannella, 2007), utilize their uniqueness to improve board efficiency, and act as a replacement for corporate governance (Srinidhi, Gul and Tsui, 2011).

Previous studies observe that greater female representation in board improve corporate governance through more proficient monitoring by directors (e.g., Rhode and Packel, 2014). Female directors reinforce corporate governance procedures. They are found to provide dividend at higher rate (Chen, Leung and Goergen, 2017), more accountability through rigorous audit efforts (Gul, Srinidhi, and Tsui, 2008), and accomplish diligent monitoring functions (Adams and Ferreira, 2008).

The monitoring role of female directors (Adams and Ferreira, 2008) works as a governance tool that leads to adjusting biased managerial behaviour. Females have lower outlooks towards acting opportunistic, violating regulations, and undertaking crimes in the business context (Steffensmeier and Allan, 1996), while ensure information transparency (Srinidhi, Gul and Tsui, 2011). Also, CEOs are hold accountable with stronger female presence in case of poor stock market performance (Adams and Ferreira, 2008). Furthermore, increased female board representation ensure governance role through controlling CEOs' overconfident decisions on firms' investment and M&A (Chen *et al.*, 2019). On top of that, board with female independent director reshape overconfident CEOs' excessive capital expenditure controlled and similar to their counterparts (Banerjee, Masulis and Upadhyay, 2018). The study also finds an increase in board gender equality results in significant positive change in male counterparts' behaviours, e.g., choosing less risky decisions, showing greater responsibility, and ensuring accountability of CEOs (Xing, Gonzalez and Sila, 2018).

Female directors are so far portrayed as vigilant strategic planner for the firm. Prior studies note cash as a strategic asset (George, 2005; Kim and Bettis, 2014) for adapting with business uncertainty. Cash has context-specific impact on firm (Deb, David and O'Brien, 2017). If firms are highly competitive and growth focused, cash holdings brings value by supporting firms with adapting uncertainty; however, in poorly governed firms, cash is misused and mostly used in value appropriation contexts and harm firm performance in long run (Deb, David, and O'Brien, 2017). As benefits of holding cash

depends on the firm context, I expect that the female directors with their consistent and effective monitoring role will be an interesting moderation to observe on association between generalist CFOs and firm cash policy.

Level of cash holdings ensure firms flexible liquidity management for uninterrupted operation on daily basis, however, excess cash holding with non operational purposes can be detrimental to firm wealth in log run due to lower rate of return and double taxation (Jensen, 1986). One of the problematic reasons for holding more cash is contributed to the agency cost between opportunistic manager and shareholders (Jensen, 1986). Due to its liquid nature, cash holdings allows managers to be involved in less monitored, discretionary, and self perquisite expenditure. These managers can get rid of market scrutiny by employing internal funds for their questionable expenditure and avoiding external financing sources, specifically the capital market (Harford, Li and Zhao, 2008). Generally, the board is expected to monitor and support management actively to make better strategic decisions (Schwartz-Ziv and Weisbach, 2013). An effective independent board controls managerial bias like overconfidence in acquisition (Kolasinski *et al.*, 2013) and risk disclosure decisions (Banerjee, Humphery-Jenner and Nanda, 2018). However, very little is known about how board gender diversity might influences managerial opportunistic behaviour with respect to cash keeping.

To understand how female presence on board have the potential for maintaining a balanced cash reserve and controlling opportunistic managerial cash holding decision, I can review and relate the diverse managerial motives of cash holdings. If precautionary and transaction motive are the primary determinants for cash holdings (Beuselinck and Du, 2017), then a high level of cash reserve will add value to shareholders' wealth (Belghitar and Khan, 2013) as abundant internal funding can be employed in new capital expenditure projects even if firm is in financial difficulties (Bates, Kahle and Stulz, 2009), this internal fund use will further reduce transaction cost related with the instability in financial markets (Opler *et al.*, 1999). Female directors are noted in the literature as an agent of lower firm risk-taking (Faccio, Marchica and Mura, 2016), they may opt for holding more cash reserves to preserve firm financial flexibility and to avoid expensive external financing. On the other hand, holding more cash may encourage

entrenched managers to use liquidity for personal gains (high compensation, empire building, value-destroying merge, and acquisitions) and worsen agency problems (La Rocca, Neha Neha and La Rocca, 2020), female directors may prescribe for lower cash holdings. Thus, with their consistent and effective monitoring skills (García Lara *et al.*, 2017), female directors can be attributed to voluntarily decreasing the excess amount and availability of cash towards opportunistic and incompetent managers.

Prior studies on female directors and firm cash policy show mixed evidence. Studies have found a significant negative association between gender diversity and firm cash due to monitoring the effect of independent female directors respective to their presence and voice following critical mass theory (Atif, Liu, Huang, 2019). Furthermore, prior study shows that female directors have no direct association with firm cash, whereas, they countervail overconfident CEOs' excess cash keeping and reduce cash to optimum (Tosun, El Kalak and Hudson, 2022). Concerning the outcome of female monitoring of cash policy, whether they will keep more cash for precautionary reasons, or keep less cash to avoid agency issues, might be dependable on what roles female directors are playing on board. Board governance comprises with both monitoring and strategic decision making role dynamically set by different members inside the board (Usman *et al.*, 2018). Among the board of directors, independent directors are non executive presentations from outside expert panels with an aim to advise and control top management team, and protect both shareholders and other stakeholders with non-shareholdings. Therefore, I argue that independent nonexecutive female board representation is an important moderation that reduces the risk-taking behaviour of generalist CFOs on investment, and eventually reduces the cash accumulation of generalist CFOs for internal financing.

3.2.5. Hypotheses Development

Following the upper echelon theory and agency theory, generalist CFOs and firm cash policy are connected at least from two strands of literature, the significance of CFOs and/or significance of managerial risk-taking attitudes on firm policies. Among key senior managers, CFO is entrusted with firm financial management, including policy design and implementation (Mian, 2001). The CFO's personal attribute is theoretically

expected to influence the policy proposed under the CFO role (Hambrick and Mason 1984). CFO attributes are significant in firm financial policies, e.g., cash holding and liquidity (Florackis and Sainani, 2018, Xu *et al.*, 2019), debt (Mobb, 2018; Schopohl, Urquhart and Zhang, 2021), merger and acquisition (Ferris and Sainani, 2020). In their studies, Florackis and Sainani (2018) find a significant negative association between strong CFOs and firm cash levels due to solid CFOs' relatively weak precautionary motive and better ability to raise external financing in a distress period compared to weak CFOs. They measured strong CFOs with an index with the first factor of six CFOs' attributes' to indicate CFOs' relative capacity. In this study, rather than the capacity to arrange to finance in distress, I am interested in observing the risk-taking attitude of generalist CFOs' with respect to firm cash holdings to fill the literature gap.

Second, as mentioned by Hambrick and Mason (1984), with the bounded rationality assumption, managers' risk preferences could affect firm level risk-taking; it is arguable how their perception of uncertainty shapes the level of cash holdings. Studies show that holding cash or liquid asset is a conservative financial policy(Cassell *et al.*, 2012; Ferris, Javakhadze and Rajkovic, 2017) compared to new investments with higher debt. Also, cash is held for precautionary reasons (Bates, Kahle, and Stulz 2009; Keynes 1936; Opler *et al.* 1999) and could be termed as negative debt, hedging activity, or item used for reducing external financing dependency (Chava and Purnanandam, 2010). Furthermore, managerial attributes related to their risk preference e.g., CEO overconfidence (Tosun, Kalak and Hudson, 2022), CEO optimism (Huang-Meier, Lambertides and Steeley, 2016), CEO previous experiences (Bernile, Bhagwat, and Rau 2017; Dittmar and Duchin 2016), and compensation (Chava and Purnanandam 2010), may change the cash holdings demand with precautionary motive. As generalist managers exhibit distinct risk-taking attitudes due to their dynamic careers (Custódio *et al.,* 2013, Custódio *et al.*, 2019) and easy job switching (Ma *et al.*,2019), I expect that generalist CFOs will have a negative association with firm cash holdings; the more diverse the CFOs' experience, the more risk-taking their attitude are likely to be (Custódio *et al.,* 2013) and the less cash holding they will maintain. Thus, my first hypothesis is as follows:

H1a. Firms with more-generalist CFOs have lower cash holdings than firms with less-generalist(specialist) CFOs.

However, recent studies on overconfident CEOs and firm cash holdings show that overconfident CEOs hold more cash to arrange internal funding for their investment as they tend to believe external fundings are too costly for their firms (Chen, Ho and Yeh, 2022). A similar outcome is possible with generalist CFOs due to their risk-taking tendency with new investments (Custódio *et al.*, 2013). Compared to less generalist CFOs, more generalist CFOs work with different firms in diverse positions that help them to accumulate experience from several firm and industry contexts, thereby enhancing their information-processing abilities (Dragoni *et al.*, 2011), reducing firms' communication costs (Ferreira and Sah, 2012), and developing their ability to accomplish complex tasks (Custódio *et al.*, 2013). Furthermore, generalist CEOs master firm-specific resources, thereby ensuring their environmental fit (Garicano and Rossi-Hansberg, 2006), improving their relationships with investors (Murphy and Zabojnik, 2007), facilitating recovery from financial distress (Gilson and Vetsuypens, 1993), promoting firm innovation (Custódio *et al.*, 2019; Murphy and Zabojnik, 2007), and benefit shareholders (Betzer *et al.*, 2020). Thus, generalist managers tend to have greater strategic relevance (Finkelstein and Hambrick, 1989), and such skills are more valuable at the upper echelons (Custódio *et al.,* 2013). Therefore, firms with generalist CFOs may retain more cash to respond quickly with an investment opportunity and enhance firm value for external stakeholders. Thus I posit an alternative hypothesis:

H1b. Firms with more-generalist CFOs have higher cash holdings than firms with less-generalist CFOs.

CFOs in UK firms are typically board members (Florackis and Sainani, 2018); thus, interactions with other board members can significantly affect the CFO's say on existing policies. Female presence on the board is associated with substantial enhancements in acquisition and merger deals and outcomes, and a moderated risk taking with future growth potentials with investment projects, specifically in the firms with overconfident CEOs (Banerjee, Humphery-Jenner and Nanda, 2018; Chen, Ho and Yeh, 2020). Board gender diversity also opens the door to inclusiveness. A diverse board

will affect the quality of its advice and the processes of its strategic decision-making (Hoogendoorn, Oosterbeek and Van Praag, 2013), overcome social barriers (Fang, Francis and Hasan, 2018), and encourage an environment of inclusive decision-making. Since a diverse board promotes creativity and openness, such a board is more likely to facilitate strategic changes and less likely to engage in group thinking (Gompers, Mukharlyamov and Xuan, 2016). Considering the gender differences observed in economic behaviours (Croson and Gneezy, 2009), and female's preference for rigorous monitoring roles (Adams and Ferreira, 2008) and higher risk aversion (Faccio, Marchica and Mura, 2016; Bernile, Bhagwat and Yonker, 2018) in firm governance, I expect that female presence moderate cash holding decision of generalist CFOs.

Furthermore, prior studies suggest that females' contribution to board depends on their functional role (Liu, Wei and Xie, 2014), whether they are executive or independent directors. Females in monitoring positions contribute to more robust controls and reduce liquidity to lower agency costs, and managerial opportunism (Harford, 1999). On top of that, prior studies show female independent directors tend to have motivation for strict monitoring due to potential indirect incentive as career advancement- the rationale is that effective board monitoring might signals leadership skills that enhance female directors' odds of being promoted to CEO (Upadhyay, 2023). Also, female directors in monitoring roles have a significant negative association with cash holding (Atif, Liu and Huang, 2019). The reasons Thus, I expect that independent female directors appointed for monitoring roles will actively reduce agency costs from free cash flow and, therefore, lessen cash holdings to limit the availability of cash for opportunistic managers (Liu, Wei and Xie, 2014). Following resource dependency theory and gender based social role theory, I posit the following hypothesis:

H2. Board with more independent non-executive (INED) female directors negatively moderate the relationship between generalist CFOs and firm cash holding.

3.3. Data and Method

3.3.1. Data

This study used a panel dataset of non-financial companies listed on the London Stock Exchange (LSE) from 1999 to 2019[9]. Following prior studies on CFOs (Florackis and Sainani, 2018; Schopohl, Urquhart and Zhang, 2021), non-financial firms were preferred as financial firms have different cash holdings restrictions. I used the BoardEx database to collect information on firm managers and directors. Since UK firms do not uniformly maintain the CFO title, I followed Florackis and Sainani (2018) to identify CFOs based on the data item "individual role" and focused on the following labels: "CFO, chief financial officer, finance director (FD), group finance director (GFD) and executive director (finance)". Other firm-level data were collected from Refinitiv Eikon. The final sample consisted of 1,608 unique firms and 2,948 unique CFOs.

3.3.2. Methodology

3.3.2.1. *Generalist CFO Measure*

To explore how generalist CFOs might affect firm cash holdings, I began the study by identifying the generalist CFOs. I defined "generalist CFO" as a continuous variable, using factor analysis (FA) with four diversity dimensions of CFO experience: (1) the number of organisation types, (2) the number of sectors, (3) the number of firms, and (4) number of roles in which the CFO had worked on a cumulative yearly basis. Information regarding the CFOs' experience was collected from their BoardEx employment profiles. The higher the first-factor score, the more variety in experience and the more generalist the CFO. FA helped us to combine the various experience information into a composite index. This first factor reduced the multicollinearity problem and measurement errors and enhanced the power of the regression tests.

[9] I started my sample in 1998 because BoardEx data coverage starts from this year; however, I could manage data for the generalist CFO Index from 1999. Thus, The study period is restricted to 1999-2019 due to data availability.

Regarding the experience information-selection criteria for the generalist CFOs, I am inspired by Custódio and Metzger (2014). The CFO index differed from that of Custódio and Metzger (2014) concerning the choice of managers (CFOs versus CEOs) and the variety in the managers' experiences. Moreover, I used the dynamic CFO index as a yearly continuous variable to represent whether the CFO was more or less generalist. In contrast, Custódio and Metzger (2014) identified a generalist CEO using a dummy variable, showing if the index score was greater than the median yearly score (or 0 otherwise). In addition, the generalist-CFO measure is unique in CFO literature as most studies have used CFO tenure (Sun and Rakhman, 2013) as a proxy for time-variant experience measures. Furthermore, previous studies have represented variety in the experience via the number of industries and firms (Li and Patel, 2019). In contrast, I captured the number of organisation types, sectors, firms, and roles in the composite index.

3.3.2.2. Model

To test H1, I employed Equation (1) as follows:

$$Cash_{it} = \alpha_0 + \beta_1 * Generalist\ CFO_{it} + \theta' X_{it} + FirmFE + YearFE + \varepsilon_{it} \qquad (1)$$

The dependent variable, Cashi,t is defined as a ratio of cash to total assets (Bates, Kahle and Stulz, 2009; Dittmar and Mahrt-Smith, 2007; Opler *et al.*, 1999). Cash is better proxy than cashflow for capturing managerial entrenchment as Jensen (1986) mentioned about the cumulative cash balance rather than the yearly free cash flow in similar case. Also, cash holdings are appropriate to measure to reflect slack resource arguments from the behavioural theory angle. As discussed above, my primary variable, Generalist CFO_{it}, is constructed using FA to combine the four aspects of CFO experience. X_{it} is a vector of the control variables from three categories: firm-level controls (Florackis and Sainani, 2018; Phan *et al.* 2019; Devos and Rahman, 2018; Bates, Kahle and Stulz, 2009; Deb, David and O'Brien, 2017; Dittmar and Mahrt-Smith, 2007; Opler *et al.*, 1999; Ozkan and Ozkan, 2004) such as Firm Size, Market to Book, Cash Flow, Cash Flow Volatility, Net Working Capital, Capital Expenditure, Research and Development RnD Dummy, Dividend Dummy, and Leverage. Governance

controls (Florackis and Sainani, 2018) are board size, board independence, institutional investors, and CEO-Chairman dummy. CFO controls (Schopohl, Urquhart and Zhang, 2021) include CFO Age and CFO Female.

Among firm-level variables, Firm Size is measured as the natural logarithm of the book value of total assets. The ratio of the market value of assets to the book value of assets is the Market to Book ratio. I calculate Cash Flow as the earnings ratio after interest, dividends, and taxes but before depreciation to the book value of assets. Net Working Capital is the difference between working capital and cash, all scaled by the book value of total assets. Research and Development R&D dummy is R&D expenses scaled by the total asset. Capital Expenditure is corporate capital expenditure scaled by total assets. Leverage is the ratio of the sum of long-term debt and debt in current liabilities to total assets. A dividend dummy indicates if firms pay dividends to common shareholders and 0 otherwise. I used the standard deviation of firm-level cash flow scaled by total assets for the past three years to calculate Cash Flow Volatility. All independent variables are at time t, indicating that they are in the same year as the dependent variable, as the model captures managerial behaviours regarding firm policy (Ataullah, Vivian and Xu, 2018). The model also includes firm and year fixed effects (FEs). Appendix A provides the detailed definitions of the variables.

Furthermore, I aim to understand the effect of generalist CFOs on firm cash holdings when moderated by board gender diversity. Literature suggests that observing female in board as a standalone factor rather than observing the variety of roles they are playing inside the board can be a problematic and defective way to understand females' impact (Nielsen and Huse, 2010). Furthermore, differentiating females' role inside board (i.e., executive versus non-executive independent), specifically roles related to firm governance (i.e., advise versus monitoring) support researcher to understand better on how females are contributing on managerial decision making for better firm performance (Cambrea, Tenuta and Vastola, 2019). Thus, I measure board gender diversity with the independent non-executive (INED) female representation. To measure gender diversity, I used the standardised measure of the "Blau Diversity Index" (Blau, 1977) in line with prior studies (Francisco Martín-Ugedo and Minguez-Vera, 2014).

To test H2 with female board representation in INED members, I employed Equation (2) as below:

$$Cash_{it} = \alpha_0 + \beta_1 * Generalist\ CFO_{it} + \beta_2 * Board\ INED\ Gender\ Diversity_{it} + \theta' X_{it} + FirmFE + YearFE + \varepsilon_{it} \quad (2)$$

For robustness, I also use two other proxies for measuring female representation on board: the total number of INED female members and the ratio of INED female members on board.

Table 3.1 presents the critical, descriptive statistics of the sample. All financial variables were winsorised at the 1st and 99th percentiles to minimise the potential effect of outliers and/or coding errors. The table reports the number of observations, the means, the standard deviations, the minimum, quarter 1, quarter 2 (the median), quarter 3, and the maximum of the variables used in this study. The average CFO has worked in more than one type of organization and more than one sector. On average, the CFOs had worked for more than three firms and in more than three roles. This variety in firms and roles mainly contributed to CFO generalist experience. The average CFO is 47 years old, and the average Female CFO dummy was 0.0781. The average of the natural logarithm of CFO age is 3.85, which is similar to the findings of Schopohl, Urquhart, and Zhang (2021); however, the average Female CFO dummy is 0.0538 in their paper. This difference in the average female CFO dummy is due to more appointments of female CFOs with time in the sample period (1999-2019) compared to them (1999-2017). The mean cash holding ratio is 13.77% (similar to the findings of Florackis and Sainani (2018)). The average total assets and average market capitalization reported in the sample is £1,173 million and £1,675 million respectively. Average market-to-book value ratio of 0.5041, and mean leverage ratio is 16.34%. The board-level data show that the average board in the sample comprises 6.8802 directors, well-proportioned between executive and independent non-executive directors (an average board-independence ratio of 52.79%). The values for the relevant variables are consistent with those of relevant CFO studies (Florackis and Sainani (2018), Ferris and Sainani (2020), and Schopohl, Urquhart, and Zhang (2021).

[Insert Table 3.1]

Table 3.2 (Panel A) presents the results of the factor analysis (FA) of the four experience dimensions of CFOs, which yielded one (first) factor with an eigenvalue of greater than one[10] This factor explains 95.11% of the total variance in the data sample and has an eigenvalue of 1.97. The factor loadings of each variables are also presented in Table 3.2. All four experience variables have positive association with computed first factor, the index to indicate generalist CFO as per the expectation. In Panel B (Table 3.2), I present the correlation matrix of the CFO experience variables and show moderate positive association among most of these variables. For instance, the moderately strong correlation between the number of sectors and the number of roles indicates that CFOs who have worked in different sectors are more likely to work in different roles. This correlation pattern justifies using FA to construct the CFO index, as FA simplifies and orders several interrelated variables into a one-dimensional factor.

[Insert Table 3.2]

A Pearson's pairwise correlation analysis for generalist CFO and control variables is reported in Table 3. All independent variables are significantly associated with the cash ratio, which justifies the selection of variables for the estimation. Finally, the coefficients of board gender diversity and board INED gender diversity with cash ratio are negative and significant. This finding primarily validates the expectation that female directors' roles imply a firm cash policy. The negative correlation between INED female directors and firm cash indicates the validity of considering board diversity as moderating factor on generalist CFO and firm cash. The correlation coefficients between the independent variables are not very high, which suggests that the models are free from multicollinearity.

[Insert Table 3.3]

[10] An eigenvalue greater than one is an indication of extracted factor value has more explanatory power than any other variables by itself which have been used to calculate the factor.

3.4. Empirical Results

This section investigates how generalist CFOs affected firm cash holdings policies. Generalist CFOs are my primary variable of interest, and I identify these using the first-factor score for CFO experience, then employ Equation (1) to investigate the baseline relationship. The dependent variable is the cash ratio, as a proxy for the firm cash holding level. Furthermore, I explore how generalist CFOs affected cash levels in firms with gender-diverse boards, using Equations (2). I retain standard errors clustered at the firm level in each model to account for within-firm correlations. Furthermore, I use industry and year FEs for all baseline models.

3.4.1. Generalist CFOs and Firm Cash Policies – Baseline Results

Table 4 presents the regression results for the relationship between generalist CFOs and firm cash holdings and the moderation role by board gender diversity. Model 1 shows the regression outcome from Equation 1 following the UET and agency theory. Following resource dependency theory and asocial roles theory, Model 2 to Model 4 shows interaction terms between generalist CFOs and female board representations with three different measures of female representation, the total number of INED female directors, the ratio of INED female directors and Board INED gender diversity, respectively. Table 4 presents the results.

[Insert Table 3.4]

Table 3.4 Model 1, as proposed in H1, supports the positive association between generalist CFOs and firm cash. The results suggest that firms with more-generalist CFOs (i.e., high values on the CFO index) hold more cash, ceteris paribus. This result supports H1b. Custódio *et al.* (2019) argue that generalists take more risks, and Chen, Ho, and Yeh (2022) argue that overconfident CEOs who are risk takers keep more cash to finance their risky investments as they perceive external financing internally is too costly. As cash holdings are perceived to be more risk-averse than investments (Caliskan and Doukas, 2015; Bernile, Bhagwat and Yonker, 2018), the findings show that generalist CFOs are acting like overconfident managers by holdings more cash for their

requirements of internal funds for future investment. I confirm this hypothesis by analysing the value of cash held by generalist CFOs. The value of cash held by generalist CFOs is higher than that of their counterparts, as generalist CFOs have a high potential to use the excess cash in new investments. Interestingly, none of the CFO-level control variables were significant, and the impact of the CFO on the cash holdings was due only to the diversity of experience. In addition, the governance controls were found to be insignificant in this model.

Regarding firm-level controls, as expected from the literature, I find a significant negative relationship between firm size and firm cash holdings. Larger companies tend to keep less cash (Miller and Orr, 1966) due to better access to the external financial market, economics of scale in cash management, and less information asymmetry. As expected, the Market to Book ratio significantly positively relates to firm cash holdings. Market to book value of asset is a proxy for the growth opportunity of the firm. The higher the growth rate, the higher the cost the firm face when they want to raise external capital (Myers and Majluf 1984); thus, a firm with growth opportunity tends to keep more cash due to precautionary motive. As expected, Cash flow has a negative association with cash holdings; high cash flows firms are capable to maintain low cash level as they can channel their cashflows to payoff future obligations and have ample opportunities for external financing if required (Kim, Mauer and Sherman, 1998; Adams, Almeida and Ferreira, 2005). As expected, Cash Flow Volatility and cash holdings have a positive association in the models. Firms with volatile cashflow are expected to keep more cash to avoid forgoing any valuable investment opportunities (Ozkan and Ozkan 2004). I find a positive association between Net Working Capital and cash, even though literature suggests that net working capital can substitute for cash due to its convertibility into cash within the short period (Bates, Kahle, and Stulz 2009).

In the analyses, I find that Dividend Dummy and cash have a negative association as dividend-payer firms are unwilling to reduce their dividend and thus may keep more cash to reduce dividend omission risk (Ozkan and Ozkan 2004). On the contrary, dividend-paying firms ensure better access to the capital market and reduce their cash demand for precautionary motives (Bates, Kahle, and Stulz 2009). The model has a

negative association between Leverage and firm cash. Usually, cash holding cost increases with leverage increase so that leverage may impact cash negatively (Baskin, 1987; Bates, Kahle and Stulz, 2009); however, financially constraint firms start accumulating cash for paying off debt which may result in a positive association between leverage and cash holdings (Almeida, Campello and Weisbach, 2004).

3.4.2. Generalist CFOs and Firm Cash Policies – Moderating Role of Board Gender Diversity

In Table 3.4 Model 2 to Model 4, I investigated whether board gender diversity moderates the cash-holding decisions made by generalist CFOs[11]. These attempts help to identify whether females on board behave differently due to their roles (monitoring versus management) inside the board. Table 4 shows the corresponding results of board INED gender diversity following H2. For H2, I expected that a gender-diverse board with respect to independent non-executive (INED) female directors would significantly monitor the positive association between generalist CFOs and cash-holding decisions as female INEDs bring different expertise, network and perception to the boards. For robustness, I also use the number of female directors and the percentage of female representation for INED female directors. The interaction term coefficients are significantly negative in all three models, and the coefficients of the variable of interest, Generalist CFO, is slightly higher than those of Model 1. These results also suggest that gender diverse boards give more consideration to proposal presented by generalist CFOs by accepting strategic changes and avoiding group thinking over sticking to certain policies (Gompers, Mukharlyamov and Xuan, 2016). It appears that gender-diverse boards tend to strike a balance between monitoring and nurturing generalist CFOs with respect to the firm's cash policy. In addition, similar to the baseline, in the interaction models, the coefficients for firm-level control variables are consistent and similar with the findings of prior studies.

[11] I also run general interaction terms with female representation in the board, but my results are significant with the measurements using female INED members only.

Based on the results of the baseline analyses, I found that generalist CFOs significantly increase firm cash holdings across all the regression specifications. The sample's average cash holding ratio was 13.76%, indicating that generalist CFOs had an economically significant effect, keeping more cash by an average of more than 2.26% that is ((0.0035*0.8886) / 0.1376) compared to other CFOs. These results suggest that the CFO effect on cash differs from the possible direct effects of board gender diversity on cash holding choices. Furthermore, none of the other CFO characteristics has a statistically significant link to firm cash holdings. The evidence in Table 3.4 suggests a strong positive association between generalist CFOs and the level of firm cash holdings and moderation by the female presence on the board of directors.

3.4.3. CFO attributes

The results so far show that generalist CFO and firm cash have a positive association. The baseline models have two CFO level control variables, CFO Age and Female CFO; none significantly impact the firm cash level. As generalist CFO is a quantitative experience-based measure of CFO impact, other qualitative potential CFO attributes in experience might have unique settings for CFO's impact on cash policy. Thus I have a sub-sample based on two CFO attributes, (1) CFO appointment pathway, a dummy variable indicates one if the CFO is recruited internally or zero otherwise, and (2) CFO foreign exposure dummy, a dummy variable indicates one if the CFO has foreign nationality, or forging university degree or foreign career experience or zero otherwise. Table 3.5 presents the analysis results.

[Insert Table 3.5]

Panel A and Panel B in Table 3.5 reflect the subsample analyses based on the CFO appointment pathway and CFO foreign exposure dummy, respectively. The results in Panel A show that generalist CFOs have a positive association with cash only in the firms where CFOs recruited externally. Externally recruited CFOs have a higher opportunity to experience diverse positions and become generalists rather than internally recruited CFOs who have become specialized in current firms with longer time in firms. Finally, Panel B shows that generalist CFOs have a positive association

with cash only in the firms where CFOs are national. CFOs with foreign experience have extended dimensions of experience; however, familiarity with local business culture is essential to building a generalist mindset to ensure career mobility that sets generalists prone to take risks. Furthermore, with respect to monitoring by female board representation, the interaction terms between generalist CFOs and gender diversity are negative and significant only in cases where generalist CFOs are significantly keeping more cash in firms.

3.4.4. CEO Power and Delegation

The findings from empirical analysis so far suggest that generalist CFOs have significant positive influence on firm cash holdings. CFOs have fiduciary duties to the firm owners and the board, however, CFOs are also responsible to their CEOs (Mian, 2001; Friedman, 2014). Following Friedman (2014), I expand my analysis by incorporating the CEO's power/status to influence CFOs to do so. A potential concern is that there might be some firms in the sample where the CEO is in the central power of decision-making (Adams, Almeida and Ferreira, 2005) and affect liquidity decisions. In those cases, the CEO's delegation of control over decision-making depends on (1) firm characteristics and the CEO's expertise on the given policy design (Graham, Harvey and Puri, 2015) as well as (2) CEO-CFO Co-option on basis of the principles of reciprocity, that is, if the CEO recruits CFO, CFO might incline to CEO's preference as a sign of indebted to the CEO in context of social exchange (Westphal and Zajac, 1997; and Ma and Khanna, 2016). Following managerial discretion theory and social exchange theory, I attempt to check whether generalist CFOs have moderate flexibility to generously decide on firm cash policy while considering the presence of CEO power/dominance.

In this segment, I run subsample analyses to understand the conditions when CEO's influence constrains the CFO's cash decision. Based on the CEO dominance hypothesis, I assume that the positive relationship between generalist CFOs and firm cash will be less strong if the CEO dominates or cooperate less to authorise the liquidity management decision-making power to their CFOs. I split accordingly the data sample

into subsamples based on CEO power and CEO delegation in Table 3.6 Panel A and Panel B, respectively.

[Insert Table 3.6]

In Panel A Table 3.6, I use CEO-CFO Co-option to understand the relative power of the CEO. CEO-CFO Co-option is a dummy variable that directs whether the CEO was in the firm before the CFO was recruited. I expect that CEO is dominant when the CEO recruits CFO according to social exchange theory. Additionally, in Table 3.6 Panel B, I split subsamples of firms with CEO delegation with respect to expertise and knowledge, a dummy variable that indicates whether CEO has accounting expertise or not. I expect the CEO to delegate more to CFOs when the CEO has less expertise and knowledge. As per the expectations, the coefficient on generalist CFO is significantly positive for the sub-groups of firms where the CEO delegates policies to the CFO. These results can not reject the CEO dominance hypothesis for both the cases of CEO-CFO Co-option and delegation on basis of CEO-expertise; these findings suggest that positive association between the generalist CFO and firm cash holdings that I document in this study is the affected by the presence of the powerful CEO.

3.4.5. Generalist CFOs and Firm Cash Policies – Channel Analysis

The results show that generalist CFOs keep more cash than their counterparts. I attribute these outcomes to generalists being more likely to take risks and engage in new investments. In other words, generalist CFOs keep more cash in order to engage the firm's internal less costly less monitored funds in more risky projects, e.g., research and development (R&D) intensities and/or overinvestment.

Adequate cash is one of the key determinants of R&D novelty. Inadequacy in firm cash is often related to the inadequacy of new projects, especially research and development ones (Cuervo-Cazurra and Annique, 2010). Furthermore, firms in R&D intense industry are bound to focus on novelty in creation; R&D-driven invention is very challenging to be financed with external funds due to its success uncertainty, intangibility, and potential misperception as of information insufficiency (Myers and Majluf, 1984). Thus, R&D is predominantly funded by internally generated and accumulated cash and

seasoned public offering (Brown *et al.*, 2009). Furthermore, firms with R&D intensity are highly likely to rely on cash holdings for precautionary reasons to smooth their R&D expenditure (Brown and Petersen, 2011) and avoid premium payment with external capital collection (Levitas and Mcfadyen, 2009). On top of that, industries with high R&D intensity in general experience fast pace of technological shift and high uncertainty in business demand that motive firms to employ cash as a safe strategic technique (Lyandres and Palazzo, 2016) and keep more cash for survival in competition pressure. However, transparency of R&D is usually low to general shareholders; thus, managers have more scope for entrenchment with such fund. Also, R&D investments are risky in short term and generate substantial profit only in long run which needs to be supported by long-term shareholders with internal fund.

I expect the effect of risk-taking attitude of generalist CFOs to be substantial when firms are featured as innovative industries. Therefore, I split the sample to test the effect of generalist CFOs on cash level for firms in innovative and other industries. I define an industry as innovative one when the average R&D intensity for the industry is higher than the median across all industries in a given year. I measure R&D intensity as ratio of R&D expenditure to total sales of the firm. If high R&D group may utilize their cash efficiently for rapid adaptation and uninterrupted source of innovation financing, cash holding will turn out to be beneficial (Levitas and Mcfadyen, 2009), in that case, I expect that generalist CFOs will hold more cash in high R&D firms and will be less scrutinized by female directors in such cases. In other words, firms with generalist CFOs will have more cash in high R&D intense firms, and female directors will possibly be more actively monitor the CFOs to regulate managerial entrenchment in the name of cash holding for R&D, if any.

In order to check whether generalist CFOs keep more cash and whether to invest more in new projects with internal funding, like overconfident managers, I compare the analyses between subsamples of firms based on their expenditure on research and development. I calculate R&D intensity as R&D expenses dividend by total sales of the firms. Zeros replace missing R&D values, and the upper limit for R&D intensity is capped at 1 (Kim and Bettis, 2014; Deb, David and O'Brien, 2017). I measured yearly industry median R&D intensity and created groups based on whether the respective

firm's corresponding data fell below or above the median. If the value is below (above), I grouped it as a Low (High) R&D intensity group. For brevity, Table 7 shows only the relevant results.

[Insert Table 3.7]

As expected, Panel A in Table 3.7 shows that generalist CFOs have significant positive effects on the firms with high R&D intensity, as these firms are likely to invest more in new risky projects than their counterparts. My findings indicate that challenging and risky investments in R&D-intensive industries are the keys to making firms with generalist CFOs keep more cash than others. All other control variables are consistent and similar to the baseline model outcomes. Finally, as at the baseline, board gender diversity is the significant positive moderator of generalist CFOs and firm cash policies only in firms with low R&D. This results signifies the importance of monitoring role of female directors; they are actively constricting cash holding in firms with low R&D profiles to avoid agency issues from free cash flow, whereas they are inactive low R&D firms.

Furthermore, like risk taker overconfident managers, generalist CFOs might keep cash to engage the firm's internal less costly less monitor funds in overinvestment. To test this hypothesis, I subsampled the firms based on overinvestment. Following previous studies (Richardson, 2006; Guariglia and Yang, 2016; Moin, Guney and El Kalak, 2020), I identified firm yearly observations of overinvestment if the residual of Equation (3) below was positive.

$$New\ Investment_{it} = \alpha_0 + \beta_1 * New\ Investment_{it} + \theta' X_{it} + FirmFE + YearFE + \varepsilon_{it} \quad (3)$$

Where $New\ Investment$ = (capital expenditure + research and development – depreciation and amortisation). The control variables set ϑit included growth opportunities, cash, free cashflow, firm age, firm size, leverage, and stock returns. The use of panel data estimation in the Equation allowed for a partial adjustment mechanism to control for unobserved factors not included among the regressors, where the residual εit was used as a proxy for the firm i's deviation investment (excess investment) in year t. I defined overinvestment as a dummy variable equal to one when

the residual was positive, indicating that the firm had overinvested in that particular year and zero otherwise. Table 3.7 Panel B presents the subsample analyses.

Panel B in Table 3.7 shows that generalist CFOs hold significantly more cash in the firm with overinvestment while having an insignificant effect on cash in firms with underinvestment. These results indicate that generalist CFOs channel internal funds into investment. This excludes the possibility of generalist CFOs saving significantly cash funds for precautionary motives (Bates *et al.*, 2009; Keynes, 1937; Opler *et al.*, 1999). With respect to board monitoring by female representation, the interaction term of gender diversity and generalist CFOs was negative and significant only in firms with overinvestment where generalist CFOs are significantly keeping more cash. Among the firm-level controls, all significant variables had the expected results and significance similar to the results in baseline regression.

3.4.6. Endogeneity Concerns

Equations (1) and (2) may suffer from potential endogeneity, as the above mentioned estimations assume that the generalist CFO is exogenous determinants of firm cash level. However, the selection of the CFO can be endogenous, depending on the firm's recruitment preferences and the interest of such candidates in joining the firm. An ideal experiment requires the random positioning of firms into the treatment and the control groups, which was not possible in this study context. Thus, I applied the instrumental variables (IV) approach, Heckman two-stage least square method, and propensity score matching techniques to address this question and provide strong indicative evidence that the identified association between generalist CFOs and firm cash holdings was causal in nature.

3.4.6.1. *The Instrumental Variable (IV) Approach*

For the instrumental variable (IV) approach, I seek for instruments that satisfy the criteria of relevance (i.e., correlated with the generalist CFO first factor index value, measurement of generalist CFOs) and exclusion (i.e., no direct effect on the firm cash decisions, except through the generalist CFO), from both theoretical and econometric

perspectives, as recommended by Larcker and Rusticus (2010). I used two instrumental variables to measure the scope of opportunities for generalist CFOs' diverse capacity-building through direct and indirect learning. First, I used the dummy variable business top rank to capture whether CFOs had graduate and/or post-graduate business school degrees from top-ranked universities (defined as Ivy League, Russell Group, or Top-25 institutions; (Datta and Iskandar-Datta, 2014), using the world university rankings from the 2018 Times Higher Education (THE). I expected that CFOs from top universities with business degrees would have more opportunities for versatile learning and, thus, more diverse careers. Second, I used network size (i.e., the natural logarithm of the number of networks the CFOs participated in with other directors, as reported in the BoardEx database). CFOs are expected to realise positive spill-over/"externalities" from expert and diversified professional networks (Dichev *et al.*, 2015). Furthermore, informal conversations within a network can facilitate work-specific human capital by transferring and exchanging knowledge from one professional experts to another (Carpenter, Geletkancz and Sanders, 2004; Inkpen and Tsang, 2005). Thus, I expected that the more connections a CFO had, the more diversified their knowledge and contributions to their firm would be. All instruments theoretically satisfied the primary requirements (relevance and exclusion). I could not detect any justifications other than the CFOs for a relationship between firm cash and the top-ranking university dummy and/or network size. The results are reported in Table 3.8.

[Insert Table 3.8]

Generalist CFOs were instrumented using the dummy variable business top rank and CFO network size in the first stage, Model 1 of Table 3.8. A significant positive relationship between generalist CFOs and the instruments, as well as the endogeneity test results, indicate the validity of the instruments in the IV model. As expected, in the second stage, Model 2 and Model 3 of Table 3.8, I found that instrumented generalist CFOs were significantly negatively associated with firm cash holdings. I presented the Cragg-Donald Wald F statistics for a weak instrument test at the end of the second stage regression; the F-test value is above the critical/cut-off value which indicates to reject the null hypothesis of weak instrument; thus the instruments are not statistically weak (critical value criteria is proposed by Stock *et al.*, 2001).

Furthermore, I reported the under-identification test (Anderson canon. correlation LM statistic) and rejected this null hypothesis. The relationships between firm cash and the other explanatory variables are consistent and similar to that of the baseline model reported in Table 3.4. Thus, the positive association between generalist CFOs and firms' cash holdings is unlikely to be driven by endogeneity concerns.

3.4.6.2.Sample Section Bias

I apply Heckman two-stage least square method to mitigate self-selection bias in hiring generalist CFOs. In the first stage, I run a probit model to estimate the likelihood of a firm recruiting a more generalist CFO (a dummy vatable indicating one if the generalist CFO score obtained from the first factor of four experience dimensions is above the median industry yearly generalist score and 0 otherwise), for firms using Firm Size, Market to Book, Cash Flow, Cash Flow Volatility, Net Working Capital, Capital Expenditure, Research and Development RnD Dummy, Dividend Dummy, and Leverage as predictors for selection model. Further, I use the natural logarithm of the number of roles per industry per year as an exogenous variable in the selection model. I include the Inverse Mills ratio (IMR) in the second stage estimation for controlling self-selection where estimate the baseline models in Table 4 previously. Table 3.9 presents the regression outcomes.

[Insert Table 3.9]

Table 3.9 reports the findings from first-stage probit (Selection Model 1) and second-stage models (Models 2 and 3), which employ the control variables as of in the baseline specification. The exogenous variable is the natural logarithm of the number of roles per industry per year; this variable turns out to be significant, and the Inverse Mills Ratios are also significant in the models. The second stage estimation results are similar to the baseline models and pronounced the findings that generalist CFOs keep more cash than their counterparts. Female board representations have a curving effect on such cash-piling decisions by generalist CFOs. Most control variables are significant,

indicating that results are unlikely to be determined by the probable self-selection bias in CFO hire.

3.4.6.3. *Propensity Score Matching (PSM)*

I use a PSM procedure proposed by Rosenbaum and Rubin, (1983) to address the endogenous CFO-firm matching issue. PSM method facilitates comparison between two similar firms regarding firm features with respect to firm cash holdings, except one group with more generalist CFOs and the other with less generalist CFOs. This process helps to isolate the generalist CFO effect on firm policy. I implement the process in two steps; first, I employ a logit model (logistic regression) to estimate the propensity of the firm having a more generalist (generalist CFO score is more than the yearly median score) with firm-level control variables used in baseline models in Table 3.4. Next, I utilize the estimated propensity scores for matching a firm with more generalist CFO with a similar firm having a less generalist CFO. I use the nearest-neighbour matching technique without replacement for pairing firms (recommended by Leuven and Sianesi, 2018). Table 3.10 presents the outcomes.

[Insert Table 10]

In Panel A of Table 10, I present covariate balance test results, which assess whether the average values of covariates mean differences in firm characteristics between treatment (firms with more generalist CFO) and control firms (firms with less generalist CFO) are statistically insignificant in most cases. This provides evidence on the two groups of firms, treatment and control, are similar on firm-level properties considered in the study. I then state and compare the cash level for the both subgroups, treatment and control firms, in Table 3.10. The results show that the average cash ratio in treatment firms are 14.4% as compared to 13.7% in similar control firms. The mean difference in cash ratio is statistically significant at the 5% level. This mean difference result is consistent with univariate comparison results suggesting that more generalist CFO firms hold more cash than less generalist CFO firms. Finally, I run the models corresponding to Equations (1) and (2) regarding only matched firms through

propensity score matching. The results show a negative association between generalist CFOs and firm cash holdings; all control variables show similar outcomes to those in baseline models. These results mitigate the possible concerns that my results of a positive relation between generalist CFOs and firm cash holdings is due to sample selection bias.

3.4.7. Additional tests – Analysis of Traditional[12] Cash Holding Motives

Prior literature shows precautionary motive (Bates, Kahle and Stulz, 2009) for cash holding is more intense for constrained firms (Han and Qiu, 2007). Prior study presents that CFOs manage cash mainly on firm precautionary needs (Lins *et al.*, 2010). Following this, if generalist CFOs keep more cash to maintain their higher precautionary needs, this cash retaining practice should be significant only for constrained firms. Furthermore, female directors are expected to moderate such cash hoarding if necessary. Thus, I re-estimate the baseline with female directors' interactions on sub-samples of firms with financial constraints and unconstrained firms. I measure financial constraints using the KZ[13] index (Kaplan and Zingales, 1997). I present the analytical definitions for variables in KZ index in the Appendix A. I assign firms to the financially constrained (unconstrained) group if their KZ index value lies in the yearly sample firms' top 20th value (bottom 80th value). Panel A of Table 3.11 presents the results.

[Insert Table 3.11]

[12] I also have subsampled firms based on transaction demand for cash in firms measured with Tobin's q; however, a positive association between generalist CFOs and firm cash is significant irrespective of the sub-sample.

[13] The KZ Index value for each firm-year observation is calculated as.

$$KZ_{it} = -1.002 * (CashFlow_t/Property\ Plant\ and\ Equipemnt_{t-1}) + 0.283 * Tobin'sQ_t + 3.139 * (Total\ Debt_t/ Total\ Capital_t) - 39.368 * (Dividend\ Paid_t/Property\ Plant\ and\ Equipemnt_{t-1}) - 1.315 * (Cash\ holdings_t/ Property\ Plant\ and\ Equipemnt_{t-1}) \quad (4)$$

In Panel A of Table 3.11, I present that under all unconstrained conditions, the coefficient of generalist CFO is positive, consistent and statistically significant at conventional levels for all the cases of financially unconstrained firms. On the contrary, the coefficient of generalist CFO is insignificant in all cases of constrained firms. These results imply that generalist CFOs in firms with better finance access (unconstrained firms) keep more cash. The chi-square test is also significant, which dismiss any concerns about the findings being driven by non-random matching between generalist CFOs and financially constrained firms. Furthermore, board INED gender diversity interaction with generalist CFO is negative and significant in financially unconstrained firms, which indicates that only INED female directors on board are curving cash holding by generalist CFOs in the financially unconstrained firm due to monitoring urge on excess cash hoarding.

Another plausible traditional motive for cash holding by managers is agency issues. Furthermore, financially unconstrained firms generally suffer from higher agency costs and higher monitoring needs, whereas constrained firms face lower agency cash costs (Hart, 1995). Thus, I provide a subsample analysis with agency costs measured with asset turnover ratio Firms with the above (below) median asset turnover ratio are classified as low (high) agency-cost firms (Singh and Davidson, 2003). Panel B of Table 3.11 presents the results.

The results in Table 3.11 Panel B show that the sub-sample of lower agency cost drives the positive association between generalist CFO and firm cash. This finding supports the view that generalist CFOs do not take advantage of agency issues inside the firm. Furthermore, only board INED gender diversity interaction with generalist CFO is negative and significant in firms with lower agency costs. This indicates that only INED female directors on board are curving cash holding by generalist CFOs to fulfil the monitoring role.

3.4.8. Other Robustness Checks

I run two robustness checks, (1) regressions with each of the four dimensions of CFO experience utilized in constructing the Generalist CFO Index and (2) alternative

definition of cash ratio. I constructed generalist CFO as the first factor from factor analysis of four experience dimensions of CFOs: number of organization types, number of sectors, number of firms, and number of roles. Thus, I run regression on firm cash with individual experience dimension to understand which contribute more towards a positive association between generalist CFO and firm cash. Table 3.12 Panel A presents the results.

[Insert Table 3.12]

Table 3.12 Panel A shows that sector and roles have a significantly positive association with firm cash level among the four dimensions of CFO experience. Table 3.12 Panel B shows the regression results estimated in the Table 3.4 baseline models with an alternative definition of cash ratio as the ratio of cash and marketable securities to the total asset of firms. The results in the baseline for generalist CFOs and firm cash policy also holds in this check; however, only the number of female INED interaction is significant and negative in the revised case.

3.4.9. Generalist CFOs and Value of Firm Cash

My results imply that firms with generalist CFOs hold more cash to finance more investment with internally generated less monitored cash inside the firm. This section attempts to understand the marginal value of cash in firms with generalist CFOs. If these firms patronize more investments with internal fund, shareholders might set a higher marginal value on firm cash. I follow (Faulkender and Wang, 2006) to measure the marginal value of cash holdings in firm with more generalist CFOs. This dummy variable indicates if the first-factor score for generalist CFO is higher than the yearly industry median of the such score and 0 otherwise. I include this generalist CFO dummy as an interaction in the model. The model is

$$r_{it} - Rb_{it} = \alpha_0 + \beta_1 * \frac{\Delta Cash}{MV} \quad \beta_2 * \frac{\Delta Earnings}{MV} + \beta_3 * \frac{\Delta Net\ Assets}{MV} + \beta_4 * \quad (5)$$

$$\frac{\Delta \text{Rand}D}{MV} + \beta_5 * \frac{\Delta Interets\ Expense}{MV} + \beta_6 * \frac{\Delta Dividend}{MV} + \beta_7 * \frac{Cash}{MV} + \beta_8 * Leverage +$$

$$\beta_9 * \frac{New\ Financaing}{MV} + \beta_{10} * \frac{Cash}{MV} * \frac{\Delta Cash}{MV} + \beta_{11} * Leverage * \frac{\Delta Cash}{MV} + \beta_{12} *$$

$$Generalist\ CFO + \beta_{13} * Generalist\ CFO * \frac{\Delta Cash}{MV} + \varepsilon_{it}$$

Where ΔXit signifies the change in the variable X of the firm I from year t-1 to t, all explanatory variables except for generalist CFO $_{it-1}$ and leverage are scaled by the lagged market value of equity, MV_{t-1}. Definitions of variables are given in Appendix. The dependent variable is the excess stock return, r_{it} -R_{it}B, where r is the stock return, R is the stock ith benchmark return over the same period. The benchmark portfolio is one of the 25 Fama–French portfolios based on size and book-to-market. The variable of interest is the interaction between generalist CFO dummy and ΔCash, where generalist CFO is a dummy variable with a value of 1 if the generalist CFO factor value is greater than the median value across all firms in the given year and zero otherwise. ΔCash is the change in cash holdings. The coefficient of the interaction signifies the difference in the marginal value of one pound of cash held by firms with either more and less generalist CFO. Table 3.13 presents the analysis result.

[Insert Table 3.13]

My results show that the coefficient on the interaction term is positive and statistically significant at a 1% significance level. The finding indicate that the market spots a higher value on an extra pound kept by generalist CFOs, expecting more investment and firm value in the future.

3.5. Conclusions

The trend of corporate cash hoarding has received considerable attention in academia and professional body due to the liquidity and "root of evil" nature of cash stock. Could managerial attributes explain more? How do the boards react to such managerial decisions? Generalist managerial experience in firm policy has been widely researched in recent years. Generalist managers are expected to be risk-taking and affect firm

strategy beyond the current structure inside the firms. However, the extant literature is concentrated on CEOs, with little investigation of the second-most influential executive, the CFO. This study contributes to the literature by analysing the impact of generalist CFOs on firm cash-holding policies. Furthermore, I investigate the influence of CFOs as team members on gender-diverse boards that develop and monitor the CFOs' decision-making environment. To identify generalist CFOs, I construct an index based on four experience dimensions of CFOs such as the number of organization types, number of sectors, number of firms, and number of roles CFOs have played in their career yearly; the higher the index value, the more generalist the CFO tends to be.

In an examination of a dataset of UK-listed firms, I found that firms with more-generalist CFOs keep more cash than firms with less-generalist CFOs. This positive effect persists, even after controlling for board gender diversity, which tends to provide stringent monitoring over firm managers to avoid opportunistic behaviours. Notably, the positive effect documented in the study is significant where CEO is less prominent with respect to power and knowledgeability. Finally, I offer plausible explanations for such association. Generalist CFOs are risk-takers and tend to invest more in new projects with less costly internal funds, so they keep more cash for their investment need than their counterpart.

Furthermore, I study the monitoring effect of female representation with independent non-executive (INED) directors; my results are significant and robust with INED female directors who effectively control the cash-keeping behaviour of generalist CFOs. Also, I do not find any direct impact of female board representation and firm cash; this finding implies female directors are not excessive conservative or optimistic regarding firm cash level; instead, they contribute to good governance with efficient monitoring. In additional subsample analyses, I found evidence that generalist CFOs keep more cash in R&D intense firms, suggesting that they set aside the funds for new projects with internal funds. Finally, my results suggest that the traditional transaction motive for firm cash holdings does not drive the positive relationship between generalist CFOs and firm cash levels.

The results have significant implications for boards tasked with recruiting and compensating top-executive teams. What attributes make a good CFO for firms is a dynamic query as CFO corresponds to the complex finance functions inside firms within a dynamic business environment. This study presents the case that generalist CFOs can shape key corporate policies in an enclosed environment; this finding has crucial implications on corporate governance from policymakers perspective. The findings may lead the way towards in future thoughts and debates on dynamic CFO roles and how these should be facilitated by effective internal functions of boards. The findings also have significant economic implications for appointment guidelines on CFOs with respect to firm life cycle. For example, firms in a growth stage may benefit from employing generalist CFOs, while mature firms may not. Furthermore, when designing compensation packages, the board should consider risk-averse options (e.g., inside debt) for generalist CFOs to avoid the negative consequences of their excessive risk-taking.

Another critical policy implication is that my findings evident CEO-CFO reciprocity as CFO is significantly influencing liquidity management while CFO join the firm earlier than the CEO (that is, CFO's tenure is higher than the respective firm's CEO's tenure). CEO-Board reciprocity studies are quite common in corporate governance literature, this study is first to highlight such indirect pressure on CFO while being recruited by the CEO to perform the principles of reciprocity.

Finally, this study evident strong monitoring by female representation on board which has been proposed in recent policy reforms by the UK Financial Reporting Council (UK FRC), the UK Government, and the UK Financial Conduct Authority (UK FCA). Within the existing corporate governance framework in the UK firm, a gender-diverse board would be an effective way to maintain the sensible liquidity policy of the firms. The findings also support recent regulatory urge (Hampton-Alexander Review FTSE Women Leaders Improving Gender Balance in FTSE Leadership, 2018) for firms to increase female participation on corporate boards. Finally, my findings are strong evidence for shareholders and other corporate stakeholders on how gender-diverse boards can mitigate managers' excessive risk-taking behaviour, which may guide the stakeholders in future investment decisions.

The study has a few limitations that provide future research directions. I admit that the sample is limited to the UK listed firms only; therefore results might not be generalized due to differences in institutional settings, regulation status, and local cultural practice. Future studies can analyse and compare multiple countries. Furthermore, future studies may focus on the education or expertise of individual female directors on board as they are consistently observed to be the significant maintainer of board-level scrutiny with respect to firm cash policy.

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Appendix A: Variables Definition

Variable	Definition
CFO Characteristics	
CFO Organization Type	Total type of organization CFO has been worked on at the end of year t. There are 10 types of organizations are listed in BoardEx.
CFO Sector	Total type of sector CFO has been worked on at the end of year t. There are 51 sectors are listed in BoardEx.
CFO Firms	Total number of distinct firms CFO has been worked on at the end of year t.
CFO Roles	Total number of distinct roles CFO has been worked on at the end of year t.
CFO Index	First factor from a factor analysis based on the following variables: CFO Organization type, CFO Sector, CFO Firms and CFO Roles.
Generalist CFO	Continuous variable based on the score of CFO Index.
CFO Age	Natural logarithm of CFO age at the end of year t.
CFO Female	Dummy variable coded 1 if the CFO is female and 0 otherwise.
CFO Network	Natural logarithm of director network size at the end of year t.
Internal CFO	Dummy variable coded 1 if the CFO is internally recruited (Time in the current firm is higher than time in CFO role) and 0 otherwise.
Local CFO/Foreign CFO	Dummy variable coded local if CFO is UK nationality and coded foreign if CFO is either non-UK, or/and have forging graduate degrees, and /or foreign career experience.
Top Rank	Dummy variable indicating 1 whether CFO have graduation from Top universities based on either Ivy League, or Russel Group or Top 25 Universities list provided by the Times Higher Education (THE) in 2018.
CEO Characteristics	
CEO Chair Dummy	Dummy variable coded 1 if the CEO is also the Chair of Board and 0 otherwise.
CEO-CFO Co-option	Dummy variable coded 1 if the CEO has longer tenure than that of CFO and 0 otherwise.
CEO Accounting Expert	Dummy variable coded 1 if the CEO has prior experience in accounting position and/or in the Big 4 audit firms and 0 otherwise.
Board Characteristics	
Board Size	Natural logarithm of total number of directors in board.
Board Independence	Ratio of number of non-executive directors to the total number of directors.
INED Female Number	Total number of independent non executive (INED) female directors in the board.
INED Female Ratio	Ratio of total number of independent non-executive female directors to the total number of directors in the board.
INED Female BLAU	The standardized measure Blau diversity index, BLAU at the end of the fiscal year t as: BLAU=1− $\sum_{i=1}^{n}$ Pi^2, where P_i refers to the percentage of INED female board members. The values fluctuate between 0 and 0.5, at which there is the same percentage of male and female board members and thus the diversity is maximized (Blau, 1977).

Firm characteristics	
Cash	Ratio of cash holdings to total asset of firm.
Cash2	Ratio of cash holdings and short term investment to total assets of firm.
Institutional Ownership (%)	The percentage of share holdings of 5% or more held as long-term strategic holdings by investment banks or institutions seeking a long-term return.
Firm Size	Natural logarithm of book value of total assets.
Firm Age	Natural logarithm of number of years since a firm has been listed in the exchange at the end of year t.
Mkt to Book	Ratio of the book value of assets minus the book value of equity plus the market value of equity to the book value of assets.
Cashflow Cashflow Volatility	Ratio of earnings after interest, common dividends, and taxes but before depreciation divided by total assets. The rolling standard deviation for the firms' cash flows for the past 3 years.
Net Working Capital	Ratio of net current asset to total asset.
Capital Expenditure	Ratio of net capital expenditure to total asset.
R&D Dummy	Dummy variable coded 1 if firm has R&D expenditure and 0 otherwise.
Dividend Dummy	Dummy variable coded 1 if firm has provided cash dividend to shareholders and 0 otherwise.
Leverage	Ratio of long term debt plus short term debt to total assets.
R&D Intense Firm	Firms with R&D ratio ranging above 80th percentile of the sample. R&D Ratio is calculated as R&D expenditure to total asset.
Overinvestment	Dummy variable coded 1 if the residual of following equation is positive or 0 otherwise if the residual of the following equation is positive. $New\ Investment_{i,t} = \alpha + \beta_1\ New\ Investment_{i,t-1} + \beta_2\ Other\ Controls_{i,t-1} + \eta_i + \phi_t + \varepsilon i,t$ where *New Investment* = (Capital Expenditure + Research and Development (R&D) – Depreciation and Amortization). *Other Controls* include Growth Opportunities, Leverage, Free Cash Flow, Cash, Age, Size, and Stock returns. ηi represents firm fixed effects while ϕ_t denotes year fixed effects (Following prior studies e.g., Chen *et al.*, 2017; Guariglia and Yang, 2016; Moin *et al.*, 2020; Richardson, 2006).
Precautionary Demand	Measured with financial constraint proxy, KZ Index, where, KZ = -1.002 * (Cash flow$_t$/Property, Plant and Equipment$_{t-1}$) + 0.283 * Tobin's Q$_t$ + 3.139 * (Total debt/Total capital$_t$) – 39.368 * (Dividend Paid$_t$ / Property, Plant and Equipment$_{t-1}$) – 1.315 * (Cash holdings$_t$/ Property, Plant and Equipment$_{t-1}$).
Agency Cost	Measured with Asset Turnover Proxy, ratio of total sales divided by total asset.
Total roles year-industry adjusted	Total number of roles per industry per year within the sample.
ME	Total Market Value of Equity.
Δ New Financing	Net new equity issued (equity issues minus repurchase) plus net new debt issue (debt issued minus debt retired) from fiscal year t-1 to t.

Tables

Table 3.1: Generalist CFO: Construction of First Factor

Panel A presents the results from a Factor analysis (FA) based on the following CFO experience related attributes: number of organization type, number of sectors, number of companies, and number of roles that CFOs have been worked through their career. CFO index is the first factor obtained from FA. Factor loadings of the first factor, the eigenvalue and the proportion of variance explained by the first factor is presented. Panel B reports the correlation coefficients among the CFO experience related attributes. Analytical definitions for all variables are provided in the Appendix. p-values are reported in parentheses. *** denotes statistical significance at the 5% level.

Panel A: Factor analysis (FA)				
Factor	Variables		Factor loading	
CFO Index	Number of organization type		0.5762	
	Number of sectors		0.7247	
	Number of companies		0.5833	
	Number of roles		0.8769	
Eigenvalue	1.9667			
Proportion	0.9511			
Panel B : Correlations among CFO variables				
	1	2	3	4
1. Number of organization type	1.0000			
2. Number of sectors	0.4348^{***}	1.0000		
3. Number of companies	0.3094^{***}	0.3879^{***}	1.0000	
4. Number of roles	0.4947^{***}	0.6267^{***}	0.5252^{***}	1.0000

Table 3.2: Summary Statistics

This table presents descriptive statistics for the key variables used in my analysis. Analytical definitions for all variables are provided in the Appendix. Panel A presents the summary statistics. The final sample consists of 8622 firm-year observations on CFO characteristics between 1999 and 2019. Generalist CFO is constructed with the first factor after combining four CFO attributes using factor analysis.

	N	Mean	SD	Min	p25	Median	p75	Max
Cash	8280	0.1377	0.1638	0	0.0301	0.0786	0.1808	0.8499
Generalist CFO	8280	0.0143	0.8859	-1.4538	-0.6109	-0.1255	0.5219	2.8668
CFO Age	8280	47.3339	7.1188	25	42	47	52	73
Female CFO	8280	0.0781	0.2684	0	0	0	0	1
CEO Chair Dummy	8280	0.1441	0.3512	0	0	0	0	1
Board Size	8280	6.8802	2.1175	2	5	6	8	20
Board Independence	8280	0.5279	0.1442	0.1667	0.4286	0.5000	0.6250	0.8182
Institutional Owner(%)	8280	9.005	11.039	0	0	6	14	95
Firm Size	8280	11.5346	2.1158	6.7946	10.0774	11.3219	12.9034	17.3334
Market to Book	8280	0.5041	0.2561	0.0257	0.3277	0.5009	0.6575	1.5540
Cash Flow	8280	0.0245	0.2487	-1.4398	0.0296	0.0858	0.1333	0.3266
Cash Flow Volatility	8280	0.0944	0.1862	0.0018	0.0157	0.0343	0.0869	1.4265
Net Working Capital	8280	0.1678	0.2512	-0.5586	0.0041	0.1341	0.2992	0.8677
Capital Expenditure	8280	0.0428	0.0506	0	0.0104	0.0254	0.0553	0.2879
R&D Dummy	8280	0.9758	0.1535	0	1	1	1	1
Dividend Dummy	8280	0.6114	0.4875	0	0	1	1	1
Leverage	8280	0.1634	0.1723	0	0.0074	0.1233	0.2621	0.8695
INED Female Number	7360	0.5132	1.1813	0	0	0	1	35
INED Female Ratio	7360	0.0973	0.1691	0	0	0	0.2000	1
INED Gender Diversity	7360	0.1184	0.1890	0	0	0	0.32000	0.5000

Table 3.3: Pairwise Correlation

This table presents pairwise correlation coefficients for the key variables used in my analysis. Analytical definitions for all variables are provided in the Table A1. The sample period is between 1999 and 2019.

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
(1) Cash	1.0000																	
(2) Generalist CFO	-0.0154	1.0000																
	(0.1654)																	
(3) CFO Age	-0.0409	0.0626	1.0000															
	(0.0002)	(0.0000)																
(4) Female CFO	-0.0013	0.0866	-0.0869	1.0000														
	(0.9062)	(0.0000)	(0.0000)															
(5) CEO Chair Dummy	0.0528	-0.1017	0.0202	-0.0327	1.0000													
	(0.0000)	(0.0000)	(0.0690)	(0.0033)														
(6) Board Size	-0.1932	0.1376	0.0272	-0.0351	-0.1686	1.0000												
	(0.0000)	(0.0000)	(0.0146)	(0.0016)	(0.0000)													
(7) Board Independ˜e	-0.0990	0.2330	0.0882	0.0031	-0.3152	0.3344	1.0000											
	(0.0000)	(0.0000)	(0.0000)	(0.7816)	(0.0000)	(0.0000)												
(8) Institutional ˜p	0.0228	0.0899	-0.0324	0.0335	-0.0787	-0.0081	0.1063	1.0000										
	(0.0402)	(0.0000)	(0.0036)	(0.0026)	(0.0000)	(0.4673)	(0.0000)											
(9) Firm Size	-0.3827	0.2241	0.0891	-0.0294	-0.1551	0.6540	0.4899	0.0198	1.0000									
	(0.0000)	(0.0000)	(0.0000)	(0.0082)	(0.0000)	(0.0000)	(0.0000)	(0.0757)										
(10) Market to Book	-0.2638	0.0885	-0.0389	-0.0267	-0.0132	0.1693	0.1172	-0.0014	0.2639	1.0000								
	(0.0000)	(0.0000)	(0.0005)	(0.0162)	(0.2370)	(0.0000)	(0.0000)	(0.9029)	(0.0000)									
(11) Cash Flow	-0.2707	0.0686	0.0162	0.0063	-0.0290	0.2056	0.1154	-0.0206	0.3943	0.0179	1.0000							
	(0.0000)	(0.0000)	(0.1448)	(0.5694)	(0.0091)	(0.0000)	(0.0000)	(0.0644)	(0.0000)	(0.1068)								
(12) Cash Flow Vol˜y	0.2588	-0.0419	-0.0536	-0.0070	0.0239	-0.1959	-0.1057	0.0339	-0.3607	0.0491	-0.5783	1.0000						
	(0.0000)	(0.0002)	(0.0000)	(0.5317)	(0.0314)	(0.0000)	(0.0000)	(0.0023)	(0.0000)	(0.0000)	(0.0000)							
(13) Net Working C˜l	0.5483	-0.0394	0.0173	0.0112	0.0152	-0.1156	-0.1035	0.0201	-0.2537	-0.5525	-0.1062	0.0644	1.0000					
	(0.0000)	(0.0004)	(0.1209)	(0.3140)	(0.1730)	(0.0000)	(0.0000)	(0.0712)	(0.0000)	(0.0000)	(0.0000)	(0.0000)						
(14) Capital Expen˜e	-0.1065	-0.0409	-0.0189	-0.0080	0.0266	0.0600	-0.0055	-0.0430	0.0817	0.0316	0.1059	-0.0590	-0.1666	1.0000				
	(0.0000)	(0.0002)	(0.0887)	(0.4715)	(0.0169)	(0.0000)	(0.6200)	(0.0001)	(0.0000)	(0.0045)	(0.0000)	(0.0000)	(0.0000)					
(15) R&D Dummy	0.0462	0.0188	-0.0290	0.0125	-0.0026	0.0010	0.0153	0.0444	-0.0314	0.0049	-0.0042	-0.0058	0.0405	-0.0010	1.0000			
	(0.0000)	(0.0909)	(0.0092)	(0.2600)	(0.8134)	(0.9284)	(0.1697)	(0.0001)	(0.0048)	(0.6572)	(0.7027)	(0.6027)	(0.0003)	(0.9318)				
(16) Dividend Dummy	-0.2807	0.0667	0.0816	-0.0170	-0.0376	0.3181	0.1406	-0.0161	0.5135	0.1924	0.4966	-0.4075	-0.1337	0.0796	0.0140	1.0000		
	(0.0000)	(0.0000)	(0.0000)	(0.1275)	(0.0007)	(0.0000)	(0.0000)	(0.1468)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.2090)			
(17) Leverage	-0.3087	0.0664	-0.0098	-0.0311	-0.0284	0.2011	0.1525	-0.0216	0.3050	0.6776	0.0050	-0.0058	-0.4586	0.1085	-0.0089	0.0935	1.0000	
	(0.0000)	(0.0000)	(0.3780)	(0.0052)	(0.0106)	(0.0000)	(0.0000)	(0.0520)	(0.0000)	(0.0000)	(0.6508)	(0.6038)	(0.0000)	(0.0000)	(0.4234)	(0.0000)		
(18) INED_female_r˜u	-0.1258	0.2137	0.0776	0.0190	-0.1259	0.2666	0.3522	0.0420	0.4067	0.1146	0.1212	-0.1216	-0.1177	-0.0098	-0.0123	0.1931	0.1046	1.0000
	(0.0000)	(0.0000)	(0.0000)	(0.1063)	(0.0000)	(0.0000)	(0.0000)	(0.0004)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.4050)	(0.2984)	(0.0000)	(0.0000)	

Table 3.4: Generalist CFOs, Board Female Representation and Firm Cash Policy

This table presents the results from several regressions on the relationship between generalist CFO and firm cash level. In Model 1, I use an ordinary least squares (OLS) regression with standard errors clustered at the firm level with Generalist CFO and all control variables on firm cash holdings using firm and year fixed effect. In Model 2, 3 and 4, I use independent non-executive female directors (INED) interaction term with generalist CFO and define INED female representations with total number of female, female ratio and gender diversity, respectively. In each model, I use an ordinary least squares (OLS) regression with standard errors clustered at the firm level, and firm and year fixed effect estimation. Generalist CFO variable is constructed with first factor after combining four CFO attributes using factor analysis as discussed in Section 3.2. All independent variables are measured on same year of dependent variable. Analytical definitions for all variables are provided in the Appendix. T-Statistics are reported in parentheses. ***, **, and * denote statistical significance at the 1%, 5% and 10% levels, respectively.

Dependent variable is defined as the ratio of cash holdings to total asset of firm.				
VARIABLES	Model 1	Model 2	Model 3	Model 4
Generalist CFO	0.0052*	0.0077**	0.0085**	0.0093**
	(1.7549)	(2.1979)	(2.3011)	(2.4168)
INED Female Number		0.0039		
		(1.5572)		
Generalist CFO* INED Female Number		-0.0029**		
		(-2.4029)		
INED Female Ratio			0.0046	
			(0.2535)	
Generalist CFO* INED Female Ratio			-0.0242*	
			(-1.7409)	
INED Female Blau				0.0139
				(0.7737)
Generalist CFO* INED Female BLAU				-0.0249*
				(-1.9254)
CFO Age	-0.0259	-0.0270	-0.0274	-0.0268
	(-1.4314)	(-1.4240)	(-1.4406)	(-1.4093)
Female CFO	-0.0130	-0.0083	-0.0084	-0.0081
	(-1.3946)	(-0.8530)	(-0.8716)	(-0.8448)
CEO Chair Dummy	0.0190**	0.0209**	0.0213**	0.0214**
	(2.0184)	(2.0636)	(2.1052)	(2.1158)
Board Size	0.0224*	0.0265**	0.0279**	0.0275**
	(1.9009)	(2.0911)	(2.2187)	(2.1762)
Board Independence	0.0922***	0.0964***	0.1006***	0.0988***
	(3.8510)	(3.6822)	(3.8020)	(3.7305)
Institutional Ownership	-0.0086	-0.0079	-0.0073	-0.0081
	(-0.3886)	(-0.3489)	(-0.3237)	(-0.3552)
Firm Size	-0.0163***	-0.0178***	-0.0174***	-0.0175***
	(-6.2371)	(-6.1226)	(-6.0749)	(-6.1136)
Market to Book	0.1161***	0.1175***	0.1173***	0.1168***
	(6.8063)	(6.4360)	(6.4197)	(6.4028)

Cash Flow	-0.0433***	-0.0518***	-0.0519***	-0.0516***
	(-2.7450)	(-2.8431)	(-2.8491)	(-2.8364)
Cash Flow Volatility	0.0699***	0.0706***	0.0709***	0.0713***
	(3.3177)	(3.1378)	(3.1374)	(3.1614)
Net Working Capital	0.3367***	0.3306***	0.3305***	0.3308***
	(17.2830)	(15.4082)	(15.4338)	(15.4217)
Capital Expenditure	0.1035***	0.0949**	0.0952**	0.0951**
	(2.6673)	(2.2308)	(2.2368)	(2.2310)
R&D Dummy	0.0029	-0.0078	-0.0083	-0.0078
	(0.2598)	(-0.7689)	(-0.8129)	(-0.7704)
Dividend Dummy	-0.0158**	-0.0137*	-0.0138**	-0.0139**
	(-2.3671)	(-1.9507)	(-1.9713)	(-1.9867)
Leverage	-0.1231***	-0.1207***	-0.1208***	-0.1196***
	(-5.9354)	(-5.5913)	(-5.5961)	(-5.5276)
Constant	0.2358***	0.2544***	0.2481***	0.2483***
	(3.2921)	(3.4173)	(3.3607)	(3.3675)
Observations	8,280	7,360	7,360	7,360
R-squared	0.4330	0.4318	0.4318	0.4320
Industry FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes

Table 3.5: CFO Attributes

This table presents the results from several regressions on the relationship between generalist CFO and firm cash holdings based on several CFO attributes in the firm. I have grouped firm based on (1) CFO recruitment pathway (internal versus external), and (2) CFO foreign exposure (whether CFO is either non-UK nationality, or forging education or experience in foreign firms). The cases reflect dummy variable whether the CFO has the criteria or not to dividend firms in subsample. Generalist CFO variable is constructed with first factor after combining four CFO attributes using factor analysis as discussed in Section 3.2. All independent variables are measured on same year of dependent variable. Analytical definitions for all variables are provided in the Appendix. T-Statistics are reported in parentheses. ***, **, and * denote statistical significance at the 1%, 5% and 10% levels, respectively.

Dependent variable is defined as the ratio of cash holdings to total asset of firm.				
Panel A: CFO Internal versus External Appointment				
VARIABLES	External	Internal	External	Internal
Generalist CFO	0.0065	0.0033	0.0136***	0.0038
	(1.6270)	(0.8246)	(4.5882)	(1.2226)
INED Female Ratio			0.0169	0.0125
			(1.3205)	(0.9732)
Generalist CFO * INED Female Ratio			-0.0505***	0.0110
			(-4.6590)	(0.8863)
Constant	0.1730	0.3003***	0.1762***	0.3144***
	(1.6216)	(3.3003)	(2.6867)	(4.9896)
Chi-sq	1.17		4.85**	
Observations	4,369	3,911	3,866	3,494
R-squared	0.4597	0.4087	0.4645	0.4033
All controls	Yes	Yes	Yes	Yes
Industry FE and Year FE	Yes	Yes	Yes	Yes

Panel B: UK National with Foreign Education and/or Experience				
VARIABLES	Local	Foreign	Local	Foreign
Generalist CFO	0.0127**	-0.0000	0.0164***	0.0041
	(2.4348)	(-0.0088)	(4.6637)	(1.5007)
INED Female Ratio			0.0250*	0.0021
			(1.9041)	(0.1724)
Generalist CFO * INED Female Ratio			-0.0344**	-0.0170*
			(-2.5574)	(-1.6831)
Constant	0.3047***	0.2579**	0.3374***	0.2718***
	(2.9944)	(2.5442)	(5.0192)	(4.3550)
Chi-sq	13.92***		7.13***	
Observations	3,871	4,409	3,341	4,019
R-squared	0.4211	0.4650	0.4040	0.4759
All controls	Yes	Yes	Yes	Yes
Industry FE and Year FE	Yes	Yes	Yes	Yes

Table 3.6: CEO Power

This table presents the results from several regressions on the relationship between generalist CFO and firm cash holdings based on CEO relative power in firm towards CEO-CFO dynamics. I measured CFO-CEO dynamics with respect to CEO-CFO Co-option and CEO Accounting Expertise. If firm's CEO has positive node with respect to a particular attribute, then the firm is Yes subsample and vice versa. For CFO-CEO co-option, I checked whether the CFO is recruited under current CEO. For, CEO accounting expertise, I checked whether CEO has prior experience as accountant. Generalist CFO variable is constructed with first factor after combining four CFO attributes using factor analysis as discussed in Section 3.2. All independent variables are measured on same year of dependent variable. Analytical definitions for all variables are provided in the Appendix. T-Statistics are reported in parentheses. ***, **, and * denote statistical significance at the 1%, 5% and 10% levels, respectively.

Dependent variable is defined as the ratio of cash holdings to total asset of firm.				
Panel A: CEO-CFO Co-option				
VARIABLES	No	Yes	No	Yes
Generalist CFO	0.0105**	0.0032	0.0181***	0.0040
	(2.3177)	(0.8770)	(5.3672)	(1.4363)
INED Female Ratio			0.0483***	-0.0090
			(3.5245)	(-0.7442)
Generalist CFO * INED Female Ratio			-0.0447***	-0.0060
			(-3.4444)	(-0.5749)
Constant	0.3349***	0.2091**	0.3157***	0.2438***
	(2.9948)	(2.3557)	(4.6273)	(3.9703)
Chi-sq	4.42**		9.62***	
Observations	3,729	4,551	3,320	4,040
R-squared	0.4564	0.4236	0.4581	0.4246
All controls	Yes	Yes	Yes	Yes
Industry FE and Year FE	Yes	Yes	Yes	Yes

Panel B: Accounting Expert CEO				
VARIABLES	No	Yes	No	Yes
Generalist CFO	0.0055	-0.0034	0.0102***	-0.0078
	(0.0033)	(0.0069)	(0.0024)	(0.0070)
INED Female Ratio			0.0180*	-0.0150
			(0.0099)	(0.0264)
Generalist CFO * INED Female Ratio			-0.0276***	0.0291
			(0.0089)	(0.0246)
Constant	0.2323***	0.1146	0.2617***	0.1204
	(0.0751)	(0.2110)	(0.0495)	(0.1580)
Chi-sq	2.57*		5.58**	
Observations	7,061	509	6,267	469
R-squared	0.4311	0.4465	0.4294	0.4534
All controls	Yes	Yes	Yes	Yes
Industry FE and Year FE	Yes	Yes	Yes	Yes

Table 3.7: Does Generalist CFO Keep Cash To Internally Finance More Investment?

This table presents the results from several regressions on the relationship between generalist CFO and firm cash holdings based on firm investment scenario. Panel A shows firm investment intensity measured with R&D expenditure to total asset ratio. If firm's R&D ratio is higher than 80th percentile per industry-year R&D ratio, then the firm is in High R&D subsample and vice versa. Panel B presents firm overinvestment status. Following literature (Chen *et al.*, 2017; Guariglia and Yang, 2016; Moin *et al.*, 2020; Richardson, 2006), I estimated firm yearly observations of new investment with Equation (5) and defined overinvestment as a dummy variable if the residual of Equation (5) is positive in that particular year, and 0 otherwise. Generalist CFO variable is constructed with first factor after combining four CFO attributes using factor analysis as discussed in Section 3.2. All independent variables are measured on same year of dependent variable. Analytical definitions for all variables are provided in the Appendix. T-Statistics are reported in parentheses. ***, **, and * denote statistical significance at the 1%, 5% and 10% levels, respectively.

Dependent variable is defined as the ratio of cash holdings to total asset of firm				
Panel A: Firms on R&D Intensity				
VARIABLES	Low	High	Low	High
Generalist CFO	0.0015	0.0169***	0.0026	0.0293***
	(0.8515)	(3.3616)	(1.1742)	(4.9510)
INED Female Ratio			0.0074	0.0198
			(0.8187)	(0.7576)
Generalist CFO * INED Female Ratio			-0.0088	-0.0770***
			(-1.0865)	(-3.2912)
Constant	0.2413***	0.3864***	0.2438***	0.3897***
	(5.7380)	(3.0726)	(5.4459)	(3.0156)
Chi-sq	9.42***		16.50***	
Observations	6,519	1,761	5,781	1,579
R-squared	0.4103	0.4398	0.4038	0.4542
All controls	Yes	Yes	Yes	Yes
Industry FE and Year FE	Yes	Yes	Yes	Yes

Panel B: Firms with Overinvestment				
VARIABLES	Under	Over	Under	Over
Generalist CFO	0.0025	0.0079**	0.0036	0.0164***
	(1.1260)	(2.4868)	(1.2905)	(4.0669)
INED Female Ratio			0.0112	0.0086
			(0.9701)	(0.5263)
Generalist CFO * INED Female Ratio			-0.0015	-0.0468***
			(-0.1416)	(-3.2153)
Constant	0.2451***	0.3013***	0.2293***	0.2989***
	(4.3790)	(3.5946)	(3.8607)	(3.5199)
Chi-sq	2.17*		5.95**	
Observations	4,115	2,524	3,695	2,293
R-squared	0.4012	0.4594	0.3943	0.4600
All controls	Yes	Yes	Yes	Yes
Industry FE and Year FE	Yes	Yes	Yes	Yes

Table 3.8: Regression Estimates Using Two Stage Instrumental Variables (IV) Methods

This table reports the results from an IV estimation on the relationship between generalist CFO and firm cash holdings. I use two instrumental variables, Business Top Rank and CFO Network Size, for the first stage estimation. Business Top Rank is the dummy variable defined as 1 if CFOs have business degrees from top ranked universities (Ivy league, Russell group or list of Top 25 universities announced by THE). Network Size is the natural logarithm of total number of directors that are connected to CFO as reported in BoardEx database. The results of the first stage regression are presented in Model 1 and the results of the second stage regression are presented in Model 2-4. Generalist CFO variable is constructed with first factor after combining four CFO attributes using factor analysis as discussed in Section 3.2. All independent variables are measured on same year of dependent variable. Analytical definitions for all variables are provided in the Appendix. T-Statistics are reported in parentheses. ***, **, and * denote statistical significance at the 1%, 5% and 10% levels, respectively.

In second stage models, dependent variable is defined as the ratio of cash holdings to total asset of firm.			
	First Stage	Second Stage	
VARIABLES	Model 1	Model 2	Model 3
Generalist CFO		0.0654***	0.0849***
		(7.1559)	(0.0130)
Business Top Rank	0.2163***		
	(4.2814)		
CFO Network Size	0.0904***		
	(17.8172)		
INED Female Ratio			0.0647**
			(0.0288)
Generalist CFO * INED Female Ratio			-0.2391**
			(0.1007)
CFO Age	0.1251**	-0.0375***	-0.0388***
	(1.9859)	(-3.5114)	(0.0118)
Female CFO	0.1765***	-0.0235***	-0.0115*
	(5.2614)	(-3.9287)	(0.0068)
CEO Chair Dummy	-0.0541**	0.0244***	0.0278***
	(-2.0107)	(5.2945)	(0.0051)
Board Size	0.0934**	0.0204***	0.0240***
	(2.2536)	(2.8602)	(0.0077)
Board Independence	0.1473*	0.0784***	0.1039***
	(1.8868)	(5.8121)	(0.0160)
Institutional Ownership	0.2904***	-0.0247*	-0.0171
	(3.5623)	(-1.7455)	(0.0147)
Firm Size	0.0556***	-0.0216***	-0.0219***
	(7.3481)	(-15.0728)	(0.0015)
Market to Book	0.2499***	0.0969***	0.0959***
	(4.5263)	(9.9763)	(0.0103)
Cash Flow	0.1076**	-0.0465***	-0.0554***
	(2.1903)	(-5.5261)	(0.0097)

Cash Flow Volatility	0.0130	0.0738***	0.0792***
	(0.2096)	(6.9595)	(0.0124)
Net Working Capital	0.0902**	0.3300***	0.3264***
	(2.0356)	(43.3813)	(0.0083)
Capital Expenditure	0.0972	0.1189***	0.1297***
	(0.5187)	(3.7237)	(0.0348)
R&D Dummy	-0.0157	0.0043	-0.0114
	(-0.2659)	(0.4319)	(0.0108)
Dividend Dummy	-0.0541**	-0.0120***	-0.0077*
	(-2.2089)	(-2.8406)	(0.0045)
Leverage	-0.0584	-0.1126***	-0.1050***
	(-0.7817)	(-8.8188)	(0.0136)
Constant	-1.2236***	0.3239***	0.3508***
	(-4.3753)	(6.8566)	(0.0505)
Observations	7,723	7,723	6,904
R-squared	0.2393	0.3550	0.3324
Industry FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Anderson canon. corr. LM statistic (p values)		335.542 (0.00)	68.307(0.00)
Cragg-Donald Wald F statistic		174.301	17.123
Stock-Yogo weak ID test critical values 10%		19.93	.
Sargan statistic (p values)		0.006 (0.936)	0.963 (0.326)
Endogeneity test (p values)		51.406 (0.00)	29.133 (0.00)

Table 3.9: Regression Estimates Using Heckman Two Stage Least Square (2SLS) Method

This table reports the results from Heckman 2sls method on the relationship between generalist CFO and firm cash holdings. I use number of Total Roles year-industry adjusted as potential exogenous variable for the first stage estimation. I calculated the viable as natural logarithm of number of roles per industry per year. The results of the first stage regression are presented in Model 1 and the results of the second stage regression are presented in Model 2-4. Generalist CFO variable is constructed with first factor after combining four CFO attributes using factor analysis as discussed in Section 3.2. All independent variables are measured on same year of dependent variable. Analytical definitions for all variables are provided in the Appendix. T-Statistics are reported in parentheses. ***, **, and * denote statistical significance at the 1%, 5% and 10% levels, respectively.

In Second Stage Models, dependent variable is defined as the ratio of cash holdings to total asset of firm.			
	Selection	Second Stage	
VARIABLES	Model 1	Model 2	Model 3
Generalist CFO		0.00500*	0.0089**
		(1.6892)	(2.4054)
INED Female Ratio			0.0054
			(0.2951)
Generalist CFO * INED Female Ratio			-0.0295**
			(-2.1691)
Total Roles year-industry adj	-0.0686***		
	(-4.1576)		
Inverse Mills Ratio		-0.277***	-0.3308***
		(-3.4755)	(-4.0589)
CFO Age		-0.0204	-0.0205
		(-1.1397)	(-1.0904)
Female CFO		-0.0131	-0.0085
		(-1.4301)	(-0.9043)
CEO Chair Dummy		0.0204**	0.0228**
		(2.1656)	(2.2574)
Board Size		0.0201*	0.0245*
		(1.7034)	(1.9444)
Board Independence		0.0853***	0.0924***
		(3.5542)	(3.4868)
Institutional Ownership		-0.0134	-0.0138
		(-0.6063)	(-0.6133)
Firm Size	0.131***	-0.0385***	-0.0437***
	(16.2129)	(-5.5636)	(-6.2429)
Market to Book	0.361***	0.0565**	0.0467*
	(4.6701)	(2.2691)	(1.7824)
Cash Flow	0.0438	-0.0505***	-0.0603***
	(0.6357)	(-3.2166)	(-3.3500)
Cash Flow Volatility	0.345***	0.0110	0.0004
	(3.9564)	(0.4104)	(0.0142)
Net Working Capital	0.124*	0.316***	0.3059***
	(1.9165)	(14.9057)	(13.3000)

Capital Expenditure	-0.212	0.133***	0.1308***
	(-0.8061)	(3.3250)	(2.9727)
R&D Dummy	-0.0588	0.0122	0.0031
	(-0.6877)	(1.0609)	(0.2870)
Dividend Dummy	-0.213***	0.0219*	0.0306**
	(-6.0857)	(1.7520)	(2.4094)
Leverage	-0.302***	-0.0717***	-0.0595**
	(-2.8224)	(-3.0000)	(-2.4089)
Constant	-1.060***	0.682***	0.7786***
	(-5.1961)	(4.4575)	(4.9372)
Observations	9,461	8,280	7,360
R-squared		0.436	0.4363
Year FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes

Table 3.10: Regression Estimates after Propensity Score Matching (PSM)

This table presents the results from several regressions on the relationship between generalist CFO and firm cash holdings based propensity score matching. If generalist CFO's factor score is higher than the per industry-year mean first factor score, then the firm is in high diverse CFO subsample identified as treatment group and vice versa. The dependent variable is defined as the ratio of cash holdings to total asset of firm. Generalist CFO variable is constructed with first factor after combining four CFO attributes using factor analysis as discussed in Section 3.2. All independent variables are measured on same year of dependent variable. Analytical definitions for all variables are provided in the Appendix. T-Statistics are reported in parentheses. ***, **, and * denote statistical significance at the 1%, 5% and 10% levels, respectively.

Two-sample t test with equal variances

	T	C	Mean1	Mean2	dif	St Err	t value	p value
Cash holdings by generalist CFO high to low diverse	5999	5970	.144	.137	.007	.003	2.1	.037

Comparison between firm level controls treatment and control group

	Mean		t-test			V(T)/
Variable	Treated	Control	%bias	t	p>t	V(C)
Firm Size	12.026	11.996	1.5	0.630	0.526	1.12*
Market to Book	0.520	0.521	-0.300	-0.140	0.887	1.010
Cash Flow	0.026	0.016	3.7	1.700	0.089	0.970
Cash Flow Volatility	0.095	0.103	-4.600	-2.070	0.038	0.89*
Net Working Capital	0.145	0.164	-7.600	-3.460	0.001	0.94*
Capital Expenditure	0.045	0.046	-1.200	-0.520	0.603	0.88*
R&D Dummy	0.973	0.969	2.3	0.970	0.333	.
Dividend Dummy	0.616	0.580	7.3	3.340	0.001	.
Leverage	0.176	0.181	-3.000	-1.320	0.185	0.950

* if variance ratio outside [0.94; 1.06]

Ps R2	LR chi2	p>chi2	MeanBias	MedBias	B	R	%Var
0.003	37.30	0.000	3.5		3.0	13.3	0.9157

* if B>25%, R outside [0.5; 2]

Regression Models after PSM		
Dependent variable is defined as the ratio of cash holdings to total asset of firm.		
VARIABLES	Model 1	Model 2
Generalist CFO	0.0052*	0.0085**
	(1.7333)	(2.2973)
INED Female Ratio		0.0046
		(0.2527)
Generalist CFO * INED Female Ratio		-0.0242*
		(-1.7410)
CFO Age	-0.0258	-0.0273
	(-1.4254)	(-1.4368)
Female CFO	-0.0130	-0.0084
	(-1.3978)	(-0.8750)
CEO Chair Dummy	0.0190**	0.0213**
	(2.0213)	(2.1089)
Board Size	0.0224*	0.0278**
	(1.8983)	(2.2063)
Board Independence	0.0922***	0.1006***
	(10.5977)	(13.5946)
Institutional Ownership	(0.0223)	(0.0227)
	(0.0002)	(0.0002)
Firm Size	-0.0163***	-0.0173***
	(-6.2692)	(-5.9655)
Market to Book	0.1158***	0.1170***
	(6.7719)	(6.3934)
Cash Flow	-0.0435***	-0.0520***
	(-2.7532)	(-2.8571)
Cash Flow Volatility	0.0700***	0.0710***
	(3.3175)	(3.1416)
Net Working Capital	0.3366***	0.3304***
	(17.2615)	(15.4393)
Capital Expenditure	0.1030***	0.0946**
	(2.6546)	(2.2207)
R&D Dummy	0.0029	-0.0083
	(0.2613)	(-0.8058)
Dividend Dummy	-0.0159**	-0.0139**
	(-2.3731)	(-1.9857)
Leverage	-0.1231***	-0.1208***
	(-5.9469)	(-5.5926)
Constant	0.2356***	0.2478***
	(3.2905)	(3.3577)
Observations	8,265	7,345
R-squared	0.4325	0.4312
Industry FE	Yes	Yes
Year FE	Yes	Yes

Table 3.11: Does Generalist CFO Keep Cash For Traditional Motive?

This table presents the results from several regressions on the relationship between generalist CFO and firm cash holdings based on traditional demand for cash inside firm. Panel A and B shows precautionary demand (measured with KZ index) and agency motive (measured with asset turnover ratio) of cash holdings respectively. If firm's respective ratio is higher than per industry-year mean ratio, then the firm is in High cash demand subsample and vice versa. I referred upper 20^{th} KZ indexed firm in financial constraints, that is, high precautionary demand firm group and the rest in low demand group. The dependent variable is defined as the ratio of cash holdings to total asset of firm. Generalist CFO variable is constructed with first factor after combining four CFO attributes using factor analysis as discussed in Section 3.2. All independent variables are measured on same year of dependent variable. Analytical definitions for all variables are provided in the Appendix. T Statistics are reported in parentheses. ***, **, and * denote statistical significance at the 1%, 5% and 10% levels, respectively.

Dependent variable is defined as the ratio of cash holdings to total asset of firm.				
Panel A: Precautionary Demand				
VARIABLES	UC	C	UC	C
Generalist CFO	0.0054*	-0.0023	0.0092**	-0.0017
	(1.8000)	-(0.2072)	(2.4211)	(-0.1206)
INED Female Ratio			0.0188	-0.0155
			(1.1463)	(-0.1757)
Generalist CFO * INED Female Ratio			-0.0245*	0.0259
			(-1.9141)	(0.5717)
Constant	0.2667***	0.1668	0.2764***	0.3121
	(3.7458)	(0.7662)	(3.7863)	(1.3169)
Chi-sq	0.21		0.59	
Observations	7,733	547	6,890	470
R-squared	0.4105	0.5425	0.4076	0.5521
All controls	Yes	Yes	Yes	Yes
Industry FE and Year FE	Yes	Yes	Yes	Yes

Panel B: Agency Costs				
VARIABLES	Low	High	Low	High
Generalist CFO	0.0092**	0.0021	0.0159***	0.0054
	(2.0594)	(0.5747)	(2.9200)	(1.1252)
INED Female Ratio			0.0038	0.0225
			(0.1166)	(1.3205)
Generalist CFO * INED Female Ratio			-0.0402*	-0.0155
			(-1.9465)	(-1.1672)
Constant	0.4290***	0.1486*	0.4346***	0.1527*
	(3.8857)	(1.8442)	(3.9354)	(1.7787)
Chi-sq	4.57**		5.26*	
Observations	3,923	4,295	3,446	3,860
R-squared	0.4881	0.3861	0.4845	0.3929
All controls	Yes	Yes	Yes	Yes
Industry FE and Year FE	Yes	Yes	Yes	Yes

Table 3.12: Other Robustness Checks

This table presents the results from several regressions on the relationship between CFO and firm cash holdings based (1) each of the experience dimensions of CFOs e.g. number of organization types, sectors, firms, and roles and (2) Alternative definition of cash ratio as cash and short term investment to total assets. The dependent variable is defined as the ratio of cash holdings to total asset of firm. Generalist CFO variable is constructed with first factor after combining four CFO attributes using factor analysis as discussed in Section 3.2. All independent variables are measured on same year of dependent variable. Analytical definitions for all variables are provided in the Appendix. T Statistics are reported in parentheses. ***, **, and * denote statistical significance at the 1%, 5% and 10% levels, respectively.

Dependent variable is defined as the ratio of cash holdings to total asset of firm.					
Panel A: Four Dimensions of CFO Experience					
VARIABLES	Model 1	Model 2	Model 3	Model 4	Model 5
Generalist CFO	0.0035*				
	(1.6568)				
Organizations		0.0073			
		(0.0072)			
Sectors			0.0027*		
			(0.0014)		
Firms				0.0002	
				(0.0002)	
Roles					0.0019**
					(0.0008)
Constant	0.3193***	0.3190***	0.3112***	0.3234***	0.3072***
	(3.7283)	(3.7402)	(3.6757)	(3.7716)	(3.6279)
Observations	8,077	8,124	8,124	8,124	8,124
R-squared	0.7645	0.7641	0.7643	0.7641	0.7644
All controls	Yes	Yes	Yes	Yes	Yes
Industry FE and Year FE	Yes	Yes	Yes	Yes	Yes

Panel B: Alternative Definition of Cash Ratio				
Dependent variable is defined as the ratio of cash holdings plus short term investments to total asset of firm.				
VARIABLES	Model 1	Model 2	Model 3	Model 4
Generalist CFO	0.0060*	0.0084**	0.0081**	0.0088**
	(1.7647)	(2.2105)	(2.0769)	(2.2000)
INED Female Number		0.0037		
		(1.1563)		
Generalist CFO* INED Female Number		-0.0031**		
		(-2.2143)		
INED Female Ratio			0.0019	
			(0.1050)	
Generalist CFO* INED Female Ratio			-0.0164	
			(-1.0000)	
INED Female Blau				0.0120
				(0.6780)
Generalist CFO* INED Female BLAU				-0.0181
				(-1.2067)
Constant	0.1165	0.1234	0.1199	0.1202
	(1.5269)	(1.5272)	(1.5082)	(1.5119)
Observations	8,328	7,402	7,402	7,402
R-squared	0.5502	0.5484	0.5481	0.5483
All controls	Yes	Yes	Yes	Yes
Industry FE and Year FE	Yes	Yes	Yes	Yes

Table 3.13: Generalist CFO- Value of Cash

This table presents the results on the value of cash holdings for generalist CFO firms following the methodology of Faulkender and Wang (2006). The dependent variable is Excess Return, which is defined as the difference between the stock return of a firm on yearly basis from the stock's benchmark return over the same period. The benchmark portfolio is one of the 25 Fama–French portfolios based on size and book-to-market. All independent variables except generalist CFO Firm and Leverage are scaled by the lagged market value of equity (MVt−1). I include the interaction variables to interact change in cash per year with generalist CFO Firm as the main variable of interest. Analytical definitions for all variables are provided in the Appendix. I run OLS regressions by adding year and industry fixed effects in all specifications. T Statistics are reported in parentheses. ***, **, and * denote statistical significance at the 1%, 5% and 10% levels, respectively.

Dependent variable is defined as the excess return of firm from the benchmark return using 25 Fama-French portfolio over same period.		
VARIABLES	Model 1	Model 2
Generalist CFO Dummy	0.0038	0.0114
	(0.2993)	(0.6078)
Δ Cash/ME	0.3227**	0.3973***
	(2.5448)	(3.1988)
Generalist CFO * Δ Cash/ME	0.3040**	0.3277***
	(2.2335)	(2.7836)
Δ Earnings/ME	0.1180***	0.1082***
	(4.6402)	(4.3123)
Δ Net Asset/ME	0.0771***	0.0358*
	(3.3674)	(1.6672)
Δ R&D/ME	0.2214	0.0710
	(0.6714)	(0.2129)
Δ Interest/ME	-0.9478**	-0.7770**
	(-2.4817)	(-2.3198)
Δ Dividend/ME	0.4579	0.3257
	(1.6389)	(1.4240)
Δ Net Financing/ME	0.3858***	0.6449***
	(3.1529)	(3.1051)
L. Cash/ME	0.0000	-0.0000
	(0.8032)	(-0.1934)
L. Cash/ME * Δ Cash/ME	-0.6180***	-1.3072***
	(-15.1809)	(-20.9075)
Leverage/MV	-0.0503	0.0149
	(-1.0783)	(0.3256)
Leverage/MV * Δ Cash/ME	0.0000	-0.0000
	(0.4820)	(-0.3882)
Constant	0.0434*	0.1265***
	(1.1846)	(0.8173)
Observations	10,148	9,975
R-squared	0.0995	0.2414
Industry FE	Yes	No
Firm FE	No	Yes
Year FE	Yes	Yes

Appendix A1:Types of Organizations and types of sector reported in BoradEx with CFO past Experience

Panel A: Types of Organizations in BoardEx (Total 10 types)	
Armed Forces	Partnership
Charities	Private
Clubs	Quoted
Government	Sporting
Medical	Universities

Sectors in BoardEx (Total 51 types)		
Aerospace and Defence	Food and Drug Retailers	Pharmaceuticals and Biotechnology
Automobiles and Parts	Food Producers and Processors	Private Equity
Banks	Forestry and Paper	Publishing
Beverages	General Retailers	Real Estate
Blank Check / Shell Companies	Government	Regulators
Business Services	Health	Renewable Energy
Chamber of Commerce	Household Products	Software and Computer Services
Chemicals	Information Technology Hardware	Sovereign Wealth Fund
Clothing and Personal Products	Insurance	Specialty and Other Finance
Construction and Building Materials	Investment Companies	Steel and Other Metals
Consumer Services	Legal	Telecommunication Services
Containers and Packaging	Leisure and Hotels	Tobacco
Diversified Industrials	Leisure Goods	Trade Association
Education	Life Assurance	Transport
Electricity	Media and Entertainment	Unknown
Electronic and Electrical Equipment	Mining	Utilities - Other
Engineering and Machinery	Oil and Gas	Wholesale Trade

Chapter 4

CFO Generalist Career Experience and Firm Dividend Policy: Moderating Role of Board Gender Diversity[14]

[14] I presented this chapter at the BAFA Annual Conference 2023 and ASFAAG 1st Annual Conference 2021. I am thankful for the feedback I received from the participants.

4.1. Introduction

Dividend policy remains a major unresolved puzzle in corporate finance, despite extensive theoretical and empirical literature on the topic. The presence of high-level, unexplained variance in the dividend models – with both firm-level and market-level factors – has inspired much research (Brav *et al.*, 2005; Deshmukh, Goel and Howe, 2013). Studies inspired by the upper echelon theory of Hambrick and Mason (1984) have investigated the impact of top management's demographic characteristics and background on firm dividend policy. These have tended to focus on Chief Executive Officers (CEOs)[15], even though the characteristics of Chief Financial Officers (CFOs) seem to be more relevant to firms' finance decisions[16] (e.g., (Mobbs, 2018; Florackis and Sainani, 2018; Xu *et al.*, 2019; Ferris and Sainani, 2021; Schopohl, Urquhart and Zhang, 2021). Dividend is the residual finance decision that are strongly connected with liquidity, investment and external financing. The role of CFOs' characteristics in firm dividend decisions is underexplored, especially for the UK firms, where CFOs tend to sit on the boards (Florackis and Sainani, 2018) and more than 80% of listed firms pay regular dividends (Renneboog and Trojanowski, 2011; Ataullah, Le and Wood, 2022). Following the UET, I posit that the generalist experience of CFOs can affect firm dividend payout at least for two reasons—managerial risk-taking and dividend being residual of cash and investment.

Among a CFO's attributes, experience is highly relevant to a firm's strategic choices in areas such as dividend payments, as experience builds cognitive knowledge, shapes perceptions of firm opportunity and threat, and influences managers' strategic preferences. After the seminal work of Becker (1962) on the human capital theory that distinguished the general and unique skills of managers, a vast literature has

[15] For example, these dividend studies cover managerial attributes like demographic features (Nicolosi, 2013), past career experience (Custódio and Metzge, 2014; Faulkner and García-Feijóo, 2021), CEO power (Chintrakarn *et al.*, 2018) and conservatism, measured with a personal choice like overconfidence (Deshmukh *et al.*, 2013; Ben-David, Graham, and Harvey, 2007), political preference (Bayat and Goergen, 2020), signature style (Duong, Banti Instefjord, 2021) as well as conservatism induced by the firm through pay policy like equity compensations (Ding, Ho and Chang, 2021) and inside debt (Caliskan and Doukas, 2015; Srivastav, Armitage, and Hagendorff, 2014).

[16] Florackis and Sainani (2018) and Xu *et al.* (2019) study the role of CFOs on Cash Holding and Liquidity, Mobb (2018) and Schopohl, Urquhart, and Zhang (2021) study the role CFOs on debt and Ferris and Sainani (2020) study the role CFOs on M&A.

demonstrated a significant role for generalist CEOs in higher risk-taking (May, 1995), with a particular emphasis on corporate innovation (Custódio, Ferreira and Matosc, 2019) and higher costs of equity (Mishra, 2014). Generalist managers have greater strategic relevance (Finkelstein and Hambrick, 1989), with a broader knowledge base (Karaevli and Tim Hall, 2006) and enhanced information-processing ability (Custódio, Ferreira and Matosc, 2019), and they are more prone to risk-taking(Ma *et al.*, 2021). Thus, this study explores how the generalist experience of CFOs influences firm dividend decisions.

Dividend decisions rely on the final approval of the board. Following resource dependency theory and social role theory, prior studies presents that female board representation has positive impact on firm dividend payment (Chen, Leung and Goergen, 2017). Furthermore, female board representation shows a robust monitoring role on entrenched management (Adams and Ferreira, 2009). Thus, I investigate how gender-diverse boards moderate generalist CFOs' influence on dividend decisions. Theoretically, managers enjoy discretion on dividend payments to avail financial flexibility (Harford, Li and Zhao, 2008; Bonaimé, Hankins and Harford, 2014). In reality, strategic decisions are outcomes of the interaction of relevant individuals and groups (Chen and Lai, 2017; Oehmichen, Schrapp and Wolff, 2017). In their review article on the synthesis of the board-strategy relationship, (Bezemer *et al.*, 2022) point out that, despite some studies on untangling the complex interplay regarding board decisions (Zhang, Baden-Fuller and Pool, 2011), it is yet to generalize the relationship between boards and executives whether it is "contested" (e.g., Yoo and Reed, 2015; Hermanson *et al.*, 2020) or "cooperative" (Fernandez and Sundaramurthy, 2020; Boivie *et al.*, 2021). A diverse board with respect to gender of directors can be an excellent case to observe such interaction. A gender diverse board is expected to play a role in balancing the continuation of dividend payments to mitigate the agency problems that arise from free cashflow (Jensen, 2009) while encouraging inclusive new thinking and discouraging group thinking (Gompers, Mukharlyamov and Xuan, 2016), which may leave room for the value-additive strategic changes (Haynes and Hillman, 2010) proposed by managers.

As CFOs in the UK firms mostly sit on their boards and other firms' boards (Florackis and Sainani, 2018), evidence from the UK sample helps to develop a broader view of the role of CFOs in firm financial choices like dividend policy. Furthermore, more than 80% of the UK-listed firms pay regular dividends (Renneboog and Trojanowski, 2011; Ataullah, Le and Wood, 2022), drawing attention to the possible adverse effect on firm future investment and economic growth as well as the effectiveness of corporate governance to deal with such practice. Following the literature on generalist CEOs (e.g., Custódio and Metzger, 2014; Ma *et al.*, 2021), I identify generalist CFOs as those with work experience in multiple industries, firms, and roles, with all others as "specialist CFOs". Using the data for nonfinancial firms listed on the Main Board the London Stock Exchange (LSE) from 1999 to 2019, I examine the effect of generalist CFOs on firm dividend policy. I find a significant negative association between generalist CFOs and firm dividend payments, implying that the firms with more-generalist CFOs recommend lower dividend payments due to their attitudes to risk-taking compared to their counterpart. This assumption supports the view that dividend payments are a much easier and more risk-averse choice than a decision to embark upon uncertain new ventures in investment (Caliskan and Doukas, 2015; Bernile, Bhagwat and Yonker, 2018), ceteris paribus.

To ensure our findings are not determined by omitted variable bias, I control for observable CFO, CEO, and board characteristics such as CFO age, female CFO, CEO Chair dummy, the board size, and board independence. Our results are robust to include these controls and alternative specifications. Moreover, our results remain significant even after controlling for firm and year fixed effects. This further alleviates possible concerns that our findings are determined by unobserved time-invariant heterogeneity. To understand CFO's managerial discretion for CEO power and delegation, I examine the relationship between the generalist CFO and firm dividend by splitting the sample into firms with (1) CFO-CEO Co-option and (2) CEO Pay Rank. The negative relationship between generalist CFOs and firm dividends is significant in cases where CEO power is less pronounced.

I deal with endogeneity issues that may drive the results; for example, the board may choose to recruit CFOs with a specific attribute that best fits the firm's strategic needs.

If I do not adequately control for such, the difference in dividends between generalist CFOs may be mistakenly attributed to CFOs rather than the difference in firm properties. I address endogeneity in three ways. First, I employ an instrumental variable (IV) approach using three potential instruments (CFO network size, MBA Top Rank as a dummy variable indicating whether the CFO has a degree from top-ranked universities, e.g., Russel groups, Ivy League, and the Times Higher Education Top 25 universities, and Foreign CFO as whether the CFO is from non-UK nationality, or has foreign graduation degree, or has working experience in foreign countries) for generalist CFOs and obtain similar results. Second, I utilize a propensity score matching (PSM) technique and compare firms in pairs with more and less generalist CFOs, these firms are similar to several observable firm characteristics. Finally, I split the sample with CFO transition from less generalist to more generalist and observed the pre and post-CFO transition firm behaviour in dividend policy. The analysis results from these endogeneity tests further confirm the primary findings.

I offer a reasonable explanation for the negative association between generalist CFOs and firm dividends. If generalist CFOs are highly prone to risk-taking, they are expected to invest more. They are more motivated to cut dividend and hold cash for low-cost, low-monitored internal financing than their counterpart (Minnick and Rosenthal, 2014). I run firm subsample analyses based on internal financing deficit and find that the negative association between generalist CFO and firm dividend is significant only for firms with internal financing deficit. As risk takers, generalist CFOs have a higher tendency to invest and are more likely to have a higher demand for internal funds; this demand pressure explains their inclination to pay less dividends to hold more cash and accumulate internal funds.

Furthermore, I incorporate board gender diversity[17] to understand how their presence may moderate the dividend decision of the generalist CFOs. Among the different dimensions of diversity, I choose gender diversity as a moderator for two reasons. First, prior studies provide evidence on the direct impact of board gender diversity on firm dividend decisions. Second, female representation on board is well established in the

[17] I also run interaction analyses on board age and nationality diversity; however, only results on board gender diversity are significant.

literature as a robust monitoring tool; managerial behaviour can be monitored and corrected by effective female board representation. My results on board diversity interactions show that female directors act as an effective monitoring tool on the generalist CFOs as the interaction term is positive and significant on the firms' dividend decision. I offer a plausible explanation for moderating female representation on the negative association between generalist CFOs and firm dividend. As female representation is vigilant in monitoring and ethically responsible to the shareholders, they are expected to balance between shareholders' current benefit from dividends and firm value addition in the future through investment. Finally, I found that the negative association between generalist CFO and firm dividend is significant only in the firm with a short-tenured CFO as CFO tenure may offset the CFO generalist approach into firm-specific specialist one as suggested in human capital literature.

The study contributes to the literature in several ways. First, this study evidences the effect of generalist CFOs on corporate dividend policies, showing that these effects may go beyond those caused by CEOs and boards. Prior studies have stressed that CEO attributes (Deshmukh, Goel and Howe, 2013; Nicolosi, 2013) and board attributes (Chen, Leung and Goergen, 2017; Ye *et al.*, 2019) significantly influence firm dividend policy. To the best of my knowledge, this study is the first to evident influence of generalist CFOs on firm dividend policy. In this study, I capture CFO experience in a dynamic and comprehensive index based on four dimensions of career experience: (a) the number of organisation types, (b) the number of sectors, (c) the number of firms, and (d) number of roles performed by the CFO. Prior studies on CFO experience and firm policies have defined "experience" in terms of one-dimensional career information (e.g., CFO tenure (Muttakin, Khan and Tanewski, 2019); accounting experience (Chen, Chang and Lee, 2020); international experience (Schmid and Altfeld, 2018). However, my study emphasises multi-dimensional career information to capture the human capital of the CFO.

Second, I explore how CFOs interact with gender diverse boards with dividend policies, with diverse boards having been found to maintain lower risk and persistent employee-friendly corporate policies, as well as encouraging greater diversity in employee teams below the board (Bernile, Bhagwat and Yonker, 2018; Fang, Francis and Hasan, 2018;

Schopohl, Urquhart and Zhang, 2021). Prior study found that female CFOs reduce leverage significantly in firms with diverse boards (Schopohl, Urquhart and Zhang, 2021). The result shows that gender diverse board significantly counters CFO's dividend-cut decision; it provides essential evidence on the significance of female board representation, prescribed in the UK Corporate Governance Code (UK CGC) in 2011 for more robust board monitoring. Furthermore, my dataset provides a unique opportunity to explore such interactions where CFOs are, in most cases, the executive board members (Florackis and Sainani, 2018), and the board positions give UK CFOs more confidence to participate in strategic decisions (Mobbs, 2018) actively.

Finally, this study complements and extends the currently limited strand of literature on managers and their versatile capacity to influence financial decisions. The study augments the growing body of literature on the impact of managerial experience on firm policy and performance, with previous studies including investigations of relationships between top-management team experience and firm strategy as well as performance (Chen and Lai, 2017; Zhang, Wang and Jia, 2022).

The remainder of the study is organised as follows. Section 2 discusses the related literature and the development of the hypotheses. Section 3 describes the data, how I construct my main variables of interest and moderating variables, and presents the summary of descriptive statistics. Section 4 presents my main empirical findings from the analyses, offers probable explanations for the research findings, and deals with the endogeneity issues. Finally, Section 5 presents a conclusion on the findings.

4.2. Related Literature and Hypotheses Development

4.2.1. Generalist Managers and Firm Policy

Upper echelon theory (Hambrick and Mason, 1984) first proposed that managerial traits and experience may influence firm outcomes with respect to both firm performance and strategy choices. Managerial attributes and experience set perspectives regarding honesty and ambiguity tolerance for individual managers, which

in turn influence those managers' choices when solving complex problems, subsequently leading to different outcomes for similar firms (Hambrick and Mason, 1984).

Managerial experience and knowledge build the cognitive abilities that influence strategy preferences inside firms (Carpenter, Geletkancz and Sanders, 2004; Herrmann and Datta, 2006). In the seminal study, Becker (1962) distinguished two types of managers based on diversity of experience: generalists and specialists. Generalist managers have diverse career and industry experience and transferable skills, whereas specialist managers have single-industry or firm-specific expertise. Generalist CEOs accumulate experience from several firm and industry contexts, thereby enhancing their information-processing abilities (Dragoni *et al.*, 2011), reducing firms' communication costs (Ferreira and Sah, 2012), and developing their ability to accomplish complex tasks (Custódio, Ferreira and Matos, 2013). Furthermore, generalist CEOs master firm-specific resources, thereby ensuring their environmental fit (Garicano and Rossi-Hansberg, 2006), improving their relationships with investors (Murphy and Zabojnik, 2007), facilitating recovery from financial distress (Gilson and Vetsuypens, 1993), promoting firm innovation (Custódio, Ferreira and Matosc, 2019), and benefit shareholders (Betzer *et al.*, 2020). Thus, generalist managers tend to have greater strategic relevance (Finkelstein and Hambrick, 1989), and such skills are more valuable at the upper echelons (Custódio, Ferreira and Matos, 2013).

However, in some cases, generalist managers are considered disadvantageous for firms due to their diverse and transferable skills. In particular, generalists enjoy greater mobility (Ma, Ruan, Wang, *et al.*, 2021), which may encourage weaker commitments to their firms' previous strategies (Hambrick, Geletkanycz and Fredrickson, 1993) and engagement in riskier projects (Custódio, Ferreira and Matosc, 2019). This risk-taking can cause additional agency problems for firms (MAY, 1995; Mishra, 2014; Gounopoulos and Pham, 2018). In addition, this career mobility comes at the expense of career specialization (Mishra, 2014), which often means superficial knowledge in various areas and mastery in none (Zuckerman *et al.*, 2002). Thus, generalists may struggle to align current firm resources with the external environment (Wang and Murnighan, 2013) due to their limited firm-specific knowledge (Kang and Snell, 2009) and possible irrelevance in new contexts (Reuber and Fischer, 1997). Furthermore, they

may learn more slowly (Morrison and Brantner, 1992) or provide negative knowledge transfer with high reliance on past cognitive records (Hamori, 2015).

In contrast, specialist managers have better insights into the interrelationships between firm resources and environmental factors (Ma *et al.*, 2021), as they are more efficient in acquiring, assimilating, and integrating knowledge (Brown and Duguid, 1991). They can more easily process information in their relevant fields(Bolton and Dewatripont, 1994). As they have a narrow scope of diverse experiences, they tend to have a narrow range of knowledge. This lack of range compels them to stick with existing firm practices (Geletkanycz and Black, 2001), and they may be unwilling to change firm strategies on questions such as firm dividend policy.

4.2.2. Managerial Attributes and Firm Dividend Policy

Dividend policy has always been an unresolved puzzle for researchers. Following the seminal works of (Lintner, 1962) and Miller and Modigliani (1961), researchers have proposed and examined several theories for dividend policy[18]. These early studies attempted to solve the dividend puzzle primarily with regard to investment opportunities, ownership structure, and cashflow uncertainty (Fama and French, 2002; Chay and Suh, 2009). However, the unexplained variation in dividend models in these studies and the increase in non-paying dividend firms beyond theoretical expectations has left the dividend puzzle ongoing.

In earlier dividend literature, the stylised fact of "sticky dividend" put a perception of stereotyped managerial response to dividend decisions. Managerial surveys on dividends (Lintner, 1962; Brav *et al.*, 2005) have shown that managers strive to maintain current dividends and are unwilling to make cuts (Grullon, Michaely and Swaminathan, 2002), seeking to avoid the negative consequences of such decisions[19] even though dividend

[18] For example, information asymmetry and signaling (Bhattacharya, 1979; Ross, 1977; Fama and French, 2001; DeAngelo, DeAngelo, and Skinner, 1996), agency theory (Jensen, 1986; Easterbrook, 1984; Renneboog and Trojanowski 2011; La Porta *et al.*, 2000; Brav *et al.*, 2005), life cycle theory (Fama and French, 2001; DeAngelo, DeAngelo, and Stulz, 2006)

[19] This extreme preference occurs to avoid negative consequences due to dividend cuts; for example, adverse price reactions (Healy and Palepu, 1988; Benartzi *et al.*, 1997; Jensen *et al.*, 2010), high dropouts in

signalling on firm future earnings is subject to institutional surroundings (Liljeblom, Mollah and Rotter, 2015)

However, recent trends in the literature on the manager and firm policies show that managerial attributes and subsequent risk choices all influence firm dividend policies. Owing to the perception that dividend payments are less risky than new investments c(Caliskan and Doukas, 2015; Bernile, Bhagwat and Yonker, 2018), almost all studies now report that where there are managerial attributes inducing risk aversion, more dividends will be paid, and vice versa. For example, risk-oriented compensation induces CEOs to pay less to investors (Sundaram and Yermack, 2007; Geiler and Renneboog, 2016). Furthermore, risk-averse CEOs pay more dividends regardless of market trends and investor preferences (Caliskan and Doukas, 2015). In addition, risk-taker CEOs need to fund additional risky projects. They may attempt to generate funds internally by decreasing the dividend payments (Minnick and Rosenthal, 2014), postponing them, or not initiating them. Notably, all the studies referenced here focus on CEOs.

A recent stream of literature on the CFO roles suggests that they have a more significant impact on corporate financial policies and performance than CEOs do, exerting influence on the capital structure of the firms (Bertrand and Schoar, 2003), cash holding, and liquidity (Florackis and Sainani, 2018), debt (Mobbs, 2013; Schopohl, Urquhart and Zhang, 2021), mergers and acquisitions (Ferris and Sainani, 2021). In particular, as dividend is a residual finance decision after cash and investment, and empirical findings show strong evidence of CFOs' influence on cash and debt policy, I am inspired to examine the association between CFO and dividend policy. In the existing literature, overconfident CFOs (Ben-David, Graham and Harvey, 2007) and compensation-induced risk-taking CFOs (Ding, Ho and Chang, 2021) are found to pay lower dividends than their counterparts. For example, with CFO equity compensation, Ding, Ho and Chang (2021) investigate the separate and joint effects of CEO and CFO on firm dividend decision over firm lifecycle. They find negative relationship with CEO equity compensation and dividend; however, with joint estimation, CFO equity compensation dominates CEO compensation in case of mature firms. These findings

institutional ownership (Parrino *et al.*, 2003), the threat of CEO firing (Parrino *et al.*, 2003; Schaeck *et al.*, 2012), and less chance for executives to seat on other firms' boards (Kaplan and Reishus, 1990).

lead to the empirical question of whether CFOs' attitudes to risk, as developed through their experiences, impact their dividend decisions. Empirical studies have demonstrated a significant impact of role-specific experience (accountant CFOs are risk-averse (Hoitash, Hoitash and Kurt, 2016) and exogenous, event-specific experience (distress-experienced CFOs are risk-averse (Dittmar and Duchin, 2016)[20], but the impact of the CFO's range of experience is yet to be explored.

4.2.3. Moderating Role of Board Gender Diversity

Through the lenses of the theory of planned behaviour (Ajzen, 1991) and the concept of social influence (Cialdini and Goldstein, 2004), I may argue that manager is constrained by the common practice and social set up of their surroundings. The risk-taking behaviour of generalist CFOs could be affected by the presence and the behaviour of strong monitoring of the female directors. Independent directors may suggest lower cash dividend in case of principal to principal associations inside firms (McGuinness, Lam and Vieito, 2015), whereas the empirical evidence is different (Bradford, Chen and Zhu, 2013). Furthermore, prior studies show that female directors may directly influence firm dividend policy. Thus, I aim to observe that how female director moderates negative association between firm dividend policy and the generalist CFOs.

Board gender diversity assists corporate governance and consequently promotes firm dividend payouts with sufficient cash (Chen, Leung and Goergen, 2017) towards shareholders. However, impact of board gender diversity on firm dividend policy may be less visible in the firms with good institutional environment as these firms have established practice on monitoring firm managers for free cash flow entrenchment (Ye *et al.*, 2019). Board diversity leads to better and less volatile firm performance by adopting more consistent and less risky financial strategies. Firms with diverse board

[20] For example, based on the logical inference that accountants are risk averse, accountant CFOs are found to investment low in R&D and capital expenditures and are less likely to engage in external financing (Hoitash, Hoitash and Johnstone, 2012).

tend to invest more in research and development (R&D) and their innovation process are also efficient compared to less diverse board (Bernile, Bhagwat, and Yonker, 2018).

Highly diverse boards to nationality, age, and gender of directors affect the quality of advice and strategic decision-making processes(Hoogendoorn, Oosterbeek and Van Praag, 2013). A diverse board can effectively undermine social barriers (Fang, Francis and Hasan, 2018) and encourage an inclusive decision-making environment. Further, a diverse board promotes creativity and remain flexible to new ideas that been brought to the boardroom, making it highly likely to accept strategic changes and less likely to group thinking (Gompers, Mukharlyamov and Xuan, 2016). UK-firm CFOs are mostly board members (Florackis and Sainani, 2018); CFOs' relationship with the other board members can affect their influence to change existing policies. The inclusive nature of a highly diverse board may grant CFOs more significant influence over dividend choices.

4.2.4. Hypotheses Development: Generalist CFOs and Firm Dividend Policies

Following the UET and agency theory, my expectations of generalist CFOs' contributions to dividend decisions come from two literature strands. First, the dividend decision is a residual financial decision after cash and investment decisions. The existing literature reports a significant influence of CFOs on cash (Florackis and Sainani, 2018) and investment (Ferris and Sainani, 2021). However, the CFO's influence on dividends is yet to be explored. Second, the literature shows that managerial risk attitudes affect firm dividend policy (e.g., (DeAngelo, DeAngelo and Skinner, 1996; Ben-David, Graham and Harvey, 2007; Deshmukh, Goel and Howe, 2013), as dividends are a conservative financial decision in contrast to investment policy (Caliskan and Doukas, 2015; Bernile, Bhagwat and Yonker, 2018)[21]. Managerial risk attitudes developed from generalist experience are also likely to influence dividend decisions: in effect, the more diverse the CFO's experience, the more risk-taking their attitude is likely to be (Custódio, Ferreira and Matos, 2013).

[21] An alternative explanation of divided being a risky choice is that dividend decreases the cash holding set aside for precautionary motive, thereby making dividend policy a risker alternative (Saeed and Sameer 2017); this proposition is less supported in the literature.

Given that a higher dividend payment is a safer choice – and managerial risk preferences could partially influence firms' dividend decisions – I expect more-generalist CFOs, who are more likely to have risk-taking attitudes regarding changes in firm strategy, will pay lower dividends than other, less-generalist CFOs. Thus, the first hypothesis is as follows:

H1. Firms with more-generalist CFOs have lower dividend payouts than firms with less-generalist CFOs.

In contrast, if CFOs were behaving as regular managers and attempting to avoid dividend cuts, I expect firms run by more-generalist CFOs not to differ from firms run by less-generalist CFOs in their respective dividend decisions.

Furthermore, I argue that the managerial discretion of CFOs will influence dividend decisions, as the CFO is a top-management team member holding a highly monitored position.[22] Under the CEO and the board of directors. If the CFOs' discretion is restricted either by CEO or the board, CFOs' preferences will not be reflected in corporate policies (Quigley and Hambrick, 2015). I address this CFO managerial discretion issue in several ways. First, I address the CEO influence issue by (1) including the CEO Chair Dummy in my baseline analysis model following CEO dominance theory and (2) subsample analyses on CEO absolute and relative power based on CEO pay Rank and CEO-CFO Co-option based on principles of reciprocity from social exchange theory, respectively. CEO Pay Rank is a dummy variable that indicates one if the CEO is among the Top 3 paid board of directors which proxy for CEO power and zero otherwise. CEO-CFO Co-option is a dummy variable to indicate whether the CFO is Recruited by the CEO, indicating relative power dynamics between CEO and CFO.

Furthermore, following the resource dependency theory and gender based social role theory, I address board influence by utilizing board diversity measures as the moderation variables in analysis models. A board's diversity with respect to the nationality and gender of its directors will affect the quality of its advice and the

[22] Dividend payment is perceived as a board governance tool for addressing agency problems in two ways. First, dividend reduces free cash flow in the firm and prevents managers from pursuing a private interest and suboptimal investments (Fama, 1980; Chae *et al.*, 2009). Further, with lower cash, managers are forced to raise external capital if needed and exposed themselves to outside investors' monitoring and regulation (DeAngelo and DeAngelo, 2006; Rozeff, 1982; Easterbrook, 1984; Jensen, 1986).

processes of its strategic decision-making (Hoogendoorn, Oosterbeek and Van Praag, 2013). This diversity will also overcome social barriers (Fang, Francis and Hasan, 2018) and encourage an environment of inclusive decision-making. Since a diverse board promotes creativity and flexibilities towards new strategies, such a board is more likely to implement strategic changes and less likely to engage in group thinking (Gompers, Mukharlyamov and Xuan, 2016). Additionally, CFOs in UK firms are typically board members (Florackis and Sainani, 2018); thus, interactions with other board members can significantly affect the CFO's say on existing policies. Prior studies report positive associations between dividend payments and gender diversity(Chen, Leung and Goergen, 2017; Ye *et al.*, 2019). More specifically, gender diversity facilitates corporate governance, consequently increasing dividend payouts (Ye *et al.*, 2019). On top of that, Female presence on board is associated with significant progresses in the deal and terms of acquisition, post merger firm performance, reduction in value destructive investments and lessen business risk in firms with overconfident CEOs (Banerjee, Masulis and Upadhyay, 2018; Chen *et al.*, 2019). Considering the gender differences observed in economic behaviours (Croson and Gneezy, 2009) and women's preference for rigorous monitoring roles (Adams and Ferreira, 2009) and higher risk aversion (Faccio, Marchica and Mura, 2016; Bernile, Bhagwat and Yonker, 2018) in firm governance, I posit following hypotheses:

H2a. Highly gender diverse boards intensify dividend cuts in firms with more-generalist CFOs.

H2b. Highly gender diverse boards rectify dividend cuts in firms with more-generalist CFOs.

4.3. Data and Method

4.3.1. Data

This study used a panel dataset of nonfinancial companies listed on the LSE from 1999 to 2019. The study period was restricted due to the availability of data. Following prior studies on CFOs (Florackis and Sainani, 2018; Schopohl, Urquhart and Zhang, 2021),

nonfinancial firms were preferred, as they are perceived to use dividends as a management-monitoring tool, whereas financial firms are already burdened with strict regulation and have no need to use dividends for this purpose. I used the BoardEx database to collect information on company managers and directors. Since UK firms do not uniformly maintain the CFO title, I followed Florackis and Sainani (2018) to identify CFOs based on the data item "individual role," and I focused on the following labels: "CFO, chief financial officer, finance director (FD), group finance director (GFD) and executive director (finance)."[23]. Other firm-level data were collected from Refinitiv DataStream Eikon. The final sample consisted of 1,608 unique firms and 2,948 unique CFOs.

4.3.2. Methodology

To explore how generalist CFOs might affect firm dividend policy, I began by seeking to identify the generalist CFOs. I defined "generalist CFO" as a continuous variable, using factor analysis (FA) with four diversity dimensions of CFO experience: (1) the number of organisation types, (2) the number of sectors, (3) the number of firms, and (4) number of roles in which the CFO had worked on a cumulative yearly basis. Information regarding the CFOs' experience was collected from their BoardEx employment profiles. The higher the first-factor score, the more variety in experience and the more generalist the CFO. FA helped us to combine the various experience information into a composite index. This first factor reduced the multicollinearity problem and measurement errors and enhanced the power of the regression tests.

Regarding the experience information-selection criteria for the generalist CFOs, I am inspired by (Custódio and Metzger, 2014)[24]. The CFO index differed from that of Custódio and Metzger (2014) concerning the choice of managers (CFOs versus CEOs)

[23] In contrast with the US firm, the UK firm has distinguished positions for CFO (or Finance Director) and treasurer; UK CFO usually sits on the board as a member and has full control of finance, whereas the treasurer runs the treasury department as head and reports to CFO directly (source: The Treasurer 2001)

[24] Custódio and Metzger (2014) compute a "General Ability Index" in their study on "Financial Expert CEO and Firm Financial Policies." Custódio and Metzger (2014) consider five aspects of a CEO's professional career to measure the general ability index: past number of (1) positions, (2) firms, and (3) industries in which a CEO worked; (4) whether the CEO held a CEO position at a different company; and (5) whether the CEO worked for a conglomerate.

and the variety in the managers' experiences. Moreover, I used the dynamic CFO index as a yearly continuous variable to represent whether the CFO was more or less generalist. In contrast, Custódio and Metzger (2014) identified a generalist CEO using a dummy variable, showing one if the index score was greater than the median yearly score (or 0 otherwise). In addition, the generalist-CFO measure is unique in CFO literature as most studies have used CFO tenure (Sun and Rakhman, 2013) as a proxy for time-variant experience measures. Furthermore, previous studies have represented a variety of experiences from several industries and firms (Li and Patel, 2019). In contrast, I captured the number of organisation types, sectors, firms, and roles in the composite index.

To test H1, I employed Equation (1) as follows:

$$Dividend_{it} = \alpha_0 + \beta_1 * Generalist\ CFO_{it} + \theta' X_{it} + FirmFE + YearFE + \varepsilon_{it} \quad (1)$$

The dependent variable, $dividend_{i,t}$, is the dividend payout ratio, measured as the ratio of dividend per share to net income before extraordinary items (Attig *et al.*, 2016), multiplied by 100 (DataStream item code WC09504) in the main models[25]. As discussed above, the primary variable, Generalist CFO_{it}, was constructed using FA to combine the four aspects of the CFO experience. X_{it} is a vector of the control variables from three categories: *firm-level controls* (Lintner, 1962; Fama and French, 2002; Al-Najjar and Kilincarslan, 2016), such as *firm size, firm age, market-to-book ratio, return on asset (ROA), liquidity, cashflow, cashflow volatility, intangible assets, leverage ratio*, and *governance controls* (Florackis and Sainani, 2018), such as *board size, board independence,* and *CEO-Chairman dummy, institutional and CFO controls* (Schopohl, Urquhart and Zhang, 2021). The latter includes *CFO Age and CFO Female.* All independent variables are at time t, indicating that they are in the same year as the dependent variable, as the model captures managerial behaviours regarding firm policy (Ataullah, Vivian and Xu, 2018). The model also includes firm and year fixed effects (FEs). Furthermore, I wished to understand the effect of generalist CFOs on firm

[25] I use a second measure, dividend yield, in the robustness check. The second measure, dividend yield, is calculated as the dividend per share to price per share (Al-Najjar and Kilincarslan, 2016; Byoun, 2016; Bradford *et al.*, 2013). Results are similar to baseline estimations

dividend policies when moderated by board gender diversity. To measure gender diversity, I used the "Blau diversity index" (Blau, 1977)[26], in line with prior studies (Francisco Martín-Ugedo and Minguez-Vera, 2014).

To test H2, I employed Equation (2), and Equation (3), as below:

$$Dividend_{it} = \alpha_0 + \beta_1 * Generalist\ CFO_{it} + \beta_2 * Board\ Gender\ Diversity_{it} + \beta_3 * CFOIndex * Board\ Gender\ Diversity_{it} + \theta' X_{it} + FirmFE + YearFE + \varepsilon_{it} \quad (2)$$

For robustness, I also use two other proxies for measuring female representation on board. Those are the total number of female members and the ratio of female members on board.

Table 4.1 provides the variable definitions and key descriptive statistics. All financial variables were winsorised at the 1st and 99th percentiles to minimise the potential effect of outliers and/or coding errors. The table reports the number of observations, the means, the standard deviations, the minimum, quarter 1, quarter 2 (the median), quarter 3, and the maximum of the variables used in this study. The average CFO has worked in more than one type of organization and more than one sector. On average, the CFOs had worked for more than three firms and in more than three roles. This variety in firms and roles mainly contributed to CFO generalist experience. The average CFO was 47 years old, and their average payment was 72.8% of a CEO's. The mean dividend payout ratio was 26.91%. The average firm in the sample has total assets of £1,173 million and had a market capitalization of £1,675 million, a market-to-book ratio of 0.51, and a leverage ratio of 16.65%. The board-level data showed that the average board in the sample comprised 6.8955 directors, well-balanced between executive and non-executive directors (an average board-independence ratio of 52.84%). The values for the CFO variables were consistent with those of relevant CFO studies,

[26] BLAU=1−$\sum_{i=1}^{n} Pi\hat{}2$; where P_i refers to the percentage of female members on the board. The values fluctuate between 0 and 0.5, at which the same percentage of, for example, female and male board members and thus male diversity is maximized (Blau, 1977).

such as Florackis and Sainani (2018), Ferris and Sainani (2020), and Schopohl, Urquhart, and Zhang (2021).

[Insert Table 4.1]

Table 4.2 (Panel A) presents the results of the factor analysis (FA) of the four experience dimensions of CFOs, which yielded one (first) factor with an eigenvalue of greater than one[27] This factor explains 95.11% of the total variance in the data sample and has an eigenvalue of 1.97. The factor loadings of each variables are also presented in Table 4.2. All four experience variables have positive association with computed first factor, the index to indicate generalist CFO as per the expectation. In Panel B (Table 4.2), I present the correlation matrix of the CFO experience variables and show moderate positive association among most of these variables. For instance, the moderately strong correlation between the number of sectors and the number of roles indicates that CFOs who have worked in different sectors are more likely to work in different roles. This correlation pattern justifies using FA to construct the CFO index, as FA simplifies and orders several interrelated variables into a one-dimensional factor.

[Insert Table 4.2]

A Pearson's pairwise correlation analysis for generalist CFO and explanatory variables is reported in Table 4.3. All independent variables have a significant association with dividends which justifies my selection of variables for the estimation. Finally, the coefficients of board gender diversity with dividend ratio are positive and significant, which primarily validates my expectation that female directors will have moderating roles on firm dividend policy. These univariate results open the scope for further research on generalist CFOs, firm dividend policy, and the moderating role of board diversity. The correlation coefficients between the independent variables are not very high, which suggests that the models are free from multicollinearity.

[Insert Table 4.3]

[27] An eigenvalue greater than one is an indication of extracted factor value has more explanatory power than any other variables by itself which have been used to calculate the factor.

4.4. Empirical Results

4.4.1. Generalist CFOs and Firm Dividend Policies – Baseline Results

In line with Custódio, Ferreira and Matos (2013), Custódio, Ferreira and Matosc (2019), Ben-David, Graham, and Harvey (2007), and Ding, Ho, and Chang (2021), and following the UET and agency theory, I investigated how generalist CFOs affected firm dividend policies, as the generalists are perceived as risk-takers. Generalist CFOs are my primary variable of interest, and I identified these using the first-factor score for CFO experience, then employed Equation (1) to investigate the relationship. The dependent variable was dividend per share, as a proxy for dividend payment level. Furthermore, I explored how generalist CFOs affected dividends in firms with diverse boards, using Equations (2). I retained standard errors clustered at the firm level in each model to account for within-firm correlations. Furthermore, I used firm and year FEs for all models.

Table 4, Model 1, presents the regression results for the relationship between generalist CFOs and firm dividend payments. As proposed in *H1*, the result supports a negative association between generalist CFOs and dividends. The results suggest that firms with generalist CFOs (i.e., high values on the CFO index) pay lower dividends than their counterpart, *ceteris paribus*. This result supports *H1* and the argument of Custódio, Ferreira and Matosc (2019) that generalists take more risks, as dividend payments are perceived to be more risk-averse than investments (Caliskan and Doukas, 2015; Bernile, Bhagwat, and Yonker, 2018). Interestingly, none of the CFO-level control variables were significant, and the effect of the CFO on the dividends was due only to the diversity of experience. In addition, the governance controls were found to be insignificant in this model.

Regarding firm-level controls, as predicted by firm lifecycle theory, *firm age* had a significant positive impact on the firm dividend; mature firms paid more dividends than newer firms (DeAngelo, DeAngelo, and Stulz, 2006). *The market-to-book value of asset*s significantly negatively impacted dividends, as firms with growth opportunities tended to save internal funds for investment (Rozeff, 1982) and avoid costly external financing. *Cashflow uncertainty* significantly negatively impacted dividends, as firms with

uncertain cashflow were less likely to commit to sticky expenses such as dividends (Bates, Kahle and Stulz, 2009). Finally, *firm size* had a significant positive impact on the firm dividend; that is, the large firms paid higher dividends (Fama and French, 2002). This was due to their longer lifecycles (Fairchild, Guney and Thanatawee, 2014), higher financial ability, and lack of constraints (Banerjee, Masulis and Upadhyay, 2018). These findings indicate that, in the sample, the large and mature firms with fewer investment opportunities and less cashflow uncertainty – paid higher dividends than others.

[Insert Table 4.4]

In the next stage, I investigated whether board diversity moderated the dividend decisions proposed by generalist CFOs. Accordingly, I ran the interaction terms for generalist CFOs and board gender diversity. I define female board representation as the total number of female directors, the ratio of female directors, and the board gender diversity in Models 2, 3, and 4, respectively. The results were significantly negative in all three models, and the coefficients of the main variables were slightly higher than those of Model 1. These results suggest that diverse boards give more room for generalist CFOs by accepting strategic changes and avoiding group thinking over sticking to specific policies (Gompers *et al.*, 2016).

I expect a diverse board to significantly strengthen the negative association between generalist CFOs and dividend decisions. Interestingly, the board gender diversity interaction term with generalist CFO indicated a significant positive association with firm dividend payments, thus supporting *H2*. The gender diversity literature indicates that female presence on a board is associated with higher dividend payments.[28] The following argument may explain this contrast with the findings: board gender diversity significantly increases dividend payments only for firms with weaker governance, suggesting that women use dividends as a governance device (Chen *et al.*, 2017). Literature on board gender diversity suggests that firms with more female directors are well-governed (Adams and Ferreira, 2009; Schwartz-Ziv, 2017) and have enhanced

[28] Board gender diversity can encourage the payment of corporate dividends and higher payout ratios (Levit and Malenko, 2016; Li and Srinivasan, 2011; Wintoki *et al.*, 2012). Chen *et al.*'s (2017) study of US-listed companies finds that firms with more female independent directors issue larger dividends.

internal controls (Abbott *et al.*, 2012; Y. Chen *et al.*, 2016). Female directors are likely to reduce excess free cash flow through dividend in order to reduce agency costs (Chen *et al.*, 2017) and preserve lower information asymmetry (Gul *et al.*, 2013; Nadeem *et al.*, 2019). It appears that gender-diverse boards tend to strike a balance between monitoring and nurturing generalist CFOs for the firm's dividend policy. In addition, similar to Model 1, in the interaction models, the coefficients for firm-level variables are consistent with the findings of prior studies.

As dividend payout practice might very among industries, I also run the baseline models with the industry and year fixed effect; the results are similar, that is, generalist CFOs have tendency to cut down dividends whereas gender diverse board moderates such decision with significant positive interaction term.

4.4.2. CFO attributes

My results so far show that generalist CFO and firm dividend have a negative association. Our baseline model has two CFO level control variables, CFO Age and Female CFO; none significantly impact the firm dividend level. As a generalist CFO is a quantitative experience-based measure of CFO impact concerning variety; other potential CFO attributes in experience might have unique settings for CFO's impact on dividend policy. Thus I have two sub-sample based on two CFO attributes, (1) CFO Tenure, a dummy variable indicates one if the CFO Tenure in the firm is above the yearly median CFO tenure in the sample, and 0 otherwise. The higher the tenure, the more prominent the CFO influence, and (2) CFO Pay Rank, a dummy variable, indicates one if the CFO is among the top 3 paid board of directors or zero otherwise.

With longer tenure, even generalist CFOs increase their context-specific knowledge of the environment and the organisation and become specialists in their current firm. Furthermore, CFO tenure is the most widely used proxy for CFO experience (Matsunaga and Yeung, 2008; Sun and Rakhman, 2013), reflecting one-dimensional CFOs' experience in their current firms. Thus, I expected CFO tenure to be a significant mediating factor (Li and Patel, 2019) for alleviating the negative association between generalist CFOs and firm dividend policies. I argued that high-tenured CFOs, being specialists in their firms, would behave as risk-averse managers and thus pay higher

dividends – or at least stick to their firm's current policy (Hambrick *et al.*, 1993). To test the hypothesis, I ran subsample analyses of firms with low- and high-tenured CFOs and estimated similar models to the baseline in Table 4. I identified CFOs as low-tenured if their tenure was below the yearly median of the full sample. The results are presented in Table 4.5.

[Insert Table 4.5]

Panel A Table 4.5 shows that generalist CFOs paid significantly lower dividends in firms with low-tenured CFOs, whereas the effect on firms with high-tenured CFOs was insignificant. The results suggest that longer CFO tenure allows generalist CFOs to fit more closely to the environment of their current firm, supporting their transition towards greater specialism, which is reflected in their decisions on dividend payments. The board gender diversity interaction term was not significant for any group of CFOs. Other control variables had similar results to the baseline models in Table 4. These findings highlight the real-life trend of CFO appointments, with 80.5% of CFOs being externally recruited and 61.5% coming from previous CFO roles[29]An external appointment benefits a generalist, while a previous role in a similar capacity brings the benefit of a specialist to the current firm.

Furthermore, Panel B of Table 4.5 show that generalist CFOs have a significant negative association with dividend only in the firms with positive pay rank CFOs. Compensation has been widely used in prior studies as a proxy of managerial power; the higher the compensation, the more influence the manager has on firm policies. Thus, I find significant CFO influence in highly paid cases. Furthermore, with respect to monitoring by female board representation, the interaction terms between generalist CFOs and gender diversity are positive and significant only in cases where generalist CFOs are significantly cutting the dividend.

Based on the baseline and univariate analysis results, I found the generalist CFOs significantly reduced firm dividends. The sample's average dividend payout ratio was 24.47%, indicating that generalist CFOs had an economically significant effect, lowering

[29] Source: Eton Bridge Partners (2021). 'CFO Pathways Report', https://etonbridgepartners.com/cfo-pathways-2021/

dividends by an average of more than 5.05% (= − 1.24/0.2447) compared to other CFOs. These results suggest that the CFO effect on dividends differs from the potential direct effects of board gender diversity on dividend choices. Similarly, none of the other CFO characteristics has a statistically significant link to dividends. The evidence in Table 4.4 and Table 4.5 suggests a strong negative association between generalist CFOs and the level of dividends.

4.4.3. CEO Power

The findings suggest that generalist CFOs significantly influence firm dividends. A potential concern is that there might be some firms in my sample where the CEO is in central decision-making power (Adams, Almeida and Ferreira, 2005) and affect dividend decisions. In that case, the CEO's delegation of control over decision-making depends on firm characteristics and the CEO's knowledge and expertise on policy (Graham, Harvey and Puri, 2015). Furthermore, according to principles of reciprocity from social exchange theory, CFO might feel indirect pressure from the recruiting CEO to propose the financial decisions which are top-up for CEO's desire. Following managerial discretion theory, CEO dominance and social exchange theory, I attempt to check whether generalist CFOs have moderate flexibility to generously decide on firm dividend policy while considering the presence of CEO power/dominance.

I conduct subsample analyses to understand to the extent of CEO's influence on the CFO's dividend proposal. Based on the CEO dominance hypothesis, I expect the negative association between generalist CFOs and the firm dividend to be less evident if the CEO dominates or stringent to delegate financial responsibility to their CFOs. I split the sample accordingly into subsamples based on CEO power. Table 4.6 Panel A and Panel B shows the regression results, respectively.

[Insert Table 4.6]

In Panel A Table 4.6, I use CEO-CFO Co-option to understand the relative power of the CEO in terms of reciprocity. CEO-CFO Co-option is a dummy variable that indicates whether the CEO was in the firm before the CFO was recruited. I expect that CEO is dominant when the CEO recruits CFO. The results show that a generalist CFO

has a significant negative association with firm dividend policy if CFO is not co-opted with the CEO. That is, CEO joins the firm after the CFO recruitment. Furthermore, concerning monitoring by female board representation, the interaction terms between generalist CFOs and gender diversity are positive and significant only in cases where generalist CFOs are significantly cutting the dividend.

Additionally, in Table 4.6 Panel B, I split subsamples of firms with CEO Pay Rank, a dummy variable indicates one if the CEO is among the top 3 paid board of directors or zero otherwise. The higher the compensation, the more powerful CEO is in exercising influence. Compensation has been widely used in prior studies as a proxy of managerial power; the higher the compensation, the more influence the manager has on firm policies. Thus, I find significant CFO influence in highly paid cases. Furthermore, with respect to monitoring by female board representation, the interaction terms between generalist CFOs and gender diversity are positive and significant only in cases where generalist CFOs are significantly cutting the dividend.

Furthermore, based on power circulation theory and false consensus theory, I test whether firm dividend policy is driven by a generalist CEO rather than a generalist CFO. I include generalist CEO (constructed using a method similar to how I have calculated generalist CFO) into my main models from Equations (1) and (2). In all these models, generalist CFOs have a significant negative relationship with the firm dividend policy, whereas generalist CEO has no significant influence on firm dividend policy. This evidence shows that a generalist CFO has significant explanatory power to firm dividend policy compared to a generalist CEO.

In addition, based on the false consensus effect theory, I expect that firm dividend cuts by generalist CFO will be intensified when both the CEO and CFO are generalists. Also, in another model, I utilize interaction terms between the generalist CEO and the generalist CFO to observe the relative influence on firm dividend policy. The variable of the interest interaction term is insignificant, which suggests that generalist CFO has a standalone influence on firm dividend decisions irrespective of CEOs' generalist experience.

In summary, these results could not reject the CEO dominance hypothesis and imply that the generalist CFOs impact on firm dividend policy that I present in this study is conditional on powerful CEO in the firm.

4.4.4. Channel Analysis

The results show that more-generalist CFOs pay lower dividends than their counterparts, and gender diverse board moderates such dividend cut decision. I attribute these outcomes to generalists being more likely to take risks and pay lower dividends because this is more risk-averse than engaging in new investments. In other words, generalist CFOs pay lower dividends to keep more internal funds for utilizing in overinvestment. To test this hypothesis, whether generalist CFO cut the dividend to hold more cash, I subsampled the firms based on the internal financing deficit of the firm.

Firm financing status revealed the generalist CFOs' motives for paying less dividends. The literature shows that overconfident managers (risk-takers) engage in overinvestment only when internal funds are available; otherwise, they underinvest, perceiving external funding as costly (Malmendier and Tate, 2005; Aktas, Louca and Petmezas, 2019). Prior studies present that, during financial crisis, UK firms increased internal finance use and deferred dividend payment to manage firm financial policies effectively (Akbar et al., 2017). I subsampled the firms based on whether they faced financing deficits on a yearly basis. These deficits were measured using Equation (6) below (Shyam-Sunder and Myers, 1999). The financing deficit dummy variable was equal to one if the value of the financing deficit in Equation (6) was positive and zero otherwise. Table 4.7 presents the subsample analyses.

$$Financing\ Deficit_{it} = (Dividend\ paid\ to\ common\ shareholders_{it} + Capital\ expenditure_{it} + Change\ in\ net\ working\ capital_{it} - Free\ Cashflow_{it}) / Total\ Asset_{it} \quad (3)$$

[Insert Table 4.7]

The regression analyses in Table 4.7 show that generalist CFOs paid significantly lower dividends in firms with financing deficits. This finding indicates that these CFOs are

attempting to retain cash, thus avoiding the need for costly external financing of investment. The interaction term with board age diversity and generalist CFOs was negative. However, the board gender diversity interaction terms are significant only in case of low financing deficit; this result indicates that female representation in the board monitors managers in the best-fit context. A firm with a low deficit should pay more dividends, whereas a firm with a high deficit should be encouraged to hold cash, even through a dividend cut. The significant firm control variables (firm age, market-to-book value ratio, cashflow uncertainty, and firm size) had associations with dividends in the expected directions. My overall results support the hypothesis that more-generalist CFOs pay lower dividends to engage in overinvestment as a risk-seeking strategy than other less-generalist CFOs.

4.4.5. Endogeneity Concerns

Equations (1) and (2) may suffer from potential endogeneity issues, as my estimations assume that the presence of a generalist CFO is exogenous factor in the prediction model. However, the selection of the CFO can be endogenous, depending on the firm's recruitment preferences and the interest of such candidates in joining the firm. An ideal research design requires the random assignment of two groups of firms - treatment and control, which was not viable in this study context. Thus, I applied the *instrumental variables (IV) approach, propensity score matching techniques, and CFO Transition (from less generalist to more generalist) approach* to address this question. The findings provide strong indicative evidence on whether the association between generalist CFOs and firm dividend is causal in nature.

4.4.5.1.The Instrumental Variable (IV) Approach

For the *instrumental variable* approach, I needed an instrument that satisfied the two significant criteria, relevance (i.e., correlated with the generalist CFO) and exclusion (i.e., no direct effect on the firm dividend payment, except through the generalist CFO) from both theoretical and practical perspectives, as advised by Larcker and Rusticus (2010). I used three instrumental variables to measure the scope of opportunities for

generalist CFOs' diverse capacity-building through direct and indirect learning. First, I used the dummy variable *MBA top rank* to capture whether CFOs had MBA degrees from top-ranked universities (defined as Ivy League, Russell Group, or Top-25 institutions; (Datta and Iskandar-Datta, 2014)), using the world university rankings from the 2018 Times Higher Education (THE). I expected that CFOs with MBA degrees from top universities would have more opportunities for versatile learning and, thus, more diverse careers. Second, I used *network size* (i.e., the number of networks the CFOs participated in with other directors, as reported in the BoardEx database). CFOs are highly likely to be benefited from positive "externalities" and spill-overs from their expert professional networks (Dichev *et al.*, 2015).

Furthermore, informal conversations within a network can assist work-specific human capital by transferring and exchanging knowledge from one professional expert to another (Carpenter, Geletkancz and Sanders, 2004; Inkpen and Tsang, 2005). Thus, I expected that the more connections a CFO had, the more diversified their knowledge and contributions to their firm would be. Finally, I use *CFO foreign*, a dummy variable that indicates if the CFO has foreign nationality, foreign university degree, foreign career experience, or otherwise. Prior studies suggest that working abroad provides CFOs with valuable knowledge and skills, which increase compensation; however, staying abroad for too long has an adverse effect due to losses in social network ties (Schmid and Altfeld, 2018). All instruments theoretically satisfied the critical requirements, relevance and exclusion; thus I could not identify any economic reasons other than the CFOs for an association between dividends and the top-ranking university dummy, network size, or foreign CFO. The results are reported in Table 4.8.

[Insert Table 4.8]

Generalist CFOs were instrumented using the dummy variables *MBA top rank, CFO network size, and CFO foreign.* In the first stage, Model 1 of Table 8. A significant positive relationship between generalist CFOs and the instruments, as well as the endogeneity test results, indicate the validity of the instruments in the IV model. As expected, in the second stage, Model 2 and Model 3 of Table 8, I found that instrumented generalist CFOs were significantly negatively associated with firm dividend policy. Furthermore, the interaction term between generalist CFO and board

gender diversity has a significant positive association with firm dividends similar to baseline models. I presented the Cragg-Donald Wald F statistics for a weak instrument test at the end of the second stage regression; the F-test value is above the critical/cut-off value which indicates to reject the null hypothesis of weak instrument; thus my instruments are not statistically weak (critical value criteria is proposed by Stock *et al.*, 2001).

Furthermore, I reported the under-identification test (Anderson canon. correlation LM statistic) and rejected this null hypothesis. The relationships for the other control variables are similar to that of the baseline model reported in Table 4; for example, CFO Age is significant in second-stage models, which is not significant in baseline models. Thus, the negative association between generalist CFOs and dividend payments is unlikely to be driven by endogenous concerns.

4.4.5.2.Propensity Score Matching (PSM)

I utilize a propensity score matching (PSM) procedure proposed by Rosenbaum and Rubin, (1983) to address the endogenous CFO-firm matching issue. PSM method supports comparison between mean dividend payment of two groups of firms that are comparable in terms of firm features except for one group with more generalist CFOs and the other with less generalist CFOs. This process helps to isolate the generalist CFO effect on firm dividend policy. I implement the process in two stages; first, I utilize logit model (logistic regression) to calculate the propensity of the firm having a more generalist (generalist CFO score is more than the yearly median score) with firm-level control variables used in baseline models in Table 4. Next, I utilize the calculated score of the propensity scores matching between firm pairs- one with more generalist CFO and other similar firm with less generalist CFO by using the nearest-neighbour matching technique without replacement (as recommended by Leuven and Sianesi, 2018). Table 4.9 presents the regression results.

[Insert Table 4.9]

In Panel A of Table 4.9, I present covariate balance test results, which assess whether the average covariates mean differences in firm characteristics between treatment (firms with more generalist CFO) and control firms (firms with less generalist CFO) are statistically significant or not. The results suggest that most variables' mean differences are insignificant; This findings evident that the two sub-samples, treatment and control, are similar with respect to firm-level variables that been used in the logit model. Finally, I run the models corresponding to Equations (1) and (2) for only matched firms through propensity score matching. The results show a negative association between generalist CFOs and firm dividends, and all other control variables show similar outcomes to those in baseline models. Overall, these findings alleviate possible concerns that the finding of a negative association between generalist CFOs and firm dividends is due to sample selection bias.

4.4.5.3.CFO transition

To isolate the CFO effect on dividends, I observe CFO transition, that is, change in CFO through a new appointment from less generalist CFO to more generalist CFO (or vice versa) and subsequent change in firm dividend policy. Due to the limited number of pure exogenous cases (sudden death of CFOs), I have to run a subsample analysis of firms, where firms with more generalist CFO from less generalist is the treatment group and firms with less generalist CFOs from more generalist are in the control group. I expect a decline in dividends for the treatment group compared to control groups that are similar regarding firm size, return on asset, the same year, and industry. Further, I expect the interaction term of post and CFO turnover (change in CFO) to be significantly negative; here, post is a dummy variable indicating one onwards if the firm recruits more generalist CFO and 0 otherwise, and CFO Index turnover is another dummy variable indicating one if the firm has CFO transition from less to more generalist CFO and 0 otherwise. More specifically, once the post variable indicates one due to a new CFO appointment, onwards it will show 1 to imply treatment (having a more generalist CFO in Panel). In contrast, CFO turnover will change its value corresponding to each new appointment. Table 4.10 presents the regression results.

[Insert Table 4.10]

Panel A of Table 4.10 show the results for the pre-turnover period. I do not find any significant difference in mean dividend between the treatment and control firms, suggesting those firms have similar dividend payout ratios on average before the appointment of more generalist CFOs. As mentioned earlier, I match both groups with propensity score matching (PSM) for their firm size, return on assets, same industry, and same year. Panel B of Table 4.10 presents the regression results with firms that experience a transition from less to more generalist CFO, or vice versa, as only those firms meet identification criteria. As expected, my results show treated firms, that is, firms with more generalist CFOs, are paying less dividends compared to the control group as the interaction of post and CFO turnover is significantly negative. In line with the results in Baseline models, board gender diversity positively moderates generalist CFO and firm dividend policy. For brevity, I keep the relevant results only. All the control variables have similar outcomes compared to the baseline models in Table 4.4.

4.4.6. Other Robustness Check

4.4.6.1.Alternative Definition of Dividend Payment

For robustness check, I estimate the baseline models in Table 4.4 with an alternative definition of firm dividend payment, that is, dividend yield. The dividend yield is calculated as dividend per share divided by year end stock price. The results are presented in Table 4.11 Panel A.

[Insert Table 4.11]

Table 4.11 Panel A shows the regression outcome on the association between dividend payout and generalist CFO. For both models, generalist CFO is negative and significantly related to firm dividends. Board gender diversity has a significant positive association with the firm dividend policy. In contrast, I could not find any impact of interaction terms of generalist CFO and board gender diversity similar to my baseline.

4.4.6.2.Four dimensions of CFO generalist experiences

I constructed generalist CFO as the first factor from factor analysis of four experience dimensions of CFOs: number of organization types, number of sectors, number of firms, and number of roles. Thus, I run regression on firm dividends with individual experience dimension to understand which contributes more towards a negative association between generalist CFO and firm dividend policy. Table 4.11 Panel B presents the results.

Table 4.11 Panel B shows that among the four dimensions of CFO experience, the number of sectors, firms, and roles have a significantly negative association with firm dividend level where. In contrast, the number of organization types has no significant association.

4.4.6.3.Market preference for dividend

According to the catering theory proposed by (Baker and Wurgler, 2004), a dividend decline occurs in response to a market preference for capital gains over dividends. Thus, there was an empirical question of whether the results would hold after controlling for market preference for dividends. Following Caliskan and Doukas (2015), I used relative dividend premium (RDP) as a market-level control variable and the explanatory variables used in Model 1 in Table 4.4. RDP was calculated as the value-weighted average of dividend-paying firms' market-to-book ratio minus the market-to-book ratio of the firm i at time t. RDP was expected to have a positive association with dividend payments. If the findings held that generalist CFOs would significantly impact dividend payments, even after RDP inclusion, I could conclude that generalist CFOs were not sensitive to market-specific conclusions (Caliskan and Doukas, 2015). The results are presented in Table 4.11 Panel C.

Table 4.11 Panel C Model 1 is the baseline Model 1 from Table 4.4 to facilitate comparison. Models 2 and 3 include RDP along with board female ratio interaction and board gender diversity interaction term with generalist CFO, respectively, with all the explanatory variables in Model 1. As expected, RDP is positively related to dividend payment, implying a positive impact of market expectation on dividend

payment decisions. The coefficients of generalist CFO in all the models were negative and significant, which supports the primary hypothesis of this study that generalist CFOs paid lower dividends than other CFOs, regardless of the inclusion of the market expectation proxy RDP. Furthermore, both board female ratio interaction and board gender diversity interaction terms with generalist CFO are positive and significant; this indicates consistent monitoring of female directors on generalist CFOs for firm dividend policy.

4.5. Conclusion

The stylised fact of the "sticky dividend" has received considerable attention due to the paradoxical changes in dividend patterns worldwide. However, could managerial attributes explain more? Generalist managerial experience in firm policy has been widely researched in recent years. Generalist managers are expected to be risk-taking and affect firm strategy beyond any approach currently in place. However, the extant literature is concentrated on CEOs, with little investigation of the second-most influential executive, the CFO. This study contributes to the literature by analysing the impact of generalist CFOs on firm dividend policies. Furthermore, I have investigated the influence of CFOs as team members on diverse boards that develop and monitor the CFOs' decision-making environment.

In examining a sample of UK-listed firms, I show that firms with more-generalist CFOs paid lower dividends than firms with less-generalist CFOs that confirms the upper echelon theory. This negative effect persists, even after controlling for board gender diversity. As expected from gender based social role theory and resource dependency theory, the interaction term of board gender diversity with generalist CFOs had a positive association with dividends. Furthermore, This dividend-cut decision by a generalist CFO is significant only in firms with less prominent CEOs. In additional subsample analyses, I found evidence that generalist CFOs cut dividends in firms engaging in more investment and firms with financial deficits, suggesting that they were setting aside the funds for overinvestment. On top of that, generalist CFOs' dividend cut is significant even after considering market demand for the dividend. Finally, my results suggest that a longer tenure allows a generalist CFO to form a better

environmental fit with their current firm, supporting their transition towards becoming a specialist, as reflected in their lack of effect on firm dividend payments.

These results have significant implications for boards tasked with recruiting and compensating top-executive teams. Firms in a growth stage may benefit from employing generalist CFOs, while mature firms may not. Furthermore, when designing compensation packages, the board should consider risk-averse options (e.g., inside debt) for generalist CFOs to avoid the negative consequences of their excessive risk-taking.

Another critical policy implication is that the findings evident robust monitoring by female representation on board which has been proposed in recent policy reforms by the UK Government, the UK Financial Reporting Council (UK FRC), and the UK Financial Conduct Authority (UK FCA). Within the existing corporate governance framework in the UK firm, a gender-diverse board would be an effective way to maintain a sensible dividend policy of the firms. My findings also support recent regulatory urge (*Hampton-Alexander Review FTSE Women Leaders Improving Gender Balance in FTSE Leadership*, 2018) for firms to increase female participation on corporate boards. Finally, the findings are strong evidence for shareholders and other corporate stakeholders on how gender-diverse boards can mitigate managers' excessive risk-taking behaviour, which may guide the stakeholders in future investment decisions.

This study has a few limitations that provide directions for future research. I acknowledge that my sample is limited to the UK publicly listed firms only; therefore results may not be generalized due to differences in institutional, regulatory and cultural practices. Future studies can analyse and compare multiple countries. Furthermore, future studies may focus on the education or expertise of individual female directors on the board as they are consistently observed to be the significant maintainer of board-level scrutiny with respect to firm dividend policy.

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Appendix B: Variables Definition

Variable	Definition
CFO Characteristics	
CFO Organization Type	Total type of organization CFO has been worked on at the end of year t. There are 10 types of organizations are listed in BoardEx.
CFO Sector	Total type of sector CFO has been worked on at the end of year t. There are 51 sectors are listed in BoardEx.
CFO Firms	Total number of distinct firms CFO has been worked on at the end of year t.
CFO Roles	Total number of distinct roles CFO has been worked on at the end of year t.
CFO Index	First factor from a factor analysis based on the following variables: CFO Organization type, CFO Sector, CFO Firms and CFO Roles.
Generalist CFO	Continuous variable based on the score of CFO Index.
CFO Age	Natural logarithm of CFO age at the end of year t.
CFO Female	Dummy variable coded 1 if the CFO is female and 0 otherwise.
CFO Relative Pay	Ratio of CFO and CEO pay at the end of year t.
CFO Tenure	Total number of years CFO have in working in current firm in current position.
CFO Network	Natural logarithm of CFO network size at the end of year t.
CFO Turnover	Change in CFO from a lower score to a higher score CFO Index.
MBA Top Rank	Dummy variable indicating 1 whether CFO has MBA from Top universities based on either Ivy League, or Russel Group or Top 25 Universities list provided by the Times Higher Education (THE) in 2018.
Foreign CFO	Dummy variable coded 1 if CFO is has foreign graduation degree, and/or foreign career experience.
CEO Characteristics	
CEO Chair	Dummy variable coded 1 if the CEO is also the Chair of Board and 0 otherwise.
CEO Fin Sector	Dummy variable coded 1 if the CEO has experience in financial sectors (Banks and investment firms) and 0 otherwise.
CEO Prior CFO	Dummy variable coded 1 if the CEO has played role as CFO in same or other firms and 0 otherwise.
Board Characteristics	
Board Size	Natural logarithm of total number of directors in board.
Board Independence	Ratio of number of non-executive directors to the total number of directors.

Board Female Number	Total number of female directors in the board.
Board Female Ratio	Ratio of number of female directors to the total number of directors.
Board Gender Diversity	The standardized measure Blau diversity index, BLAU at the end of the fiscal year t as: BLAU=1− $\sum_{i=1}^{n}$ Pi^2, where P_i refers to the percentage of female board members. The values fluctuate between 0 and 0.5, at which there is the same percentage of male and female board members and thus the diversity is maximized (Blau, 1977).
Firm Characteristics	
Dividend Payout Ratio	Ratio of dividend per share to net income before extraordinary items.
Dividend Yield	Ratio of dividend per share to price per share of firm.
Firm Size	Natural logarithm of book value of total assets.
Firm Age	Natural logarithm of the number of years since a firm has been listed in the exchange at the end of year t.
Mkt to Book	Ratio of the book value of assets minus the book value of equity plus the market value of equity to the book value of assets.
ROA	Ratio of earnings before interest, taxes, depreciation, and amortization (EBITDA) to total assets.
Liquidity Ratio	Ratio of cash and short term assets to total assets.
Cashflow	Ratio of earnings after interest, common dividends, and taxes but before depreciation to total assets.
Std. Deviation of Cashflow	The rolling standard deviation for the firms' cash flows for the past 3 years.
Leverage Ratio	Ratio of long term debt plus short term debt to total assets.
Intangibles	Ratio of intangible assets to total assets.
Relative Dividend Premium	Relative dividend premium is dividend paying firms' market-to-book ratio minus the market-to-book ratio of firm i at time t.
Financial Deficit	Measured as (Dividend paid to common shareholders$_{it}$ + capital expenditure$_{it}$+ change in net working capital$_{it}$ − free cash flow$_{it}$) / total asset$_{it}$.

Tables

Table 4.1: Generalist CFO: Construction of First Factor

Panel A presents the results from a Factor analysis (FA) based on the following CFO experience related attributes: number of organization type, number of sectors, number of companies, and number of roles that CFOs have been worked through their career. CFO index is the first factor obtained from FA. Factor loadings of the first factor, the eigenvalue and the proportion of variance explained by the first factor is presented. Panel B reports the correlation coefficients among the CFO experience related attributes. Analytical definitions for all variables are provided in the Appendix. p-values are reported in parentheses. *** denotes statistical significance at the 1% level.

Panel A : Factor analysis (FA)				
Factor	Variables		Factor loading	
CFO Index	Number of organization type		0.5762	
	Number of sectors		0.7247	
	Number of companies		0.5833	
	Number of roles		0.8769	
Eigenvalue	1.9667			
Proportion	0.9511			
Panel B : Correlations among CFO variables				
	1	2	3	4
1. Number of organization type	1.0000			
2. Number of sectors	0.4348***	1.0000		
3. Number of companies	0.3094***	0.3879***	1.0000	
4. Number of roles	0.4947***	0.6267***	0.5252***	1.0000

Table 4.2: Summary Statistics

This table presents descriptive statistics for the key variables used in the analysis. Analytical definitions for all variables are provided in the Appendix B. The final sample consists of 8289 firm-year observations on CFO characteristics between 1999 and 2019. Generalist CFO is constructed with the first factor after combining four CFOs' experience related attributes using factor analysis.

	N	Mean	SD	Min	p25	Median	p75	Max
Dividend	8289	0.2691	0.2676	0	0	0.2396	0.4672	0.9334
Generalist CFO	8289	0.0251	0.9112	-1.4865	-0.6109	-0.1192	0.5225	4.6427
CFO Age	8289	47.3564	7.1011	25	42	47	52	73
Female CFO	8289	0.0772	0.2669	0	0	0	0	1
CEO-Chairman Dummy	8289	0.1456	0.3527	0	0	0	0	1
Board Size	8289	6.8955	2.1423	2	5	7	8	20
Board Independence Ratio	8289	0.5284	0.1440	0.1667	0.4286	0.5385	0.6250	0.8182
Institutional Ownership(%)	8289	8.9601	10.9836	0	0	6	14	95
Liquidity Ratio	8289	0.1592	0.1828	0	0.0378	0.0937	0.2098	0.8827
Firm Age	8289	2.1102	0.8258	0	1.6094	2.3026	2.7081	3.2581
M/B Assets	8289	0.5071	0.2584	0.0257	0.3305	0.5021	0.6597	1.5540
Std. Deviation Cash Flow	8289	0.0944	0.1860	0.0018	0.0157	0.0343	0.0869	1.4265
Cash Flow	8289	0.0247	0.2506	-1.4398	0.0302	0.0860	0.1334	0.3266
Return on Assets	8289	0.0215	22.5795	-127.52	0.4200	5.9200	10.0400	31.4200
Intangible Asset Ratio	8289	0.2427	0.2327	0	0.0331	0.1768	0.4023	0.8546
Leverage Ratio	8289	0.1665	0.1749	0	0.0086	0.1260	0.2664	0.8695
Firm Size	8289	11.567	2.1212	6.7946	10.108	11.3568	12.9428	17.3334
Board Female Number	8289	0.6154	0.8849	0	0	0	1	6
Board Female Ratio	8289	0.0831	0.1142	0	0	0	0.1670	0.7140
Board Gender Diversity	8289	0.1263	0.1607	0	0	0	0.2782	0.5000

Table 4.3: Pairwise Correlation

This table presents pairwise correlation coefficients for the key variables used in the analysis. Analytical definitions for all variables are provided in the Appendix B. The sample period is between 1999 and 2019.

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
(1) Dividend	1.0000																			
(2) Generalist CFO	0.0908	1.0000																		
	(0.0000)																			
(3) CFO Age	0.1028	0.0812	1.0000																	
	(0.0000)	(0.0000)																		
(4) Female CFO	-0.0144	0.0759	-0.1019	1.0000																
	(0.1260)	(0.0000)	(0.0000)																	
(5) CEO-Chair Dummy	-0.0715	-0.1002	0.0116	-0.0292	1.0000															
	(0.0000)	(0.0000)	(0.1998)	(0.0008)																
(6) Board Size	0.3355	0.1358	0.0188	-0.0348	-0.1550	1.0000														
	(0.0000)	(0.0000)	(0.0382)	(0.0001)	(0.0000)															
(7) Board Independence	0.1889	0.2350	0.0980	-0.0045	-0.3094	0.3588	1.0000													
	(0.0000)	(0.0000)	(0.0000)	(0.6068)	(0.0000)	(0.0000)														
(8) Institutional Owner	0.0204	0.0895	-0.0100	0.0282	-0.0766	-0.0019	0.1170	1.0000												
	(0.0371)	(0.0000)	(0.2910)	(0.0019)	(0.0000)	(0.8350)	(0.0000)													
(9) Liquidity	-0.2745	-0.0261	-0.0221	0.0000	0.0303	-0.1518	-0.0795	0.0241	1.0000											
	(0.0000)	(0.0042)	(0.0152)	(0.9963)	(0.0005)	(0.0000)	(0.0000)	(0.0081)												
(10) Firm Age	0.2510	0.1796	0.2097	0.0318	-0.0253	0.1410	0.2043	0.0413	-0.1890	1.0000										
	(0.0000)	(0.0000)	(0.0000)	(0.0004)	(0.0052)	(0.0000)	(0.0000)	(0.0000)	(0.0000)											
(11) M/B Assets	0.1935	0.0691	-0.0337	-0.0244	-0.0077	0.1717	0.1058	-0.0024	-0.3025	0.1139	1.0000									
	(0.0000)	(0.0000)	(0.0003)	(0.0066)	(0.3924)	(0.0000)	(0.0000)	(0.7951)	(0.0000)	(0.0000)										
(12) Cash Flow Volatility	-0.3279	-0.0472	-0.0374	-0.0085	0.0290	-0.1908	-0.1082	0.0117	0.2742	-0.1414	0.0538	1.0000								
	(0.0000)	(0.0000)	(0.0001)	(0.3658)	(0.0021)	(0.0000)	(0.0000)	(0.2235)	(0.0000)	(0.0000)	(0.0000)									
(13) Cash Flow	0.3832	0.0675	0.0208	0.0106	-0.0282	0.1979	0.1069	0.0020	-0.2977	0.1976	-0.0268	-0.5999	1.0000							
	(0.0000)	(0.0000)	(0.0234)	(0.2294)	(0.0014)	(0.0000)	(0.0000)	(0.8235)	(0.0000)	(0.0000)	(0.0030)	(0.0000)								
(14) ROA	0.4020	0.0634	0.0003	0.0016	-0.0342	0.2194	0.1163	-0.0041	-0.3264	0.2078	0.0010	-0.5815	0.9523	1.0000						
	(0.0000)	(0.0000)	(0.9714)	(0.8544)	(0.0001)	(0.0000)	(0.0000)	(0.6579)	(0.0000)	(0.0000)	(0.9100)	(0.0000)	(0.0000)							
(15) Intangibles	-0.0479	0.0786	0.0036	0.0159	-0.0542	-0.0247	0.1008	0.0630	-0.2420	-0.0556	-0.0976	-0.0496	-0.0094	-0.0170	1.0000					
	(0.0000)	(0.0000)	(0.6901)	(0.0697)	(0.0000)	(0.0049)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.2880)	(0.0539)						
(16) Leverage	0.1315	0.0537	-0.0023	-0.0154	-0.0345	0.2032	0.1562	-0.0216	-0.3400	0.0520	0.6801	0.0082	-0.0102	0.0198	0.0186	1.0000				
	(0.0000)	(0.0000)	(0.8035)	(0.0798)	(0.0001)	(0.0000)	(0.0000)	(0.0182)	(0.0000)	(0.0000)	(0.0000)	(0.3829)	(0.2471)	(0.0254)	(0.0341)					
(17) Firm Size	0.5059	0.2386	0.1001	-0.0307	-0.1504	0.6688	0.4866	0.0296	-0.3673	0.3341	0.2478	-0.3542	0.3919	0.4251	0.0290	0.3051	1.0000			
	(0.0000)	(0.0000)	(0.0000)	(0.0004)	(0.0000)	(0.0000)	(0.0000)	(0.0012)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0009)	(0.0000)				

(18) Female Number	0.2209	0.2717	0.0621	0.3141	-0.0886	0.3861	0.3196	0.0237	-0.1028	0.2270	0.1151	-0.1087	0.1208	0.1307	0.0835	0.1171	0.4346	1.0000	
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0091)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)		
(19) Female Ratio	0.1539	0.2353	0.0443	0.4047	-0.0690	0.1826	0.2417	0.0463	-0.0725	0.1961	0.0779	-0.0741	0.0928	0.0989	0.0765	0.0671	0.2780	0.9296	1.0000
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	
(20) Gender Diversity	0.1654	0.2321	0.0434	0.3928	-0.0740	0.2124	0.2527	0.0465	-0.0783	0.2020	0.0838	-0.0857	0.0984	0.1034	0.0786	0.0720	0.2975	0.9181	0.9817	1.0000
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	

Table 4.4: Generalist CFOs, Board Female Representation and Firm Dividend Policy

This table presents the results from several regressions on the relationship between generalist CFO and firm dividend. In Model 1, I use an ordinary least squares (OLS) regression with standard errors clustered at the firm level with Generalist CFO and all control variables on firm dividend using firm and year fixed effect. In Model 2, 3 and 4, I use board female interaction term with generalist CFO and define female presentation with total number of female, female ratio and gender diversity, respectively. Generalist CFO variable is constructed with first factor after combining four CFO attributes using factor analysis as discussed in Section 3.2. All independent variables are measured on same year of dependent variable. Analytical definitions for all variables are provided in the Appendix. T Statistics are reported in parentheses. ***, **, and * denote statistical significance at the 1%, 5% and 10% levels, respectively.

Dependent variable is the ratio of dividends to net income before extraordinary items.				
VARIABLES	Model 1	Model 2	Model 3	Model 4
Generalist CFO	-0.0103**	-0.0161***	-0.0164***	-0.0178***
	(-2.0700)	(-2.7120)	(-2.7094)	(-2.8270)
Board Female Number		0.0048		
		(0.6698)		
Generalist CFO* Board Female Number		0.0059*		
		(1.7955)		
Board Female Ratio			0.0395	
			(0.8057)	
Generalist CFO* Board Female Ratio			0.0493*	
			(1.7035)	
Board Gender Diversity				0.0335
				(0.9813)
Generalist CFO* Board Gender Diversity				0.0416*
				(1.8560)
CFO Age	0.0449	0.0402	0.0402	0.0399
	(1.5230)	(1.3655)	(1.3675)	(1.3590)
Female CFO	0.0218	0.0146	0.0130	0.0129
	(1.3677)	(0.8329)	(0.7311)	(0.7414)
CEO Chair Dummy	0.0024	0.0012	0.0012	0.0009
	(0.1783)	(0.0924)	(0.0929)	(0.0710)
Board Size	-0.0016	-0.0050	-0.0014	-0.0019
	(-0.0805)	(-0.2569)	(-0.0686)	(-0.0954)
Board Independence	0.0525	0.0487	0.0479	0.0473
	(1.4604)	(1.3591)	(1.3314)	(1.3146)
Institutional Ownership	0.0005	0.0015	0.0003	-0.0002
	(0.0125)	(0.0352)	(0.0059)	(-0.0054)
Liquidity Ratio	0.0147	0.0171	0.0171	0.0173
	(0.4927)	(0.5798)	(0.5800)	(0.5898)
Firm Age	0.0372***	0.0396***	0.0394***	0.0397***
	(3.6513)	(3.8358)	(3.8450)	(3.8728)
Market to Book	-0.0815***	-0.0801***	-0.0805***	-0.0802***
	(-2.6271)	(-2.6078)	(-2.6161)	(-2.6129)
Cash Flow Volatility	-0.0632***	-0.0635***	-0.0635***	-0.0636***

	(-2.8707)	(-2.9129)	(-2.9049)	(-2.9216)
Cash Flow	0.0129	0.0142	0.0139	0.0141
	(0.5191)	(0.5701)	(0.5571)	(0.5650)
Return on Assets	-0.0003	-0.0003	-0.0003	-0.0003
	(-1.0115)	(-1.0370)	(-1.0317)	(-1.0349)
Intangible Asset Ratio	0.0236	0.0252	0.0245	0.0243
	(0.7474)	(0.7976)	(0.7764)	(0.7682)
Leverage	0.0267	0.0268	0.0269	0.0272
	(0.6939)	(0.6975)	(0.7004)	(0.7093)
Firm Size	0.0391***	0.0388***	0.0387***	0.0386***
	(5.7607)	(5.7314)	(5.7032)	(5.6773)
Constant	-0.4262***	-0.4066***	-0.4110***	-0.4088***
	(-3.0033)	(-2.8807)	(-2.9051)	(-2.8954)
Observations	8,086	8,086	8,086	8,086
R-squared	0.6958	0.6962	0.6962	0.6963
Firm FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes

Table 4.5: CFO Attributes

This table shows the results on the relationship between generalist CFO and firm dividend across firms split based on CFO Attributes. In Panel A, Low (High) CFO tenure group includes the firms where CFOs tenure are lower (higher) than the median yearly tenure in the sample. In Panel B, Yes (No) CFO Pay Rank group includes the firms whether CFO's total compensation is within the top 3 highly paid board of directors in own firm or not. Generalist CFO variable is constructed with first factor after combining four CFO attributes using factor analysis as discussed in Section 3.2. All independent variables are measured on same year of dependent variable. Analytical definitions for all variables are provided in the Appendix. T Statistics are reported in parentheses. ***, **, and * denote statistical significance at the 1%, 5% and 10% levels, respectively.

Dependent variable is the ratio of dividends to net income before extraordinary items.				
Panel A : CFO Tenure				
VARIABLES	Low	High	Low	High
Generalist CFO	-0.0185***	0.0031	-0.0203***	0.0033
	(-3.2106)	(0.3074)	(-3.2620)	(0.2975)
Gender Diversity			0.0077	0.0067
			(1.0734)	(0.8137)
Generalist CFO * Gender Diversity			0.0052	-0.0003
			(1.1785)	(-0.0444)
Constant	-0.0840	-0.6763**	-0.0662	-0.6673**
	(-0.4352)	(-2.5459)	(-0.3746)	(-2.5249)
Chi-sq	4.17**		8.93***	
Observations	3,700	4,589	3,700	4,589
R-squared	0.0588	0.0633	0.0606	0.0638
Number of Firms	1,114	1,007	1,114	1,007
All controls	Yes	Yes	Yes	Yes
Firm FE and Year FE	Yes	Yes	Yes	Yes

Panel B: CFO Pay Rank				
VARIABLES	No	Yes	No	Yes
Generalist CFO	0.0003	-0.0101*	0.0096	-0.0198***
	(0.0211)	(-1.7935)	(0.6533)	(-2.7518)
Gender Diversity			0.0405	0.0280
			(0.4812)	(0.7630)
Generalist CFO * Gender Diversity			-0.0690	0.0527**
			(-0.9750)	(2.1328)
Constant	0.2736	-0.3778**	0.2495	-0.3512**
	(0.8720)	(-2.5178)	(0.7890)	(-2.3476)
lincom	-6.92***		-6.27***	
Observations	1,258	7,031	1,258	7,031
R-squared	0.1144	0.0472	0.1163	0.0492
Number of Firms	526	1,231	526	1,231
All controls	Yes	Yes	Yes	Yes
Firm FE and Year FE	Yes	Yes	Yes	Yes

Table 4.6: CEO Power

This table presents the results on the relative effect of the generalist CFOs and powerful CEOs on firm dividend. In Panel A, I split sample into high and low powered CEO firms based on CEO-CFO Co-option, whether CFO is recruited by current CEO or not. In Panel B, I split sample into high and low powered CEO firms based on CEO pay rank, whether CEO's total compensation is within the top 3 highly paid board of directors in own firm or not. In each models, I use an ordinary least squares (OLS) regression with standard errors clustered at the firm level, and firm and year fixed effect estimation. Generalist CFO variable is constructed with first factor after combining four CFO attributes using factor analysis as discussed in Section 3.2. All independent variables are measured on same year of dependent variable. Analytical definitions for all variables are provided in the Appendix. T Statistics are reported in parentheses. ***, **, and * denote statistical significance at the 1%, 5% and 10% levels, respectively.

Dependent variable is the ratio of dividends to net income before extraordinary items.				
Panel A: CEO-CFO Co-option				
VARIABLES	No	Yes	No	Yes
Generalist CFO	-0.0119**	0.0013	-0.0205***	0.0016
	(-2.2063)	(0.1083)	(-3.0109)	(0.1028)
Gender Diversity			0.0286	0.0209
			(0.7186)	(0.2868)
Generalist CFO * Gender Diversity			0.0480*	-0.0003
			(1.8081)	(-0.0067)
Constant	-0.1183	-0.9507**	-0.0989	-0.9467**
	(-0.7269)	(-2.5104)	(-0.6083)	(-2.5130)
Chi-sq	9.44***		8.93***	
Observations	5,644	2,645	5,644	2,645
R-squared	0.0423	0.0747	0.0441	0.0748
Number of Firms	1,150	693	1,150	693
All Controls				
Firm and Year FE	Yes	Yes	Yes	Yes

Panel B: CEO Pay Rank				
VARIABLES	No	Yes	No	Yes
Generalist CFO	0.0345	-0.0098*	0.0049	-0.0178***
	(1.1349)	(-1.9216)	(0.1623)	(-2.7812)
Gender Diversity			-0.1465	0.0392
			(-1.0900)	(1.1200)
Generalist CFO * Gender Diversity			0.2125	0.0444**
			(1.8839)	(1.9733)
Constant	0.6583	-0.3802***	0.7060	-0.3559**
	(0.8038)	(-2.7003)	(0.8215)	(-2.5440)
Chi-sq	0.46		2.62*	
Observations	413	7,876	413	7,876
R-squared	0.1862	0.0499	0.2009	0.0516
Number of Firms	238	1,284	238	1,284
All controls	Yes	Yes	Yes	Yes
Firm FE and Year FE	Yes	Yes	Yes	Yes

Table 4.7: Channel Analysis- Firm Internal Financing Deficit

This table shows the results on the relationship between generalist CFOs and firm dividend across firms subsample with respect to internal financing deficit. Following Shyam-Sunder and Myers (1999), deficit is measured as a dummy variable indicating 1 if ratio of sum of common-shareholders' dividend, capital expenditure, change in net working capital minus free cashflow to total asset turns out to be positive and/or 0 otherwise. Generalist CFO variable is constructed with first factor after combining four CFO attributes using factor analysis as discussed in Section 3.2. All independent variables are measured on same year of dependent variable. Analytical definitions for all variables are provided in the Appendix. T Statistics are reported in parentheses. ***, **, and * denote statistical significance at the 1%, 5% and 10% levels, respectively.

Dependent variable is the ratio of dividends to net income before extraordinary items.				
VARIABLES	Low	High	Low	High
Generalist CFO	-0.0040	-0.0157**	-0.0128	-0.0206**
	(-0.6204)	(-2.4977)	(-1.5004)	(-2.5374)
Gender Diversity			0.0031	0.0972**
			(0.0681)	(2.3031)
Generalist CFO * Gender Diversity			0.0455*	0.0279
			(1.6956)	(0.8221)
CFO Age	0.0941**	0.0152	0.0870**	0.0125
	(2.2099)	(0.4291)	(2.0368)	(0.3562)
Female CFO	0.0052	0.0253	0.0025	0.0043
	(0.2052)	(1.5529)	(0.0929)	(0.2418)
CEO Chair Dummy	0.0063	0.0102	0.0047	0.0091
	(0.3203)	(0.6925)	(0.2375)	(0.6182)
Board Size	-0.0004	0.0060	-0.0003	0.0047
	(-0.0125)	(0.2512)	(-0.0097)	(0.1977)
Board Independence	0.0681	0.0212	0.0669	0.0100
	(1.2379)	(0.4941)	(1.2035)	(0.2342)
Institutional Ownership	0.0416	-0.0315	0.0411	-0.0299
	(0.6581)	(-0.6958)	(0.6478)	(-0.6592)
Liquidity Ratio	0.0577	-0.0243	0.0626	-0.0221
	(1.0907)	(-0.8307)	(1.1961)	(-0.7615)
Firm Age	0.0276*	0.0286**	0.0294*	0.0328***
	(1.7129)	(2.4156)	(1.8470)	(2.7144)
Market to Book	-0.1222***	-0.0702**	-0.1187***	-0.0725**
	(-2.7256)	(-1.9970)	(-2.6726)	(-2.0934)
Cash Flow Volatility	-0.0847**	-0.0511**	-0.0855**	-0.0518**
	(-2.2162)	(-2.5066)	(-2.2285)	(-2.5075)
Cash Flow	0.0730	0.0015	0.0753	0.0039
	(0.8652)	(0.0665)	(0.8892)	(0.1711)
Return on Assets	-0.0005	-0.0004	-0.0005	-0.0004
	(-0.4298)	(-1.2957)	(-0.4418)	(-1.3528)
Intangible Asset Ratio	-0.0279	0.0218	-0.0245	0.0216
	(-0.5277)	(0.6696)	(-0.4635)	(0.6638)
Leverage	0.0158	0.0539	0.0149	0.0595
	(0.2777)	(1.0817)	(0.2615)	(1.1960)
Firm Size	0.0446***	0.0419***	0.0443***	0.0403***
	(3.9664)	(5.4288)	(3.9524)	(5.1872)
Constant	-0.5036**	-0.2967*	-0.4787**	-0.2674
	(-2.4126)	(-1.8204)	(-2.2928)	(-1.6443)
Chi-sq	2.80*		5.81**	
Observations	3,956	4,207	3,956	4,207
R-squared	0.0630	0.0490	0.0642	0.0527
Number of Firms	1,053	1,129	1,053	1,129
Firm and Year FE	Yes	Yes	Yes	Yes

Table 4.8: Regression Estimates Using Two Stage Instrumental Variables (IV) Methods

This table reports the results from an IV estimation on the relationship between generalist CFO and firm dividend. I use MBA Top Rank, CFO Network Size and Foreign CFO as potential instruments for generalist CFOs. First, MBA Top Rank is the dummy variable defined as 1 if CFOs have MBA degree from top ranked universities (Ivy league, Russell group or list of Top 25 universities announced by THE). Second, Network Size is the total number of directors that are connected to CFO as reported in BoardEx database. Finally, Foreign CFO is a dummy variable indicating 1 whether CFO is has foreign graduation degree, and/or foreign career experience and 0 otherwise. The results of the first stage regression are presented in Model 1 and the results of the second stage regression are presented in Model 2 to 4. Generalist CFO variable is constructed with first factor after combining four CFO attributes using factor analysis as discussed in Section 3.2. All independent variables are measured on same year of dependent variable. Analytical definitions for all variables are provided in the Appendix. T Statistics are reported in parentheses. ***, **, and * denote statistical significance at the 1%, 5% and 10% levels, respectively.

In second stage models, dependent variable is the ratio of dividends to net income before extraordinary items.			
	First Stage	Second Stage	
VARIABLES	Model 1	Model 2	Model 3
Generalist CFO		-0.0478***	-0.0700***
		(-3.5982)	(-3.1156)
Gender Diversity			0.0553
			(1.6276)
Generalist CFO * Gender Diversity			0.1439
			(1.2669)
MBA Top Rank	0.2114***		
	(3.1123)		
Network Size	0.0841***		
	(16.0255)		
Foreign CFO	0.1921***		
	(10.1367)		
CFO Age	0.0671	0.1305***	0.1215***
	(1.0316)	(7.3826)	(6.2409)
Female CFO	0.1881***	0.0122	-0.0099
	(5.4401)	(1.2311)	(-0.9110)
CEO Chair Dummy	-0.0479*	-0.0226***	-0.0263***
	(-1.7316)	(-2.9636)	(-3.3292)
Board Size	0.1112***	0.0422***	0.0390***
	(2.6174)	(3.5780)	(3.2978)
Board Independence	0.0689	-0.0252	-0.0325
	(0.8569)	(-1.1343)	(-1.4608)
Institutional Ownership	0.3623***	0.0586**	0.0586**
	(4.1362)	(2.3890)	(2.3909)
Liquidity Ratio	0.1239*	-0.0076	-0.0048
	(1.9257)	(-0.4233)	(-0.2693)
Firm Age	-0.0015	0.0213***	0.0215***
	(-0.1077)	(5.6601)	(5.7217)

Market to Book	0.1903***	0.1223***	0.1248***
	(3.5973)	(8.2557)	(8.1185)
Cash Flow Volatility	0.0393	-0.1202***	-0.1265***
	(0.6054)	(-6.7377)	(-7.0186)
Cash Flow	-0.0556	-0.0191	-0.0149
	(-0.4436)	(-0.5543)	(-0.4295)
Return on Assets	0.0019	0.0020***	0.0019***
	(1.4047)	(5.2018)	(5.0171)
Intangible Asset Ratio	-0.1061**	0.0066	0.0043
	(-2.2934)	(0.5270)	(0.3434)
Leverage	-0.0298	-0.1271***	-0.1261***
	(-0.3917)	(-6.0681)	(-5.9784)
Firm Size	0.0537***	0.0402***	0.0379***
	(6.9349)	(17.3300)	(15.8486)
Constant	-0.9416***	-0.8632***	-0.8234***
	(-3.4058)	(-11.4767)	(-10.2617)
Observations	7,719	7,719	7,719
R-squared	0.2479	0.3213	0.3220
Industry FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Anderson canon. corr. LM statistic (p values)		408.368 (0.0000)	155.279 (0.0000)
Cragg-Donald Wald F statistic		142.814	26.233
Stock-Yogo weak ID test critical values 10%		22.30	12.20
Sargan statistic (p values)		4.259 (0.1189)	3.884 (0.2743)
Endogeneity test (p values)		13.190 (0.0003)	13.002 (0.0003)

Table 4.9: Regression Estimates after Propensity Score Matching (PSM)

This table presents the results from several regressions on the relationship between generalist CFO and firm dividend based on matched firms in subsamples sample using propensity score matching. If generalist CFO's factor score is higher than the per industry-year mean first factor score, then the firm is in high diverse CFO subsample identified as treatment group and vice versa. Panel A presents the covariate balance tests and Panel B presents the regression analysis for matched sample only. Generalist CFO variable is constructed with first factor after combining four CFO attributes using factor analysis as discussed in Section 3.2. All independent variables are measured on same year of dependent variable. Analytical definitions for all variables are provided in the Appendix. T Statistics are reported in parentheses. ***, **, and * denote statistical significance at the 1%, 5% and 10% levels, respectively.

Panel A : Covariate Comparison

Variable	Unmatched (U) Matched (M)	Mean		%reduct		t-test		V(T) /V(C)
		Treated	Control	%bias	bias	t	p>t	
Liquidity	U	0.154	0.163	-5.000	-2.350	0.019	0.88*	
	M	0.154	0.155	-0.300	94.600	-0.130	0.900	0.93*
Firm Age	U	2.091	2.129	-4.600	-2.120	0.034	1.050	
	M	2.093	2.035	7	-53.900	3.120	0.002	0.92*
M/B Asset	U	0.525	0.491	13.100	6.120	0.000	1.060	
	M	0.524	0.524	.1	99.000	0.060	0.954	0.980
Cash Flow Volatility	U	0.095	0.097	-1.100	-0.530	0.597	1.030	
	M	0.095	0.110	-8.200	-621.200	-3.380	0.001	0.70*
Cash Flow	U	0.026	0.021	2.2	1.030	0.305	1.010	
	M	0.025	-0.003	11.200	-409.300	4.780	0.000	0.76*
Return on Assets	U	0.032	-0.228	1.1	0.530	0.594	1.030	
	M	-0.033	-2.509	10.900	-849.800	4.590	0.000	0.75*
Intangible Asset Ratio	U	0.262	0.222	17.400	8.100	0.000	1.060	
	M	0.262	0.261	.2	98.900	0.090	0.930	0.950
Leverage	U	0.180	0.157	13.000	6.050	0.000	1.10*	
	M	0.179	0.185	-3.300	74.700	-1.440	0.150	0.92*
Firm Size	U	12.099	11.114	46.900	21.870	0.000	1.57*	
	M	12.066	11.983	4	91.600	1.720	0.086	1.13*

Panel B: Regression analysis results on matched sample

Dependent variable is the ratio of dividends to net income before extraordinary items.		
VARIABLES	Model 1	Model 2
Generalist CFO	-0.0102**	-0.0177***
	(-1.9657)	(-2.6516)
Gender Diversity		0.0466
		(1.3039)
Generalist CFO * Gender Diversity		0.0405*
		(1.7371)
CFO Age	0.0408	0.0355
	(1.3074)	(1.1443)
Female CFO	0.0226	0.0112
	(1.3337)	(0.6065)
CFO CEO Relative Pay	0.0026	0.0026
	(0.5975)	(0.5828)
CEO Chair Dummy	0.0003	-0.0012
	(0.0226)	(-0.0838)
Board Size	0.0011	0.0001
	(0.0501)	(0.0066)
Board Independence	0.0618	0.0548
	(1.5711)	(1.3946)
Institutional Ownership	0.0091	0.0084
	(0.1979)	(0.1838)
Liquidity Ratio	0.0214	0.0246
	(0.6431)	(0.7518)
Firm Age	0.0418***	0.0449***
	(3.7387)	(4.0017)
Market to Book	-0.0951***	-0.0931***
	(-2.7215)	(-2.6972)
Cash Flow Volatility	-0.0834***	-0.0836***
	(-3.0807)	(-3.1296)
Cash Flow	0.0109	0.0119
	(0.3610)	(0.3936)
Return on Assets	-0.0003	-0.0003
	(-0.8271)	(-0.8202)
Intangible Asset Ratio	0.0336	0.0346
	(0.9381)	(0.9653)
Leverage	0.0463	0.0466
	(1.0897)	(1.1010)
Firm Size	0.0386***	0.0379***
	(5.1898)	(5.0875)
Constant	-0.3215**	-0.2947**
	(-2.2346)	(-2.0637)
Observations	7,686	7,686
R-squared	0.0506	0.0523
Number of Firms	1,227	1,227
Firm FE	Yes	Yes
Year FE	Yes	Yes

Table 4.10: CFO Transition

This table presents the results from several regressions on the relationship between generalist CFO and firm dividend based on CFO transition interaction with pre and post transition outcomes. Panel A presents mean differences in cash holdings one year before the transition between treatment firms (experiencing a turnover from a less generalist to more generalist CFO) and control firms (those that are always run by less generalist CFOs). Panel B provides the regression analyses with firms with such CFO transition. Generalist CFO variable is constructed with first factor after combining four CFO attributes using factor analysis as discussed in Section 3.2. All independent variables are measured on same year of dependent variable. Analytical definitions for all variables are provided in the Appendix. T Statistics are reported in parentheses. ***, **, and * denote statistical significance at the 1%, 5% and 10% levels, respectively.

Panel A: T Test of Mean Difference	Mean (Control)	Mean (Treatment)	dif	St Err	t value	p value
Difference in Dividend payout ratio one year before Treatment	.24	.216	.024	.022	1.05	.292

Panel B: Regression with Post and CFO Turnover interaction		
Dependent variable is the ratio of dividends to net income before extraordinary items.		
VARIABLES	Model 1	Gender
Post*CFO Turnover	-0.0151*	
	(-1.6167)	
Post*CFO Turnover*Board Gender Diversity		0.0121*
		(1.7716)
Constant	-0.363**	-0.358**
	(-2.3882)	(-2.3709)
Observations	6,410	6,410
R-squared	0.054	0.054
Number of Firm	853	853
All controls	Yes	Yes
Firm FE and Year FE	Yes	Yes

Table 4.11: Other Robustness Checks

This table presents the results from several regressions on the relationship between generalist CFO and firm dividend. In Panel A, I run the baseline models with an alternative definition for firm dividend, that is, dividend yield. In Panel B, I run several regressions on the relationship between firm dividend and CFO attributes based on each of the experience dimensions of CFOs e.g. number of organization types, sectors, firms, and roles. In Panel C, I considered relative dividend premium to capture market demand for dividend in the baseline models. Relative dividend premium is dividend paying firms' market-to-book ratio minus the market-to-book ratio of firm i at time t. In each models, I use an ordinary least squares (OLS) regression with standard errors clustered at the firm level, and firm and year fixed effect estimation. For Panel B and Panel C, the dependent variable is defined as the ratio of dividend per share to net income before extraordinary items. Generalist CFO variable is constructed with first factor after combining four CFO attributes using factor analysis as discussed in Section 3.2. All independent variables are measured on same year of dependent variable. Analytical definitions for all variables are provided in the Appendix. T Statistics are reported in parentheses. ***, **, and * denote statistical significance at the 1%, 5% and 10% levels, respectively.

Panel A : Firm Dividend Yield		
Dependent variable is dividend yield, the ratio of dividend per share to share price.		
VARIABLES	Model 1	Model 2
Generalist CFO	-0.0920**	-0.1446**
	(-1.9668)	(-2.4040)
Gender Diversity		0.5431*
		(1.8440)
Generalist CFO * Gender Diversity		0.2827
		(1.4038)
Constant	-3.9778***	-3.7931***
	(-2.9756)	(-2.8641)
Observations	9,428	9,428
R-squared	0.6358	0.6365
All controls	Yes	Yes
Firm FE and Year FE	Yes	Yes

Panel B: CFO Experience Dimensions					
Dependent variable is the ratio of dividends to net income before extraordinary items.					
VARIABLES	Model 1	Model 2	Model 3	Model 4	Model 5
Generalist CFO	-0.0103**				
	(-2.0700)				
Organizations		0.0022			
		(0.1347)			

Sectors			-0.0051*		
			(-1.6737)		
Firms				-0.0016***	
				(-3.4602)	
Roles					-0.0031**
					(-2.2979)
Constant	-0.4262***	-0.4276***	-0.4095***	-0.4454***	-0.4024***
	(-3.0033)	(-3.0203)	(-2.8981)	(-3.1656)	(-2.8573)
Observations	8,086	8,135	8,135	8,135	8,135
R-squared	0.6958	0.6952	0.6955	0.6964	0.6957
All controls	Yes	Yes	Yes	Yes	Yes
Firm FE and Year FE	Yes	Yes	Yes	Yes	Yes

Panel C : Relative Dividend Premium

Dependent variable is the ratio of dividends to net income before extraordinary items.

VARIABLES	Model 1	Model 2	Model 3
Generalist CFO	-0.0103**	-0.0164***	-0.0178***
	(-2.0700)	(-2.7094)	(-2.8270)
Board Female Ratio		0.0395	
		(0.8057)	
Generalist CFO * Board Female Ratio		0.0493*	
		(1.7035)	
Gender Diversity			0.0335
			(0.9813)
Generalist CFO * Gender Diversity			0.0416*
			(1.8560)
Relative Dividend Premium	0.0815***	0.0805***	0.0802***
	(2.6271)	(2.6161)	(2.6129)
Constant	-0.4669***	-0.4512***	-0.4488***
	(-3.2806)	(-3.1823)	(-3.1730)
Observations	8,086	8,086	8,086
R-squared	0.6958	0.6962	0.6963
All controls	Yes	Yes	Yes
Firm FE and Year FE	Yes	Yes	Yes

Chapter 5

Female CFO and Firm Debt Maturity Decision: Moderating Role of Financial Expert CEO and Board[30]

[30] I presented this chapter at the BAFA Annual Conference and Doctoral Colloquium Special Interest Group Corporate Governance 2019 and ASFAAG 2nd Annual Conference 2022. I am thankful for the feedback I received from the participants.

5.1. Introduction

Debt maturity is a critical financial decision in the firm capital structure (Dang and Phan, 2016). Early debt maturity studies focus on the firm-level determinants (e.g., (Myers, 1977; Flannery, 1986; Barclay and Smith, 1995; Stohs and Mauer, 1996), whereas recent studies focus on the role of debt maturity as a tool for reducing agency conflict by linking it with managerial features, such as ownership (Datta, Iskandar-Datta and Raman, 2005), compensation (Brockman, Martin and Unlu, 2010), overconfidence (Huang, Tan and Faff, 2016), and gender (Li and Zhang, 2019; La Rocca, Neha Neha and La Rocca, 2020; Datta, Doan and Toscano, 2021). Studies on the gender-based difference in financial decision-making show mixed evidence on whether and how female management decide on firm's debt maturity structure. For example, some studies show that female management, both CEO and CFO (Datta, Doan and Toscano, 2021; La Rocca, Neha Neha and La Rocca, 2020), are likely to issue more short-term debt[31] compared to their male counterpart due to their genuine ethical nature to maintain clean performance record with recurring external check. An alternative explanation and critical debate is there that female managers are risk taker as they pierce through the glass cliff (McGuinness, 2019) and thus tend to take short term debt considering the refinancing risk of such debt. Another alternative explanation could have been female CFOs face gender based credit discrimination, thus they tend to end up with recurring short term debt financing. On contrary to that, literature on bank loan suggests that, female CFOs receive favourable price and non-price terms on bank loan due to their accounting transparency and better monitoring (Francis *et al.*, 2013). Further research is needed to understand this debate on female CFOs and firm debt maturity particularly in context of the UK CFOs where they sit in their board with influential powers.

Furthermore, excessive reliance on short-term debt might not be suitable for all firms depending on firms' financial health; such decisions are expected to be highly checked and balanced by financial expertise in monitoring authority due to their lower costs in obtaining information regarding financial transactions and the associated risks with

[31] as well as female board members (Li and Zhang, 2018).

source of external financing (Harris and Raviv, 2008; Minton, Taillard and Williamson, 2014). Despite firm financing decisions being an essential part of board strategic recommendation (Morellec, Nikolov and Schürhoff, 2012; Bradley and Chen, 2015), surprisingly, very limited work attempts to understand the compatibility of CFO and financial expert board members. This study attempts to examine how the presence of financial sector experts in CFO monitoring authority, both CEO and board of directors, respond to CFOs' short-term debt decisions.

Debt maturity policy is connected to a firm's liquidity management policy (Harford, Klasa and Maxwell, 2014); this decision affects investment in both excellent and unfavourable business environment (Duchin, Ozbas and Sensoy, 2010). This decision also has impact on short-term stock price crash risk (Dang *et al.*, 2018) and long-term shareholder wealth (Datta, Iskandar-Datta and Raman, 2005). On top of that, short-term debt exposes the firm to higher refinancing risk with more frequent renegotiations (Diamond, 1991). Ultimately, managers become subjects of tight monitoring by the external debt market (Stulz, 2000). Thus, potential agency conflict between the firm and manager is inherent in this decision. Unfortunately, debt maturity structure received less attention in empirical studies due to being perceived as a secondary source of financial risks compared to the level of debt (Hong 2019). Existing literature mainly focuses on firm-level determinants of debt maturity.

A few studies, inspired by the upper echelon theory (Hambrick and Mason, 1984), investigate the impact of demographic characteristics and the background of top management on firm debt maturity policy. Most of these studies are focused on Chief Executive Officers CEOs (e.g., Dang and Phan, 2016; Ataullah, Le and Wood, 2022)., although CFOs are found to be more relevant for firm finance decisions in prior studies; for example, cash holding and liquidity (Florackis and Sainani, 2018; Xu *et al.*, 2019), debt (Mobbs, 2018; Schopohl, Urquhart and Zhang, 2021), merger and acquisition (Ferris and Sainani, 2021). CFOs are highly likely to influence a firm debt maturity policy as it is a significant financing decision besides cash holding, financing, and investment. CFOs are becoming part of corporate strategy design and execution teams under CEOs (Datta and Iskandar-Datta, 2014) and often act as executive board members in UK firms (Florackis and Sainani, 2018). Debt maturity decision falls under

CFO's core responsibility due to their impact on the cost of capital (Dang and Phan, 2016) and refinancing risk (Harford, Klasa and Maxwell, 2014). Empirical evidence documents that CFO influences are more significant than CEO influences regarding accounting and financial decisions, e.g., financial leverage, earnings management, and bank loans (Xuefeng Jiang, Petroni and Yanyan Wang, 2010; Frank and Goyal, 2011; Francis, Hasan and Wu, 2013; Ham *et al.*, 2017). Firm-induced CFO risk-taking incentive has been found to influence short-term debt issuance significantly; this CFO influence is also more substantial than CEO influence (Chava and Purnanandam, 2010).

Among managerial attributes, prior researches document that CEO gender influences capital investment decisions (Huang and Kisgen, 2013), firm risk-taking and capital allocation decision (Faccio, Marchica and Mura, 2016), firm short and long term performance (Amore, Garofalo and Minichilli, 2014; Doan and Iskandar-Datta, 2020), quality of firm financial reporting (Barua *et al.*, 2010; Francis *et al.*, 2015), and bank loan contracting (Francis, Hasan and Wu, 2013). Considering the findings of prior studies on gender-based behavioural/psychological differences in overconfidence, risk tolerance, and/or ethical understandings, I expect that gender of top management team, specifically CFO, should have significant influence on debt maturity structure. Female representation in senior level management have significant impact on capital funding through resource dependency and offering expertise unlike board (McGuinness, 2019). Female is found relevant for debt maturity decision in previous studies. Datta, Doan and Toscano (2021) show with USA firm data that female CFOs are significantly positively relevant to short-term debt that will mature within 3 to 5 years. On contrary, according to bank loan literature, female CFOs receive favourable price and non-price terms on bank loans, eventually choose long term loan (Francis *et al.,* 2013), due to their financial disclosure upfront, post loan improvement and better monitoring (Francis *et al.,* 2013; Janahi, Milla and Voulgaris, 2021). This study focus on this debate from the UK firm context.

This study empirically examines female CFO and short-term debt decisions with a dataset of all nonfinancial listed firms on the London Stock Exchange from 1999 to 2019. UK firms provide a unique setting for several reasons. First, UK firms usually have lower leverage (Rajan and Winton, 1995; Antoniou, Guney and Paudyal, 2006;

Dang and Phan, 2016) and shorter debt maturity (Datta, Iskandar-Datta and Raman, 2005; Faccio, Marchica and Mura, 2016) compared to USA firms. This practice of lower total debt and more reliance on short-term debt in UK firms are particularly relevant for analysing Myers' underinvestment (1977) and Diamonds' liquidity risk (1991,1993) linked with the managerial discretion. Second, UK firms have more females in senior management than the USA firms. The Hampton-Alexander Review, a UK government-backed review, is determined to achieve a 33% target for women on boards and in leadership teams of FTSE 350 companies by 2020. However, Cranfield University Report (2019) notes symbolic recruitment cases of female managers even by big UK firms that leads to consequent failure on progressing female in the boardroom. Focusing on gender based risk difference in managers may be a plausible way to pave path for effective inclusion of female in top management. On top of that, according to the "Global Gender Diversity 2022" report[32], UK-firms are generous to include female directors (46.6%) as board members whereas female representation in the top executive positions (13.5%) is bare minimum. This female scarcity in top position raises the multiple board siting case by female directors (2.2 on average) much higher than male directors within UK-firms (1.8 on average). Female representation in the executive positions of the UK-firms requires rigorous studies to progress over current status. Third, most UK CFOs are board members in own (80%) and others firms which is not that much phenomenon in the USA (Florackis and Sainani 2018); thus, board member UK CFOs are expected to be more influential in strategic decision making as well as negotiating higher competitive salaries (Mobbs 2018). Furthermore, non-executive board membership in other external firms offer UK CFOs opportunities to enhance their professional network and expertise. In summary, the UK firms provide an exclusive set up to investigate how CFO attribute nurture CFO risk attitude that influence firm financial decision like debt maturity structure in moderation by CEO and board of directors with financial expertise. Following resource dependency theory, I expect that skill of financial expertise, such as lower costs in acquiring information concerning financial transactions and the associated risks (Harris and Raviv, 2008; Minton, Taillard and Williamson, 2014), will be more effective in monitoring and advising roles in terms

[32] Global Gender Diversity 2022, BoardEx, Altrata July 2022.

of financing decision, particularly with unnecessary even value eroding debt maturity decisions.

The short-term debt ratio has been widely used in literature as a proxy for risky debt maturity (Chava and Purnanadam, 2010; Datta, Doan and Toscano, 2021; La Rocca, Neha Neha and La Rocca, 2019) is the dependent variable of this study. CFO gender is the primary test variable, whereas CFO age and experience will be kept as control variables, as literature shows that these attributes have influence on risk preference. Firm-level determinants of debt maturity are considered as control variables in the analysis. Further, as CFO is team member in senior management, the study considers CEO and board-related relevant features as control variables. Specifically, I am interested in observing the interaction between a female CFO and financial expert CEO and board of directors.

This study presents the first empirical investigation on the female CFOs and dent maturity decision in the context of the UK firms where CFOs are mostly executive board members. Furthermore, the study explore the interplay between the female CFO and the financial expertise of CEO and board of directors for firm debt maturity policy. With a dataset of 7255 listed firms in London Stock Exchange from 1999 to 2019, the results show that female CFOs take more short-term debt compared to male CFOs, following the upper echelon theory. Further analyses show that financial sector expert CEOs and boards of directors curtail female CFOs' short-term debt taking. In subsample analyses, such negative association is significant only for firms with lower leverage ratio, and lower CFO tenure, suggesting that female CFOs are not risk taker (that might prone them to take more short-term debt considering its refinancing risk) rather it is their mere ethical attitude to receive external monitoring with refinancing. Finally, I find that CFO stock option as a significant factor to alleviate positive association between female CFOs and short term debt, as with more stock option, CFO turns to be more of a shareholder and may prone to avoid unnecessary external supervision.

I offer a plausible explanation for the positive association between female CFO and short term debt ratio in the UK-firms. Similar to the findings in the US-firm studies

(Datta, Doan and Toscano, 2021), female CFOs in the UK-firms issues more short term debt due to their mere ethical choice and no disagreement for frequent external scrutiny while refinancing their projects. However, I attempt to understand whether female CFOs are constraints by firms' financial capability and eventually leads them to short term debt taking. Financial flexibility of firm poses a limit on the choice of debt maturity of the firms; only firms with good financial health can afford to choose between different debt maturities. Firm with financial constraints are compelled to choose short term debt maturity due to its less credibility to pay back. This common practice helps us to check whether female CFOs are compelled to choose short term debt or they willingly opted for short term debt by splitting my sample based on firm financial constraints. I conduct two tests to explore this possibility. First, I measured firm financial constraints based on leverage ratio. Second, I measure financial constraints based on the White and Wu Index. I find the positive relation between female CFO and firm short term debt is significant only for the sample of unconstrainted firms for both cases. This confirms that female CFOs are (1) willingly engaged in short term debt taking as their decision are not bounded by the firms financial constraints and (2) female CFOs in the UK firms are not risk taker contradicting the findings of McGuinness (2019) in the Chinese firm context. Due to data unavailability, I could not analyse and rule out gender base credit discrimination scenario, however, considering the UK bank loan literature on female entrepreneur (Pavlova and Gvetadze, 2023; Sena *et al.,* 2012; Kwong *et al.*, 2012) and female led firms (Xu, Li and Chang, 2016; Alesina *et al.*, 2013; Bellucci *et al.*, 2010), I could not undermine the possibility of credit constraints faced by female CFOs and thereby sticking to recurring short term debt decision.

Furthermore, I find that financial sector expert CEO and board of directors moderates the firm short term debt taking decisions of female CFOs. The findings show that the presence of financial sector expert CEO and board of directors functions as an robust monitoring tool for the female CFOs, and moderate the decisions on the firm's financial issues like debt maturity. Managerial behaviour can be disciplined by a simple corrective governance system, i.e., better resourced CEO/top management and board representation. Financial sector experts have expertise skill to estimate firms cost of

capital and risk management (Harris and Raviv, 2008; Minton, Taillard and Williamson, 2014). On top of that, they have networks with financial institution to provide correct support while arranging favourable financing terms for the firm. as I observed female CFOs are significantly taking short term loan while firm has no financial constraints, a prudent sector expert will attempt to utilise the financial health of firm to tap for long term funding in lower rate rather than mere show-off of external clarity. The findings on robust monitoring role of financial expert CEO and board on female CFOs' debt maturity decision is consistently significant for all models.

To ensure my findings are not driven by omitted variable bias, I control for observable CFO, CEO, and board characteristics such as CFO age, CFO Financial sector experience, CEO Chair dummy, board size, and board independence. The results are robust to include these controls and alternative specifications. Moreover, the results remain consistent after controlling for firm and year fixed effects. This further alleviates potential concerns that my results are driven by unobserved time-invariant heterogeneity. To understand CFO's managerial discretion with respect to CEO power and dominance, I examine the relationship between the female CFO and firm debt maturity structure by splitting the sample into firms with (1) CFO-CEO Co-option and (2) CFO-CEO relative pay. The positive relationship between female CFOs and short term debt ratio is significant in cases where CEO power is less pronounced and CFO tenure is higher than CEO tenure. The later finding evident the principles of reciprocity between CEO and CFO as well as support the similar finds to my other two empirical chapters mentioned earlier in this thesis.

However, firms may not randomly choose a female CFO and the results may suffer from endogeneity issues; thus, I run a battery of robustness and endogeneity tests, e.g., Heckman two stage least square method, propensity score matching, and sample based on CFO transition firms only are done to test the sensitivity of results. First, I use Heckman's (1979) two-stage model to test any potential selection bias in similar way that is done in prior study on female executives (Faccio, Marchica and Mura, 2016). Second, I report covariant results and after match regression results with the propensity score matching approach to compare debt maturity structure across pairs of female firm-years and matched male firm-years with similar firm characteristics.

Finally, I estimate the same baseline model only with firms with experience with male and female CFOs over time. The results are consistent with the findings of prior studies on female CFOs and short-term debt decision; that is, female CFOS takes more short-term debt than their counterpart. Also, I find that the skills of financial expert directors lead to counteracting female CFOs' decisions as an indicator of a better understanding of risks and financing choices that facilitate the implementation of timely and less costly recapitalization.

To the best of my knowledge, this is the first study to investigate on the contemporary debate on female CFOs and firm debt maturity policy in the context of the UK. Furthermore, the study evident on CFOs being moderated by financial sector expert CEO and board of directors. The contributions of this study are fourfold. First, this paper contributes to the empirical literature by studying how managerial attributes influence firm debt maturity decision (Datta, Doan and Toscano, 2021; La Rocca, Neha Neha and La Rocca, 2019). Most existing literature primarily focuses on how CEO attributes affect firm financial policies. Despite their significance in the firm financial decision (for example, Florackis and Sainani, 2018, Xu *et al.*, 2019), debt (Mobb, 2018; Schopohl, Urquhart and Zhang, 2021), merger and acquisition (Ferris and Sainani, 2020) very few studies focus on CFOs. Second, this study contributes to the growing literature on gender-based differences in financial decision-making and corresponding outcomes in UK firms, which bridges the gap between behavioural and traditional finance literature. I extend this limited literature by examining the importance of female CFOs and how their incentives are translated in financial decisions. This study is related to and builds upon the studies of Datta, Doan and Toscano (2021), La Rocca, Neha Neha and La Rocca (2019), Francis *et al.* (2013), Chava and Purnanandam (2010), Custódio and Metzger (2014). Datta, Doan and Toscano (2021) show that Female CEO and CFO issues shorter term debt compared to their male counterpart in the US-firms; however, unlike my study, they do not present findings on the moderating role of financial sector expert CEOs or board of directors on CFOs' debt maturity decision. Francis et al. (2013) evident female CFOs enjoy longer term debts due to their accounting and financial transparency. However, their study is based on the USA context, whereas, UK CFOs are found not significant to attain accounting transparency (Arun *et al.,* 2015) so their link with receiving favourable loan terms , if any, needs

further investigation. Chava and Purnanandam (2010) find that firm-induced option-based risk rewards are more critical than CFO risk rewards in determining firm debt maturity decisions; however, I utilize firm exogenous risk preference criterial, gender of CFOs, to explain the managerial decision making for firm debt maturity structure. Custódio and Metzger (2014) show that the financial expertise of CEOs can influence firm policies and have a higher general ability index calculated based on their range of past careers; in this study, rather than showing the direct impact of financial expert CEOs, I observed the moderating role of such CEOs on CFOs and firm debt maturity decisions. Third, Despite CFO being an active voice on the board in the UK and a leading decision taker in firm financial management, empirical studies on firm financial decisions primarily focus on the USA-firms and CEOs; further evidence from the UK-firms is helpful in developing a broader view on firm CFOs and debt maturity decision as (1) UK CFOs mostly sits on their board and (2) UK female CFOs tends to keep low leverage whereas UK firms, in general, keeps low leverage and more short term debts compared to the USA firms. Finally, this study contributes to the ongoing debates on the importance of directors' financial backgrounds in shaping their monitoring and advising roles (Aebi, Sabato and Schmid, 2012; Erkens, Hung and Matos, 2012; Minton, Taillard and Williamson, 2014; Adams, Akyol and Verwijmeren, 2018) with particular attention to CFOs. I show that financial sector CEO and board of directors only moderate female CFOs' debt maturity decisions in financially unconstrained firms. The study upholds the evidence that financial expert-inclusive governance may limit value-eroding managerial decisions and encourage strategies to ensure long-term value.

The remainder of the study Is organised as follows. Section 2 discusses the related literature and the development of the hypotheses. Section 3 describes the data, how I construct my main variables of interest and moderating variables, and presents the summary of descriptive statistics. Section 4 presents my main empirical findings from the analyses, offers probable explanations for my research findings, and deals with the endogeneity issues. Finally, Section 5 presents a conclusion on the findings.

5.2. Related Literature and Hypotheses Development

Upper echelon theory (Hambrick and Mason, 1984) first proposed that managerial traits and experience may influence firm outcomes for both firm performance and strategy choices. Managerial attributes and experience set perspectives regarding honesty and ambiguity tolerance for individual managers, which in turn influence those managers' choices when solving complex problems, subsequently leading to different outcomes for similar firms (Hambrick and Mason, 1984).

In this study, I investigate the contemporary debate on female CFOs and firm debt structure decision from the UK context. The study is motivated by the upper echelon theory and the interdisciplinary theories from business and psychology literature to address the research question. The study's theoretical framework is inspired by upper echelon theory (Hambrick and Mason 1984), which suggests that managers partially influence organizational outcomes with diverse characteristics. This theory provides a generalized explanation irrespective of attributes and firm policies. Thus, the study refers to psychology literature to link individual attributes of CFO with CFO risk preference to develop a conceptual framework on how each attribute may influence firm policy. However, the study also shares a common interest with agency theory as the theory addresses managerial influence in firms through an agency conflict framework. Considering the assumption (managers are risk averse) and conflict mitigation process (align manager's interest with the firm through compensation and monitoring) of agency theory, this study's research question cannot be fully addressed with agency theory.

Gender differences in risk attitudes have long been studied in sociology, psychology, and behavioural economics. Literature notes females are generally more risk-averse (Barber and Odean, 2001; Croson and Gneezy, 2009; Charness and Gneezy, 2012). Recently, business researchers have been interested in investigating the role of gender differences in corporate decisions and show mixed evidence (e.g., Huang and Kisgen, 2013; Francis *et al.*, 2013; Faccio, Marchica and Mura, 2016). This study aims to extend this line of research.

5.2.1. Significance of Debt Maturity Decision

Debt maturity structure is a key corporate decision for both the firms and managers in several ways. First, debt maturity is a essential component of the cost of capital (Baker, Greenwood and Wurgler, 2003; Dang and Phan, 2016) and interacts with the choice of debt source, level, and covenants (Barclay, Marx and Smith, 2003; Billett, King and Mauer, 2007). Short-term debt is less costly due to its lower transaction costs (Edwards, Harris and Piwowar, 2007) and a lower liquidity premium (Bao, Pan and Wang, 2011) than long-term debt. Second, short-term debt can effectively lessen the underinvestment problem, risk-shifting incentives, and agency costs of debt (e.g., Myers, 1977; Barnea, Haugen and Senbet, 1980; Childs, Mauer and Ott, 2005; Antoniou, Guney and Paudyal, 2006). Third, debt maturity directly influences other financial policies in a firm, e.g., liquidity (Harford, Klasa, and Maxwell 2014) and investment under normal and constraint conditions (Aivazian, Ge and Qiu, 2005; Duchin, Ozbas and Sensoy, 2010). This decision influences stock price crash risk in the short term (Dang and Phan, 2016) and shareholder wealth in the long term (Datta, Iskandar-Datta and Raman, 2000). The inverted relationship between short-term debt and future crash risk is more pronounced for firms suffering from poor monitoring, weaker corporate governance, higher information asymmetry, and greater risk-taking (Dang and Phan, 2016). Fourth, short-term debt exerts more monitoring on managers as the debt contract has to be renegotiated at each refinancing point (Datta, Iskandar-Datta and Raman 2005). Thus, a firm's governance authority may closely observe debt maturity structure (Ben-Nasr, Boubaker and Rouatbi, 2015). However, short-term debt mitigates agency costs of debt arising from compensation risk (Brockman, Martin and Unlu, 2010). The intense monitoring benefits of short-term debt should improve firms' operating and stock price performance and increase managers' future payoffs (Dang and Phan, 2016). Considering these benefits, use short-term debt might be preferable to save the cost of financing, reduce investment distortions, improve firm performance, and ultimately increase managerial payoffs.

Misuse of debt maturity choices causes problems. First, short-term debt allows managers to utilize assets for personal goals (Hart and Moore, 1994). Second, short-term debt invites rollover and refinancing risk (Diamond, 1991). Validating the rollover

risk hypothesis, Wang, Chiu and Peña (2017) find that one standard deviation increase in the ratio of short-term debt to total assets is associated with an increase of 11.44 basis points in loan spread, representing an additional $0.644 million in interest expenses. Firms with greater exposure to rollover risk have lower credit quality; this effect is more substantial among firms with speculative-grade ratings, declining profitability, and during recessions (Gopalan, Song and Yerramilli, 2014). Third, short-term debt subjects its management to greater scrutiny by debt markets (Calomiris and Kahn, 1991; Rajan and Winton, 1995; Leland and Toft, 1996; Stulz, 2000). Therefore, from a risk-averse manager's perspective, short-term debt is perceived as a riskier financing choice and less preferred than long-term debt (Chava and Purnanandam 2010).

Due to the conflict between a firm's preference (for managerial monitoring) and a manager's preference (for risk-taking) regarding debt maturity choice, it is critical to study the determinants of debt maturity both from firm and managerial perspectives.

5.2.2. Firm-Level Determinants of Debt Maturity

Several non-mutually exclusive theories have been empirically tested for firm-level determinants of debt maturity - agency theory, information asymmetry, tax minimization, matching theory, and equity market condition theories (Antoniou, Guney and Paudyal, 2006). Agency theory suggests that firms issue debt to ensure external monitoring of managers through debt holders to mitigate agency conflicts. However, the highly leveraged firm may face an underinvestment problem that can be mitigated by shortening debt maturity (Myers, 1977). Three firm factors are frequently set for agency theory testing for debt maturity – firm size, growth, and asset maturity (Antoniou, Guney and Paudyal, 2006).

On the other hand, information asymmetry theory has two distinguished explanations for debt maturity. According to Flannery (1986), a firm's debt maturity choice can signal insiders' information about the firm financial quality as firm managers are systematically better informed than outside investors; the firm is expected to select short-term debt only and if only when a firm can afford rolling over the cost of short

term debt, otherwise, the firm will self select long term debt. However, Diamond (1991) describes that while deciding on debt maturity, the firm has to trade-off between lower borrowing cost and liquidity and refinancing risk subject to credit rating on the refinancing date. Poorly-rated borrower firms with a high probability of default will self-select short-term debt, whereas high-rated firms can issue low-cost, short-term debt instruments like commercial paper. In contrast, moderate-quality firms fall in between the maturity spectrum. Leverage, liquidity, firm risk, and earnings quality are the firm factors that are frequently used to test this theory (Stohs and Mauer, 1996; Antoniou, Guney and Paudyal, 2006; Huang, Tan and Faff, 2016). Tax minimization theory refers to the tax benefit earned from interest and suggests that the term structure of interest rate and debt maturity has a positive relationship (Brick and Ravid, 1985). Matching theory suggests that debt maturity should match asset maturity to reduce under or overinvestment problems (Myers, 1977).

Empirical studies investigate a firm's incentive behind certain types of maturity in line with these theories. Besides the financial benefits of debt, firms issue debt when agency conflict is high (Kim and Sorensen, 1986; Rakesh and Lakshmi, 2013; Kokoreva and Ulugova, 2013); debt works as an external monitoring tool on managers and endogenously mitigate managerial discretion cost (Hart and Moore, 1994; Stulz, 2000). Moreover, such debt adjustment in a firm's capital structure mainly shortens debt maturity (Leland, 1998; Lasfer, 1999). However, the firm must consider the trade-off between underinvestment and liquidity-refinancing risk while choosing debt maturity. On the other hand, information asymmetry theory indicates that a greater degree of asymmetric information promotes opportunistic behaviour by managers while using financial leverage, generating conflicts of interest and affecting firm credit quality and increasing the liquidity risk and/or default probability (Flannery, 1986).

Besides testing theories, prior studies also investigate on firm-level determinants of debt maturity. For example, firm size is positively related to debt maturity due to asset structure (Titman and Wessels, 1988; Barclay and Smith, 1995). Firms with high growth opportunities take more short-term debt to refinance at a favourable rate when credit quality improves soon (Barclay and Smith 1995). A firm's debt level has mixed evidence (Mitchell, 1993; Kim, Mauer and Stohs, 1995). A firm's quality is positively

associated with debt maturity). (Stohs and Mauer, 1996) find that big-sized, less risky firms with higher asset maturities use more long-term debt. They also note that debt maturity varies inversely with earnings shock and the effective tax rate of firms. They observe strong non-monotonic relation between debt maturity and bond rating; firms with high or very low bond ratings use short-term debt. Antoniou, Guney and Paudyal (2006) observe the determinants of the maturity structure of debt of French, German, and British firms addressing whether the difference in financials and legal practice impact debt maturity structure in addition to firm-level factors. The authors choose a model that incorporates the aspects of three major theories (tax considerations, liquidity and signalling, and contracting costs) of debt maturity and controls for capital market conditions. The results confirm the applicability of most theories for the UK firms, whereas France and German firms show mixed results.

In summary, among firm-level determinants of debt maturity, firm size, leverage, market-to-book value of the firm, asset maturity structure, earnings volatility, abnormal earnings, research and development (R&D) expenses, and its dummy variable, credit ratings are found to be significantly influencing maturity decision.

5.2.3. Managerial Attributes and Debt Maturity

The literature review on debt maturity shows that firms and managers can have diverse incentives while deciding on debt maturity. Empirical studies find that firm-induced risk-taking incentives for managers through equity options (Chava and Purnanandam 2010) as well as managerial inside debt (Dang and Phan 2016) are positively related with short-term debt in the firm. Also, managerial overconfidence (Landier and Thesmar, 2009; Huang, Tan and Faff, 2016; Ataullah, Vivian and Xu, 2018) and female presence in top management (Datta, Doan and Toscano, 2021; La Rocca, Neha Neha and La Rocca, 2019) have positive association with short term debt. On contrary, bank loan literature evident that female CFOs receive favourable terms from banks due to their transparency and choose longer term debt (Francis *et al.,* 2013).

Concerning upper echelon theory, empirical studies suggest females in top management teams are keener to take short-term debt compared to their male counterparts (Datta,

Doan and Toscano, 2021; La Rocca, Neha Neha and La Rocca, 2019) due to their ethical sensitivities to align with shareholders interest while making debt maturity decision. Furthermore, female management benefits from higher credit ratings, allowing them to balance the refinancing risk associated with short-term debt (Datta, Doan and Toscano, 2021). However, due to their accounting and financial transparency (Janahi et al., 2021), female CFOs receives favourable price and non price terms from bank (Francis et al., 2013).

Concerning agency theory, empirical studies perceived managers are risk-averse, in general, and tend to avoid short-term debt due to its risky nature of refinancing. Theoretically, the equity option is prescribed as an efficient tool for aliening shareholder-manager's interest through its convex payoff structure (Jensen *et al.*, 1976; John and John, 1993); thus, it can be used as a tool to motivate managers to adopt more risky policies. Managers will take risky firm policy when a manager wants to increase the firm's risk based on their portfolio of shares and options. Vega measures the sensitivity of the manager's portfolio in response to an increase in the firm's stock return volatility. The higher the vega, the more gain managers can expect from their portfolio. Thus, it is expected that managers with high vega will take more risky firm policies than managers with low vega.

Chava and Purnanandam (2010) provide evidence that CFO's vega positively relates to risky debt maturity policy. The authors also observe that CEOs' risk status significantly determines broader capital decisions, e.g., capital structure and liquidity policies. CFOs' incentives are more influential in complex debt and accrual management decisions. Brockman, Martin and Unlu (2010) document a negative (positive) relation between CEO delta (vega) and short-term debt[33].

[33] incentivizing managers through equity option has some drawbacks; possibilities are there that managers may choose to shift into riskier corporate policies at the expense of creditors, thus aggravating creditor-shareholder agency conflicts (Jensen and Meckling 1976; John and John 1993). Recent empirical works note that highly option-based compensation for under-diversified managers may lead to higher risk aversion in practice (Billing *et al.* 2019). A manager should be encouraged to maintain a healthy risk-taking attitude, especially in a growth firm. However, risk intervention through compensation is sometimes detrimental to the firm's performance.

Dang and Phan (2016) present that CEO inside debt is positively related with short-term debt; this association is prominent in financially unconstrained firms that face lower refinancing risk. Pension benefits and deferred compensation are termed "inside debt, " similar to debt financing firms' fixed obligations to pay managers in the future. In case of insolvency, these claims will be honoured as equal to those of unsecured creditors (Sundaram and Yermack, 2007; Cassell *et al.*, 2012). The authors also note that CEO inside debt reduces the cost of debt financing. Alternatively, managers with inside debt have weak incentive alignment with shareholders, which may lead to more conservative investment and financial policies (Cassell *et al.* 2012). Both equity options and inside debt are a source of firm-induced managerial risk preference and significantly influence debt maturity decisions.

Besides firm-induced equity options and inside debt, managerial overconfidence has been tested in the debt maturity context; these studies show mixed results. The positive relationship is explained as overconfident managers depending on short-term debts to benefit from their overconfident viewpoint on firms' prospects (Landier and Thesmar, 2009); it is less subject to perceived mispricing (Huang, Tan and Faff, 2016). The later study documents that overconfident CEOs keep a higher proportion of short-term debt (due within 12 months) in their capital structure; this firm demand side result remains robust even with alternative drivers from the debt supply side. In contrast, Ataullah, Vivian and Xu (2018) observed that managerial overconfidence lessens the underinvestment problem in the first place, which is perceived as the firm incentive for issuing short-term debt, and increases debt maturity. Growth firms show stronger positive CEO overconfidence-debt maturity relations than low-growth firms. They use words (what they say) and actions (what they do) based on time-varying overconfidence. Finally, they observe that CEO overconfidence is more likely to influence debt maturity than other executives' overconfidence.

In summary, traditional firm-level determinants cannot alone explain variations in corporate policies (Chava and Purnanandam 2010); managerial discretion is significant in most cases. Concerning debt maturity, literature address such discretion primarily through the risk attitude of the manager and lenders' preference for loanee. However, considering the risk and cost associated with short-term debt, crosschecking through

financial expertise monitoring may help escape unnecessary involvement in refinancing by a female CFO due to mere ethical show-off. Including financial expertise at the board can be a straightforward solution.

5.2.4. Moderating Role of Financial Expert CEO and the Board

The Board of Directors are apex governance body to ensure efficient corporate resource allocation (Fama and Jensen, 2005). The board advises the CEO and management to maximize firm value and monitor and control principle-agent conflicts (Adams and Ferreira, 2007). Financial expertise is a critical element of the human capital of directors that can potentially affect their monitoring and advising ability on the management team (Burak Güner, Malmendier and Tate, 2008; Kor and Sundaramurthy, 2009). Financial expert directors are better at communicating with the capital market (Custodio and Metzger, 2014), understanding the complex business models, and benefit from lower costs in acquiring information concerning financial transactions and the associated risks, especially for banks (Harris and Raviv, 2008; Minton, Taillard and Williamson, 2014) and reducing the verification costs of financial information, thus safeguarding the interests of capital providers and facilitating external financing (Harris and Raviv, 2008).

Additionally, this skill advantage directly impacts financing choice via external financing (Gilani, Keasey and Vallascas, 2021). As the board spends a significant amount of time on issues related to capital raising (Burak Güner, Malmendier and Tate, 2008; Huang and Ritter, 2009), the presence of a financial expert in that team can improve the relationship with capital providers[34] (Gilani, Keasey and Vallascas, 2021). Board financial expertise reduces the verification cost of financial information,

[34] Kroszner and Strahan (2001) and Guner, Malmendier, and Tate (2008) suggest that the appointment of board-level financial experts (in their cases, bankers) could produce misaligned incentives and reduce firm value. Due to corporate governance guidelines' desire to minimize overly risky decision-making (e.g., see the Higgs, 2003), outside directors in the United Kingdom are rarely compensated by performance-related contracts, such as stock options. For these reasons, the possibilities for board members, including professionally qualified financial experts, to extract "economic rents" and engage in "risk-shifting" activities at the expense of other stakeholders are likely to be less acute in the UK insurance industry.

safeguards the interest of capital providers, and facilitates external financing in the capital markets(Raheja, 2005; Burak Güner, Malmendier and Tate, 2008). Thus, I expect the higher presence of financial expertise will opt for prudent financing due to a better understanding of risks (Adams and Jiang, 2020).

Board financial expertise is one of the mechanism to bring necessary and balanced resource expertise to the firms that firms would not have gained in the given time frame. This study observes the financial sector expertise of the CEO and board of directors. Prior studies on board expertise mostly show positive outcomes on firms' policy and performance; board experience diversity (Feldman and Montgomery, 2015) and accounting and finance expertise (Bédard, Coulombe and Courteau, 2008; Chan and Li, 2008) increase corporate value. Within the banking industry, the diversity of board members in resource dependency roles, such as business experts, exceptional support, or community leaders, significantly improves merger and acquisition performance (Hagendorff, Collins and Keasey, 2010). However, if there is a high level of decision uncertainty, sector expertise diversity in the board may undermine effective decision-making and consequently increase the probability of firm failure (Almandoz and Tilcsik, 2015). Furthermore, experts in different domains might lead to "misalignment" and negative implications on firm performance; it might also motivate appropriate board reconfiguration and affect firm performance. Diversity in science, medicine, and engineering within academic expertise produces positive market reactions (White *et al.*, 2014).

In this study, I am interested to observe the moderating effect of the CEO and directors' financial expertise on the association between female CFO and firm debt maturity decision. The growing number of financial scandals gave substantial importance to financial experts on the board of directors. To overcome these scandals, different institutions issued many corporate governance reports (e.g., CalPERS in 1997, Blue Ribbon Commission report in 1998, Sarbanes-Oxley Act (SOX) in 2002 and NYSE in 2004). Such reports mainly recommend best corporate governance practices, such as regarding board members' financial expertise. Indeed, after the 2002, firms included more financial experts in their boards. Some researchers (Johl, Kaur and Cooper, 2015; Fang, Francis and Hasan, 2018; Irianto and Anugerah, 2018) define a financial expert

as an individual holding an accounting/ finance degree or with a five-year experience in audit, finance, or compliance functions. Financial experts' role is often highlighted as to guarantee transparency, integrity and accountability (Johl *et al.*, 2015). In this study I highlighted financial sector expert as they are more likely to utilize their previous career network to ensure suitable financing for firms.

Furthermore, I include CEO moderation in this studies as prior studies, based on CEO power and dominance hypothesis, find that CEO is less willingly to delegate financial decision-making authorities to CFO if CEO have expertise knowledge (accounting and finance education and experience). On top of that, prior studies shows that financial expert CEOs have direct impact on firm financial policies, for example, hold less cash, more debt, and manage financial policies more actively, and most important one is, financial expert CEOs are able to raise external funds even when credit conditions are constricted (Custódio and Metzger, 2014). This findings motivated us to check whether financial expertise of CEO and board of directors moderates the debt maturity decision that female CFO takes.

5.2.5. Hypotheses Development

Following upper echelon theory and agency theory, prior studies show that top management have discretion over their choice of firm's leverage and covenants when issuing debt (Schopohl, Urquhart and Zhang, 2021; Datta, Iskandar-Datta and Raman, 2005). Considering agency issues, choice of debt maturity by a self-interested manager might different from the expected and optimal level of debt for shareholders' value creation. In particular, long term debt shields managers from frequent external monitoring for an extended period than that of a short-term debt due to its refinancing needs; thus, a self-interested manager might have greater incentives to lengthen the firm's debt payback period and consequently end up with suboptimal debt maturity structure choices (Datta, Iskandar-Datta and Raman, 2005; Brockman, Martin and Unlu, 2010). Furthermore, assuming female managers are more aligned with shareholders expectations due to their inherent ethical tendencies , female might prefer short-term debt to allow frequent in external monitoring while refinancing. Thus, based

on the genuine inherent tendency of female managers in general, I expect that firms with female CFOs have relatively shorter maturity of debts than that of their counterparts.

However, following gender discrimination theory, there could be an alternative explanation on why female CFO might be compelled to bound themselves within a particular set of debt maturity choice, particularly short term debt. Long-standing research suggests lenders might discriminate in the credit market, basing their loan decisions on irrelevant factors like the borrower's gender or race. This "taste-based" bias, described by Becker (1957), can affect loan terms and pricing. For instance, studies by Xu, Li and Chang (2016), Alesina et al. (2013) and Bellucci et al. (2010) show female-led firms struggle with loan access, often facing higher rates and stricter terms even if their loan applications are successful. On top of that, female loan applicant, in general, face higher rejection rate compared to male applicant. Prior studies on the UK female entrepreneur show that female led firm face discriminatory credit facilities (Pavlova and Gvetadze, 2023; Sena et al., 2012; Kwong et al., 2012); whereas, such discrimination to discourage for even loan application could have been be avoided if legislation includes an anti-discrimination clause regarding credit access (Bertrand and Perrin, 2022). Kleinert and Mochkabadi (2021) highlight gender bias in UK crowdfunding, demonstrating how investors react differently to signals from male and female entrepreneurs. Risk aversion might be the secret weapon of female borrowers during financial crises. Studies by Cowling et al. (2020) and Wellalage et al. (2021) show that female loan applications were more successful in the UK after the 2008 financial crisis and during the COVID-19 pandemic. This could be attributed to women's tendency towards conservative borrowing and risk management, making them more attractive to lenders during times of uncertainty. However, even in these situations, subtle gender bias can still disadvantage women when it comes to collateral valuation.

Considering the theoretical discussion and literature on female management for firm debt maturity structure, my first hypothesis is:

H1A: Female CFOs adopt a shorter debt maturity than their male counterparts.

An alternative literature strand is the impact of the difference in risk tolerance between males and females in general and financial decisions; female executives adopt safer corporate policies (see Francis et al., 2015; Faccio, Marchica and Mura, 2016). Short-term debt is a risky choice for a firm. In general, CFO attributes that encourage taking more risk are expected to have a positive relation with issuing more short-term debt within similar firms. A risk-averse manager is expected to avoid short-term debt considering the costs of liquidity/refinancing risk (Diamond, 1991), rollover expense, and frequent external monitoring (Brockman, Martin and Unlu, 2010). Based on this argument, female CFOs are more likely to adopt a more extended debt maturity structure.

However, considering the bank loan literature, bank highly depends on the accounting information to assess borrowers' credit risk that determine price and non-price terms for the loan. Research shows banks value high-quality, conservative accounting in private debt deals, which female CFOs are often credited with delivering (Bharath et al., 2008; Sunder et al., 2009; Zhang, 2008; Francis et al., 2013). This perceived benefit translates into more favourable loan terms for companies led by female CFOs. In that case, female CFOs will prefer to arrange external financing through longer debt maturity compared to their counterpart.

H1B: Female CFOs adopt a longer debt maturity than their male counterparts.

Furthermore, I expect that the financial expertise of monitoring authority of female CFOs like CEO and board of directors will influence the association between female CFOs and firm short-term debt as they can influence the trade-off between the costs and benefits that conventionally drive the choice of the debt maturity decision of firms. Financial expertise is part of human capital that affects the monitoring and advising ability of the management team (Burak Güner, Malmendier and Tate, 2008; Kor and Sundaramurthy, 2009). Also, financial expert directors will facilitate firms with lower costs in acquiring information concerning financial transactions and the associated risks

(Harris and Raviv, 2008). Based on this argument, financial expert CEO and board members are more likely to impact the positive association between female CFO and firms' short-term debt.

H2: Financial sector expert CEO negatively moderates the relationship between female CFOs and firm debt maturity decision.

H3: Board with financial sector board members negatively moderate the relationship between female CFOs and firm debt maturity decisions.

5.3. Data and Method

5.3.1. Data

This study uses a panel dataset on the non-financial quoted companies in London Stock Exchange (LSE) main market from 1999 to 2019. The study period is restricted due to the availability of data. Following prior studies on CFOs (Florackis and Sainani, 2018; Schopohl, Urquhart and Zhang, 2021), non-financial firms are preferred as those firms are perceived to use short-term debt as monitoring tools over management, whereas financial industries that are already overburdened with strict regulation, do not need to use debt maturity mechanism for monitoring management. I use the BoardEx to track information[35] on managers and directors of all UK-listed companies. In the UK, firms do not maintain CFO titles uniformly. Following Florackis and Sainani (2018), I identify CFOs based mainly on the data item "individual role" and focus on the following labels: "CFO, chief financial officer, finance director (FD), group finance director (GFD) and executive director (finance)"[36]. Other firm-level data are collected from the Refinitiv (EIKON DataStream). Firms newly listed to the LSE and with less

[35] The information used for creating the CFO experience diversity index is obtained from BoardEx individual employment file.

[36] In contrast with the US firm, the UK firm has distinguished positions for CFO (or Finance Director) and treasurer; UK CFO usually sits on the board as a member and has complete control of finance, whereas the treasurer runs treasury department as head and reports to CFO directly (source: The Treasurer 2001).

than two years of market history are excluded from the study. Further, some firm years are also excluded due to the failure to cross-match between BoardEx and DataStream database and the unavailability of CFO past experience information. The final sample consists of 1608 unique firms and 2948 unique CFOs. Appendix C provides detailed variable definitions.

5.3.2. Methodology

Earlier studies consistently show a positive association between female CFOs and short-term debt. To explore how female CFOs impact firm debt maturity policy, first, I test the H1 to determine whether female CFOs affect firm short-term debt in my sample with the following Equation:

$$STD\ Ratio_{it} = \alpha_0 + \beta_1 * Female\ CFO_{it} + \theta' X_{it} + FirmFE + YearFE + \varepsilon_{it} \quad (1)$$

The dependent variable STD Ratio,t is the short-term debt ratio measured as the ratio of short-term debt to total debt (Huang and Kisgen, 2016) in the main models[37]. My primary interest variable female CFO is a dummy variable indicating if the CFO is female or 0 otherwise. X_{it} is a vector of control variables from three categories: *firm-level controls* (Johnson 2003, Datta *et al.* 2005, Brockman *et al.* 2010, Custodio *et al.* 2013, Harford, Klasa and Maxwell 2014; Dang and Phan 2016; Huang and Kisgen 2016; Ataullah, Vivian and Xu 2018) such as *firm size, market-to-book ratio, asset maturity ratio, leverage ratio, abnormal earnings, earnings volatility, and Altman Z score dummy*; *governance controls* (Florackis and Sainani 2018), such as *board size, board independence, institutional investors and CEO-Chairman dummy and CFO controls* (Schopohl, Urquhart and Zhang, 2021) such as *CFO Age, and CFO Financial sector expert dummy (CFO Finexpert).* All independent variables are at time t, indicating that they are in the same year concerning the dependent variable as the model captures

[37] literature provides multiple ways to define short-term debt - debt payable within a year (Scherr and Hulburt 2001), within three (Chava and Purnanandam, 2010), or five years (Huang and Kisgen 2016). Due to data unavailability, I considered debt payable within only one year in the sample. I use a second measure in the robustness check, calculated as the short-term debt minus the current portion of the long-term debt dividend by the firm's total debt.

managerial behaviours on firm policy (Ataullah, Vivian and Xu, 2018). The model also includes firm and year fixed effects (FE).

Firm size is widely applied as a proxy of asymmetric information and credit quality (Dang and Phan, 2016). Firm size and short-term debt is expected to be negatively related as large firms generally have better creditworthiness and less asymmetric information (Stohs and Mauer, 1996). Similarly, leverage and short debt are expected to be negatively related (Huang, 2016) as the firm with high debt will prefer longer-term debt to lessen refinancing and liquidity risks (Diamond, 1991; Johnson, 2003; Alcock, Finn and Tan, 2012). A positive association is expected between market to book value of the firm (MV/BV) and short-term debt as a high-growth firm (high MV/BV) is expected to use more short debt to mitigate the underinvestment problem (Myers 1977). Moreover, asset-debt maturity matching is expected, which implies a negative association between asset maturity and short-term debt. A firm with high earning volatility prefers long-term debt to avoid refinancing and liquidity risk; thus, earning volatility is expected to have a negative relationship with short-term debt (Kane *et al.*, 1985). Firms with sizeable abnormal earnings will use this to signal the market about the firm's potential (Flannery, 1986); thus, abnormal earnings are expected to have a positive relationship with short debt. Moreover, a firm with high Z-scores generally has higher creditworthiness and can borrow long-term (Brockman, Martin and Unlu, 2010); thus, a negative relationship between Z-score and short-term debt is expected.

Regarding board-level controls, a large board may face coordination challenges (Jensen, 1993) and ineffective managerial monitoring (Salloum, Azoury and Azzi, 2013), which can incentivize managers to avoid short-term debt that involves frequent monitoring (Briozzo, Cardone-Riportella and García-Olalla, 2019), I expect a negative relationship between board size and short term debt. Higher board independence substitutes external monitoring through short-term debt (Tosun and Senbet, 2020); thus, I expect that board independence and short-term debt have a negative association.

Furthermore, I attempt to understand the effect of female CFO in moderation with financial sector expert CEO (CEO Finexpert) as well as financial sector expert board members (Board Finexpert Ratio) as I expect them to utilize their expertise and

connections to improve firm finance policy in line with H2 and H3. The second stage models are similar to the first one except for the interaction terms of female CFO and CEO Finexpert and Board Finexpert Ratio.

$$STD\ Ratio_{it} = \alpha_0 + \beta_1 * Female\ CFO_{it} + \beta_2 * CEO\ Finexpert_{it} + \beta_3 * Female\ CFO * CEO\ Finexpert_{it} + \theta' X_{it} + FirmFE + YearFE + \varepsilon_{it} \quad (2)$$

In Equation (2), CEO Finexpert is a dummy variable taking a value of 1 if CEO has experience in financial sectors[38] before joining the current firm and zero otherwise. All other variables are similar to Equation (1).

$$STD\ Ratio_{it} = \alpha_0 + \beta_1 * Female\ CFO_{it} + \beta_2 * Board\ Finexpert\ Ratio_{it} + \beta_3 * Female\ CFO * Board\ Finexpert\ Ratio_{it} + \theta' X_{it} + FirmFE + YearFE + \varepsilon_{it} \quad (3)$$

In Equation (3), the Board Finexpert ratio is the ratio of the total number of financial sector expert directors on the board to the total number of directors. I identified financial sector expert board members similar to how I identified CFO and CEO financial sector experts (CFO/ CEO Finexpert). All other variables are similar to Equation (1).

Equations (1) to (3) may suffer from potential endogeneity as the model estimations assume that the female CFO is exogenous determinant of firm debt maturity. However, the selection of CFOs can be endogenous depending on the firm's requirement for female CFOs and the female CFO's willingness to work with the firm. Ideal research design would require the random assignment of firms into two groups, treatment and control groups, to facilitate comparison which is not feasible in this context. Thus, I pursue three ways to account for this endogeneity issues: (1) *Heckman two-stage least square method,* (2) *Propensity score matching*, and (3) *Transition firm CFOs.* While none of the endogeneity tests can unquestionably rule out the endogenous relationship between the female CFOs and firms' debt maturity, taken together, they provide strong

[38] Financial sector is identified from the employment profile of Directors from the Sector column whether CEOs have worked in Banks, Blank Check / Shell Companies, Insurance, Investment Companies, Life Assurance, Private Equity, Real Estate, Speciality & Other Finance.

evidence that the identified association between female CFOs and short-term debt is causal.

[Insert Table 5.1]

Table 5.1 Panel A provides key descriptive statistics. All financial variables are winsorised at the 1th and 99th percentiles to minimize the potential effect of outliers and/or coding errors. The table reports the number of observations, the means, the standard deviations, the minimum, quarter 1, quarter 2 (the median), quarter 3, and the maximum of the variables used in this study. The average CFO is 47 years old. The mean short-term debt ratio is 30.76%. The average firm in my sample reported total assets worth £1758 million and had a market capitalization of £1583 million, a market-to-book ratio of 0.5233, and a leverage ratio of 17.15%. The board-level data show that the average board size in my sample is 7.1152 and a well-balanced board with executive and non-executive directors (average board independence ratio equals 53.83%). The values of CFO variables are consistent with relevant CFO studies, such as Florackis and Sainani (2018), Ferris and Sainani (2020), and Schopohl, Urquhart and Zhang (2021). Firm-level values are consistent with debt maturity studies on the UK firms, such as Ataullah, Vivian and Xu, 2017; Antoniou, Guney and Krishna Paudyal, (2006).

[Insert Table 5.2]

A Pearson's pairwise correlation analysis for female CFO and control variables is reported in Table 5.2. As expected from the literature review, female CFO and short-term debt ratio have a strong positive association in the sample. Furthermore, all other independent variables have a significant association with short-term debt which justifies the selection of variables for the estimation model. Finally, the coefficients of CFO Finexpert, CEO Finexpert, and Board Finexpert ratio with short-term debt ratio are negative and significant, which primarily validates my expectation that directors' financial sector expertise implies finance policies like debt maturity decisions. These univariate results support that female CFOs take more short-term debt, but-financial sector expertise of the CEO and Board moderates the scenario in the reverse direction. The correlation coefficients between the independent variables are not very high, which suggests that the models are free from multicollinearity.

5.4. Empirical Results

5.4.1. Baseline Models

In this section, following upper echelon, agency and gender discrimination theory, I show the results of my investigation on whether female CFOs affect a firm debt maturity policy. Female CFO is the variable of interest, and I employ Equation (1) to test the relationship. The dependent variable is the short-term debt ratio as a proxy for the firm debt maturity structure. Further, I explore how female CFOs affect debt maturity by interacting with financial sector expert CEOs and the Board of Directors in Equations (2) and (3). In each model, I keep standard errors clustered at the firm level to account for within-firm correlations and apply firm and year fixed effects.

[Insert Table 5.3]

Table 5.3 Model 1 shows the regression results on the association between female CFOs and firm short-term debt ratio. As expected, by following upper echelon theory, the result supports a positive association between female CFOs and short-term debt. The results indicate that firms with female CFOs issue more short-term debt, ceteris paribus. This result supports the hypothesis H1. These results are similar to earlier USA studies on debt maturity and female executives (Datta, Doan and Toscano, 2021) where the authors reason that the female executives are more ethically committed and do not mind frequent external monitoring while short term debt refinancing.

However, my baseline findings contradicts the findings of Francis et al. (2013) where the authors evident USA lending banks' preference for female CFOs in terms of both priced and non-priced terms (i.e., obtain more favourable loan pricing, less collateral requirement, easy access to longer-term loan) due to their detailed financial disclosure upfront and better monitoring. It would be informative to contrast my findings with those in Francis et al. (2013) as the study. First, USA firms capital structures depends highly on leverage, particularly on bank loans, whereas, UK firms tend to keep lower leverage in capital structure and mostly depend on short term loan. On top of that, Female CFO in the UK firms are found to lower leverage ratio of firms (Schopohl,

Urquhart and Zhang, 2021). Secondly, Francis et al. (2013) report results based on study period 1994-2006, whereas, my study period covers 1999-2019 which includes major macroeconomic events in the UK economy, for example, financial crisis, Davis report on female representation in corporations etc. These macroeconomic events have possible implication on the loan approval scenario (Cowling et al., 2020; Wellalage et al., 2021), for example, lending banks' preference for female managers/borrowers due to their risk management in uncertainty and overall macroeconomic pressure to ensure female inclusion in practice. Third, Francis et al. (2013) study uses the loan details only of the largest loan amount approved per firm per year from the Loan Pricing Corporation's (LPC) Dealscan database. They record is practice as a limitation of their study as rest of the loan deals are not included to avoid complicacy. However, my study uses the total amount of short term debt per year per firm reported in the Refinitiv Eikon Thomson DataStream. Finally, Francis et al. (2013) argues that female CFOs can arrange favourable loan contracts due to their financial disclosure upfront, that is, transparent accounting practice. However, in the context of UK firm literature, female representation in management and board have positive impact on reversing earning management (Harakeh et al., 2019; Arun et al., 2015;), whereas, UK female CFO is not found significant contributor to such transparent accounting practice (Arun et al., 2015). The logical arguments of Francis et al. (2013) in support for the USA female CFOs receiving longer term debt are not evident in the context of the UK female CFOs. Thus, my baseline findings is supported (1) from theoretical perspective following upper echelon theory that is female tends to have ethical practice and follow risk averse decision as well as (2) from the literature on the UK firms borrowing situation with respect to female CFOs. None of the CFO level controls are significant, implying that the CFO's impact on debt maturity choice is only due to the CFO's gender difference. Among the governance controls, only the CEO Chair dummy is positive and significant in this model.

Regarding firm-level controls, as expected, the Leverage and Altman Z score dummy have a significant negative impact on firm short-term debt decisions; these findings are similar to the literature on debt maturity (Datta, Doan and Toscano, 2021; Ataullah, Vivian and Xu, 2017; Antoniou, Guney and Paudyal, 2006). According to the trade-off theory of capital structure, firms with high leverage have high financial distress costs;

thus, these firms are expected to be reluctant to and find it difficult to raise additional long-term debt financing. Further, firms opting for higher leverage choose long-term debt (Leland and Toft,1996) to delay their exposure to bankruptcy risk (Morris, 1992). Regarding Altman Z score dummy and debt maturity, a high Altman Z score may ensure the capacity to raise long-term funds due to increased financial quality (or credit quality) and reduced likelihood of bankruptcy (La Rocca, Neha Neha and La Rocca, 2019).

Next, I investigate whether financial sector expert CEOs and Board members moderate debt maturity decisions proposed by female CFOs; accordingly, I run the interaction terms of female CFOs and financial sector expert CEOs and Board members in Model 2 and 3, respectively. The results for female CFOs and short-term debt remain significantly positive in Model 2 and Model 3. Interestingly, as expected in the hypotheses H2 and H3, both the interaction terms are significantly negative, suggesting that financial sector expert CEO and board members significantly moderate the negative association between female CFO and short-term debt in a reverse direction. Important to note that neither the financial sector expert CEO nor the board of directors has a significant standalone impact on short-term debt; this is evident in their stronger monitoring role on female CFOs' financial decisions rather than performance role as part of management (as CEO).

With high-level skills and connections in financial sectors, financial expert CEOs and board members may substitute the need for external monitoring through short-term debt (Anginer et al., 2019) and save the effective debt cost, as short-term debt is always costlier in effect. Also, similar to Model 1, in the interaction models, the coefficients on firm-level control variables are consistent and similar with the findings in the prior literature. Leverage and Altman Z score dummy significantly negatively impact a firm short-term debt decision. High leverage and Altman Z score make firms less likely to issue short-term debt. These findings present the interesting u-shape nature of short-term debt issuance; highly levered and more distress-prone firms cannot afford to choose debt maturity, whereas firms with sound financial health can enjoy the flexibility to issue debt for shorter maturity refinance later at a reasonable rate. All other variables have similar outcomes as compared to Model 1.

5.4.2. CFO's Other Attributes

The results so far show that female CFO and firm short-term debt have a positive association. My baseline model has two CFO level control variables, CFO Age and Financial Sector Expert CFO; none significantly impact the firm short-term debt. As the female CFO is a dummy variable, other potential CFO attributes might have unique settings for CFO's impact on debt maturity policy. Thus I have a sub-sample based on two CFO attributes, (1) CFO Tenure, a dummy variable indicates one if the firm CFO tenure is more than the median tenure of CFOs in the sample or 0 otherwise, and (2) CFO stock option, a dummy variable indicates one if the CFO stock options ratio granted by the firm is more than the median stock options ratio in the sample, and zero otherwise.

CFO Tenure is the proxy of CFO power and a sign of integration of the CFO with the firm's current strategy; the more tenure, the more knowledgeable CFOs become about cost-effective external financing sources. Furthermore, in his study on executive compensation and debt maturity, Brockman *et al.* (2010) find that managerial risk-taking attitudes increase with equity-based compensations that may encourage creditors to shorten debt maturity. Furthermore, a positive relationship between managerial stock ownership and short-term debt has been documented by Datta *et al.* (2005) that happens due to the alignment of shareholders' and managers' interests (e.g., Jensen and Meckling, 1976). With significant shareholding in the firm, managers become more aligned with the interest of shareholders; they show less tendency of avoiding frequent external monitoring for refinancing purpose and are more likely to use short term-debt compared to managers with less shareholding stake at firm. Based on this evidence, I expect the positive association between female CFOs and short-term debt will be more intense in CFO with larger equity-based compensation. To test this relation, I use CFO stock option granted as proxy for CFO shareholding stakes at the firm. I calculate the stock option granted to the CFO as the ratio of the stock options granted to the CFOs by firm to the total compensation they receive on yearly basis following Datta *et al.* (2001). The interaction term between female CFO and CFO stock option is the crucial variable of interest that captures whether and how equity-based

compensation alerts the marginal effect of female CFO on firms' debt maturity structure. Table 5.4 Panel A and Panel B represent the outcomes of firm leverage and CFO attributes based subsample analyses, respectively. For brevity, I keep the relevant results only.

[Insert Table 5.4]

Panel A in Table 5.4 reflects the subsample analyses based on CFO Tenure. The results in Panel A show that female CFOs have a positive association with short-term debt only in the firms where CFOs have low tenure. With longer tenure, CFOs might utilize their credibility to access longer-term debt with less cost of debt in effect.

Finally, Panel B in Table 5.4 shows that female CFOs have a positive association with short-term debt only in the firms where CFOs receive few stock options compared. Prior studies show that the equity stock option granted to managers increases their risk-taking incentives, and managers tend to take shorter termed debt. Furthermore, concerning monitoring by financial sector expert board representation, the interaction terms between generalist CFOs and gender diversity are negative and significant only in cases where female CFOs significantly take short-term debts in firms.

5.4.3. CEO Power

The findings suggest that female CFOs significantly influence firm debt maturity structure. A potential concern is that there might be some firms in the sample where the CEO is in central decision-making power (Adams, Almeida and Ferreira, 2005) and affects debt maturity decisions. In that case, the CEO's delegation of control over decision-making depends on firm characteristics and the CEO's knowledge and expertise on the policy concerned (Graham *et al.*, 2015). Following managerial discretion theory and CEO dominance, I attempt to check whether female CFOs have moderate flexibility to generously decide on firm debt maturity structure while considering the presence of CEO dominant power.

In this section, I run subsample analyses to understand to what extent CEO's influence constrains the CFO's decision. Based on the CEO dominance hypothesis, I expect the positive association between female CFOs and firm short-term debt will be less

pronounced if the CEO dominates or is less cooperative to delegate decision management to their CFOs. I split my sample accordingly into subsamples based on CEO power, CEO-CFO Co-option, and CEO-CFO relative pay in Table 5.5 Panel A and Panel B, respectively.

[Insert Table 5.5]

In Panel A Table 5.5, I use CEO-CFO Co-option to understand the relative power of the CEO. CEO-CFO Co-option is a dummy variable that indicates whether the CEO was in the firm before the CFO was recruited. I expect that CEO is dominant when the CEO recruits CFO. Additionally, in Table 5.5 Panel B, I split subsamples of firms with CEO relative power concerning relative compensation between CEO and CFO, a dummy variable that indicates whether CFO-CEO relative pay is less (more) than the yearly median relative pay of CFO-CEO in the sample. I expect the CEO to delegate less to CFOs when CFO-CEO relative pay gap is more than the median in the sample. Per my expectations, the coefficient on female CFO is significantly positive for the subgroups of firms where the CEO delegates policies to the CFO (low CEO power and high degree of delegation). These results do not reject the CEO dominance hypothesis and suggest that the generalist CFO effect on firm cash that I document in this study is the effect caused by the powerful CEO.

Furthermore, based on the false consensus theory, I test whether a firm debt maturity policy is driven by female CEO rather than a female CFO. I include female CEO (dummy variable indicating whether the CEO is female or 0 otherwise)) into my main models from Equations (1), (2), and (3). In all these estimations, female CFOs have a significant positive relationship with firm short-term debt, whereas female CEO has no significant influence on firm debt maturity policy. This evidence shows that a female CFO has significant explanatory power to firm debt maturity structure compared to female CEO. These results do not reject the CEO dominance hypothesis and imply that the female CFO effect on the firm debt maturity structure I document in this study is caused by the powerful CEO rather than the female CEO.

Considering the baseline and subsample analysis results, I observe that female CFOs opt for short-term debt significantly in firms across all the regression specifications. By

looking at the coefficient estimates on the CEO and board members' interaction terms with female CFO, I find a significant positive influence on the association between short-term debt and female CFO even though neither CEO nor board members directly affect short-term debt issues. Furthermore, none of the other CFO's characteristics show any significant connection to the firm's short-term debt issue other than the female CFO. The evidence in Table 5.3 and Table 5.4 support a robust positive association between the female CFO and short-term debt choice, which moderates with the presence of financial sector expert CEO and board members.

5.4.4. Female CFO and Short term debt- Financial Constraints of Firms

Since female managers are highly likely to keep more cash (e.g., Adhikari, 2017; Xu *et al.*, 2019) and, as a result, have lower risk of refinancing at maturity (Harford *et al.*, 2014), I expect a more pronounced positive association between female CFO and short-term debt for firms with lower financial constraints. This analysis allows us to alleviate a concern that short-term debt in firm with female CFOs does not reflect that firm's debt maturity choice but rather the consequence of its constrained access to long-term debt financing. In particular, constrained firms may use short-term debt because they will highly likely be screened out to choose inside the maturity spectrum and left out with the only option to take debt for short-term and refinance frequently (Diamond, 1991). In contrast, the presence of short-term debt in unconstrained firms should reflect their debt maturity choice rather than compelled covenant. To understand a firm's state of financial constraint, following Dang and Phan (2016), I employ two proxies highly used in the literature: the leverage ratio and the Whited and Wu (2006) index. I categorize firms into the constrained group if they have a yearly above-median leverage ratio and a yearly above-median Whited–Wu index. I define firms as unconstrained if they have a below-median leverage ratio or a below-median Whited–Wu index. In Table 5.6, I present the regression results.

[Insert Table 5.6]

As expected, for both measure of financial constraints, only the unconstrained firm group show a positive and significant relation between female CFO and short-term debt

as these firm afford to enjoy debt maturity choice due to their less burden. Based on the leverage ratio, the interaction term between a female CFO and a financial sector expert CEO is negative and significant in a constrained firm group. This finding provides evidence of CEOs' interruption of debt maturity decisions in aged and big-size constrained firms. On the contrary, the interaction term is negative and significant for the unconstrained group in the White and Wu Index, which provides evidence of CEOs' interruption on debt maturity decisions in constrained firms. Finally, the interaction term between female CFO and financial sector expert board members ratio is negative and significant for both unconstrained firm groups. As the White and Wu Index covers dividends, long-term debt, firm size, and sales growth, financial expert CEO and board members might utilize good financial health to take longer rather than shorter-term debt. Thus, the interaction term in the unconstrained firm tends to be significantly negative concerning the White and Wu Index.

Interruption in debt maturity decisions in constrained firms indicates that financial sector expert boards consistently monitor debt maturity decisions to avoid excessive debt costs. The finding is that female managers are motivated to select short-term debt among unconstrained firms with more liquidity and lower refinancing risk. All other results are similar to the baseline models.

5.4.5. Endogeneity Concerns

Equations (1), (2), and (3) may suffer from potential endogeneity, as my estimations assume that female CFO is exogenous determinants of firm debt maturity choice. However, the selection of the CFO can be endogenous, depending on the firm's recruitment preferences and the interest of such candidates in joining the firm. Standard experimental research design requires the random assignment of firms into two groups, treatment and controls, which was not feasible in this study context. Thus, I applied the *Heckman two-stage least square method, propensity score matching techniques, and CFO transition* to address this question and offer strong indicative evidence that the identified association between generalist CFOs and firm debt maturity decision is causal in nature.

5.4.5.1. Sample Selection Bias

I employ Heckman's two-stage least-square method to account for the self-selection bias of hiring female CFOs. In the first stage, I run a probit model to estimate the likelihood of recruiting a female CFO for firms using *firm size, market-to-book ratio, asset maturity ratio, leverage ratio, abnormal earnings, earnings volatility, and Altman Z score dummy* as predictors for the selection model. Further, I use an average percentage of female directors per year as an exogenous variable in the selection model. I include the inverse Mills ratio (IMR) in the second stage to control for self-selection where estimate the baseline models in Table 3 previously. Table 5.7 presents the regression outcomes.

[Insert Table 5.7]

Table 5.7 reports the findings from first-stage probit (Selection Model 1) and second-stage models (Models 2 and 3), which employ the same explanatory variables as in the baseline specification. My exogenous variable average percentage of female directors per year is significant, and the Inverse Mills Ratios are also significant in the models. The second stage estimation results are similar to the baseline models in Table 5.3 and pronounced the findings that female CFOs issue shorter-term debt than their counterparts. Both financial sector expert CEO and the board of directors moderate such short-term debt decisions by female CFOs. Most control variables are significant, indicating that results are unlikely to be influenced by the self-selection bias while hiring the female CFOs.

5.4.5.2. Propensity Score Matching (PSM)

To address the endogenous CFO-firm matching issue, I run PSM procedure recommended by Rosenbaum and Rubin (1983). PSM support us comparing the debt maturity of two groups of firms identical in terms of firm features except for one group with male CFOs and the other with female CFOs. This process helps to isolate the female CFO effect on firm policy. I implement the process in two steps; first, I employ

logit model (logistic regression) to estimate the firm's propensity to have a female CFO with firm-level control variables used in baseline models in Table 3. Next, I utilize the estimated propensity scores to match each female CFO firm with a similar firm with a male CFO by using the nearest-neighbour matching technique without replacement (as suggested by Leuven and Sianesi, 2003). Table 5.8 presents the outcomes.

[Insert Table 5.8]

In Panel A of Table 5.8, I show the results of covariate balance test which assess whether the covariates mean differences in firm characteristics between treatment (firms with female CFO) and control firms (firms with male CFO) are statistically significant or not. The results provides evidence that the treatment ad control groups are similar with respect to firm-level properties. I present the mean short-term debt ratio for treatment and control groups in Panel B in Table 5.8. The results show that treatment firms' average short-term debt ratio in treatment firms is 0.353 as compared to 0.318 in similar control firms. The mean difference in the short-term debt ratio is statistically significant at the 1%.; this findings suggests that female CFO firms issue more short-term debt than male CFO firms. Finally, in Panel C Table 5.8, I run the models corresponding to Equations (1), (2), and (3) to only match firms through propensity score matching. The results show a significant positive relationship between female CFOs and short-term debt ratio, and all other explanatory variables show outcomes similar to those in baseline models. Overall, these analyses results alleviate potential concerns that the finding to be driven by sample selection bias.

5.4.5.3. CFO Transition Firms

So far, I have used propensity score matching to correct selection bias. However, there is a chance that the documented positive relationship between female CFO and firm short-term debt is happening simply because of unobservable attributes that influence both the selection of female CFO and the selection of firm debt maturity structure. The exclusion of these restrictions might incorrectly guide us to assign the differences in debt maturity choices to differences in CFO gender. I utilise the panel restricted for

time-invariant firm-specific features that might be associated with the omitted variables; thus, I employ the firm fixed effect regressions only with those firms that have experienced both male CFOs and female CFOs over time. Firm fixed effects along with the year (time fixed effect) remove both cross-sectional and time-invariant correlations between CFO gender and firm debt maturity decision and eventually reduce the possibility of spurious correlations. Specifically, I compare within firms between male and female CFOs of operating in the same firm over time. I incorporate only those firms that have a transition from male CFO to female CFO or vice versa as these firms fit the identification. The results are presented in Table 5.9.

[Insert Table 5.9]

Table 5.9 presents the regression result on firms having experience with both male CFO and female CFO over time. The coefficient of female CFO is positive and significant, indicating that female CFOs use more short-term debt than their counterpart. Furthermore, the interaction term of financial sector expert CEO in Model 2 and financial sector expert board member ratio in Model 3, respectively, with female CFO, is significantly negative similar to the baseline results in Table 3.

5.4.6. Female CFO and Short term debt- Sub-period analyses

My sample period covers UK-listed firms data from 1999-2019; in this era, I observed two exogenous shocks, (1) to change in the term structure of interest rate in 2008 and (2) for Lord David report published in 2011 that patronized more female representation in top of corporate firms. I utilize these two points of time to create a sub-period and analyse the impact of female CFO and the moderating role of financial sector expert CEO and board in different sub-periods.

5.4.6.1. Sub-period corresponding to change in the term structure of interest rate in 2008

My sample period covers 1999 to 2019, which show different term structure of interest rates for different sub periods. Specifically, both treasury bill (1 year) and treasury bond (10 year) had steep declining pattern from the beginning of 2006 to the end of 2008, and become flat/level form 2009 onwards when the financial crisis hit. This pattern in interest rate corresponds to two different eras, one with a declining rate and the other with a stable rate. In the first era of declining rates, firms are incentivized to use short-maturity debt due to lower refinancing risk; this period's result may drive the evidence for a total sample. Thus, I split my sample period into 1999-2008 and 2009-2019 and rerun the baseline models for each sub-period. Table 5.10 Panel A presents the results.

[Insert Table 5.10]

Panel A of Table 5.10 shows that the positive association between female CFO and short-term debt ratio is consistently significant in the era of the stable term structure of interest rate. In contrast, the association is insignificant in the declining interest rate era. These findings indicate that a positive association holds in the sub-period of rate stability where there was no incentive for the firm to take advantage of lower refinancing risk. The insignificant association case in the declining interest rate era could be driven by data insufficiency, as many female CFOs were comparatively much lower during that period. This test is also inspired by the observation that the difference between the 10-year treasury bond and 1-year government bond yields was relatively small-scale in more than half of the total sample period. If a small yield spread reduces the incentive for firms to favour short-termism of debt, it may weaken the relation between female CFO and the short-term debt ratio for the total sample period. Furthermore, CEO and board moderation are in effect when female CFOs take shorter-term debt. Overall, the results suggest that the positive relation between female CFO and short-term debt ratio is significant beyond the incentive of the favourable term structure of interest rate for firms.

5.4.6.2. Sub period corresponding to Davis report in 2011 in the UK

During my sample period, the UK corporate governance setting has changed significantly for gender equality awareness and motivate public pressure on firms for greater gender balance in top management and board of directors. While some UK-neighbouring countries have introduced gender quotas on board, the UK does not pass any legislation on the issue, which could have been treated as an exogenous shock as firms instantly have to improve female representations to be abided by law; such phenomenon would have been an excellent case to lessen reverse causality of linking female to firm outcomes. However, the "Women on Boards" report by Lord Davies (2011), whom the UK government appointed to review women's representation among FTSE350 boards, is considered a substantial milestone for UK corporate governance on gender equality that influenced UK public listed firms to increase female representation in boards. The review recommended female representation among FTSE100 boards to a minimum of 25% and 30% by 2015 and 2020, respectively, through 1/3 women and 2/3 men to open board position appointments. Bi-annual progress reports followed the initial review report in February 2011. Even though it was not legislation, the report had a significant impact on gradually increasing female representation in UK firms; thus, I consider Davis report as a semi-exogenous shock that facilitates an more female representation, and initiation of such report in 2011 provides an opportunity to divide the sample in two samples: from 1999-2011 and 2012-2019. Panel B of Table 5.10 represents the results.

From Panel B of Table 5.10, when I compare the results between two sub-periods, 1999-2011 and 2012-2019, it is evident that the Davis report significantly impacts how female CFOs decide on firm debt maturity decisions. The significant positive association between female CFOs and firm short-term debt maturity is only present in the pre-Davis report period when the number of female CFOs in the UK corporate culture, arguably, was less, and pressure for distinctive CFO style was high on female CFOs. Furthermore, the interaction term of financial sector expert CEO and board of directors are significantly negative only in the pre-Davis report period. I admit that the result must be interpreted carefully as the David report is non-legal binding on firms; nevertheless, the finding supports my baseline and the underlying assumptions that

female CFOs are prone to more short-term debt based on their preference if they are not regarded as a token.

5.4.7. Further Analyses

I run two additional regressions, (1) baseline models with an alternative definition of the dependent variable short-term debt ratio and (2) baseline models estimation with predicted leverage.

5.4.7.1. Alternative Definition of Short-Term Debt

In the literature on firm debt maturity decisions, debt maturity has been measured in either short-term debt ratio (Datta, Doan and Toscano, 2021) or long-term debt ratio (Ataullah, Vivian and Xu, 2017; Antoniou, Guney and Krishna Paudyal, 2006). For robustness check, I estimate the baselines in Table 5.3 with an alternative definition of firm short-term debt maturity: short-term debt minus the current portion of long-term debt divided by the firm's total debt in year t. Table 5.11 Panel A presents the results.

[Insert Table 5.11]

Table 5.11 Panel A shows the regression results on the relationship between female CFOs and debt maturity decisions. Female CFOs are positive and significantly related to the firm short-term debt ratio. The interaction term between female CFO and financial sector expert CEO and board are significant and negative similar to the findings in the baseline. All other variables report similar results to baseline models in Table 3.

5.4.7.2. Female CFO, Short-Term Debt and Predicted Leverage

Firm leverage and firm debt maturity decision are interconnected with the firm level determinants of debt ratio and debt maturity policies. Furthermore, Female CFOs in the UK-listed firms have significant impact on firm debt decision (Schopohl, Urquhart and Zhang, 2022). Thus, I utilize a two-stage least squares regression analysis to observe the female CFO influence on firm debt maturity structure with predicted leverage ratio. Following previous studies (Barclay *et al.*, 2003; Johnson, 2003; Datta *et al.*, 2005;

Datta, Doan, and Toscano, 2021). In first stage, I estimate predicted leverage with firm level determinants and in second stage I utilized the predicted leverage ratio to determine debt maturity. In the first stage, I measure the dependent variable leverage as the total debt ratio divided by total assets. I control for variables that prior literature (e.g., Johnson, 2003; Barclay and Smith, 1995) has shown to determine leverage. To estimate leverage, I use firm size, the market-to-book value of the asset, return on assets, capital expenditure ratio, liquidity ratio, and firm age as firm-level determinants. I also include female CFO, CFO age, CFO financial sector expert dummy, CEO Chair Dummy, board size, and board independence ratio. I control for year and firm fixed effects. Standard errors are clustered at the firm level. All variables are defined in Appendix C. In the second stage, I measure the dependent variable as short-term debt to total debt and estimate the baseline models using predicted leverage from stage one instead of leverage.

Table 5.11 Panel B presents the second stage, where I estimate the baseline models with predicted leverage. In my first stage model, I present a positive association between female CFOs and firm leverage, which aligns with the previous studies (Schopohl, Urquhart and Zhang, 2021). For second-stage models, female CFOs show a consistent and significant positive relationship with the short-term debt ratio. Predicted leverage is insignificant in the models, whereas leverage is significant in the baseline models. Finally, interaction terms between female CFO financial sector expert CEO and board are negative and significantly similar to the baseline findings.

5.5. Conclusion

The extant literature shows a debate on how female management tends to choose debt maturity decisions; some studies show they choose short term due to their ethical role play and less reluctance towards frequent external monitoring with refinancing (Datta, Doan and Toscano, 2021), whereas, other studies evident their long term debt decision as being preferred by the banks due to their accounting and financial transparency (Francis *et al.*, 2013). This study focus on this debate and attempt to investigate what could be the possible scenario for the UK firms with respect to female CFO and debt

maturity structure where lower leverage, shorter term of the debt, higher female representation in top management, and own board sitting CFOs are genuine corporate norms compared to the USA firms. Furthermore, the study also investigate on how do financial expert CEO and board members, who have skills and expertise in the financial market, may potentially moderate the debt maturity decision proposed by female CFOs, considering short maturity debt's refinancing risk and higher effective cost of debt.

This study aims to examine these phenomena and understand how female CFOs influence firm debt maturity policy and how financial sector expert CEO and board of directors may moderate CFOs' firm debt maturity decisions. Abundant literature examines managerial attributes and corporate policies, but most focus on CEO attributes. Due to their ethical role-playing, I expect female CFOs to issue more short-term debt and be less concerned about frequent external scrutinise attached to refinancing the debt given they are less constraint by firm financial health and non-discriminated by the bank loan terms. Furthermore, financial sector expert CEO and board of directors are expected to utilize their experience and network to avail firm financing at a moderate cost.

This study presents three significant findings. First, female CFOs rely on more short-term debt than their counterpart in the sample, which consists of publicly listed UK firms; such a positive association is significant even after controlling for female CEO presence. I interpret this positive association from the perspective of Datta, Doan and Toscano (2021), that is, female CFOs take more short term debt due to their ethical nature of being accountable and transparent in financial dealings. However, I reject an alternative explanation of such association, that is, female CFOs are risk taker (due to their piercing of glass cliff) and take short term debt as risky decision. With further analyses, I find female CFOs are inclined to short term debt only when firms financial health is in favourable terms, that is, female CFOs are not risk taker in terms of debt maturity decisions. These findings are similar but unique from Datta, Doan and Toscano (2021) due to sample criteria and the moderating role of financial sector expert CEO and board members on female CFOs.

Second, I observe that finance expert CEO and board members significantly moderate female CFOs' shorter maturity debt decisions. Third, even though short-term debt-taking could be a proxy of a risk-taking attitude, I confirm that female CFOs are not risk-takers as they issue shorter-term debt only in financially unconstrained firms. Their decision is impacted by the change in the term structure of interest rates and the issuance of the Davis report to expedite more female representation in UK firms.

Along with evidence of the importance of CFOs in firm financing decisions, the study further contributes to an established and ever-growing literature of determinants of corporate debt maturity (e.g., Barclay and Smith 1995; Antonio *et al.* 2006; Zheng *et al.* 2012, Harford, Klasa and Maxwell 2014). Literature largely highlighted managerial influence on corporate investment, cash holding, leverage, and risk; debt maturity received less attention due to being perceived as a secondary source of financial risks compared to leverage (Hong 2019). However, a recent growing literature emphasizes severe risk-amplifying consequences of short-maturity debt, especially during rationing credit periods (Acharya *et al.* 2011; Gopalan *et al.*, 2014, Hong, 2019).

As a risky[39] decision, short-term debt-taking involves managerial risk attitude. Literature highlights firm-induced managerial risk preference while addressing short-term debt decisions (for example, Brockman *et al.* (2010) on CEO; Chava and Purnanadam (2010) on both CEO and CFO as well as Dang and Phan (2016) on inside debt of CEO). These studies mostly ignored the firm exogenous risk preference developed from managers' attributes, specifically for CFO concerning debt maturity decisions. This study will bring new evidence on why and how a firm may coordinate managerial risk preference with the firm's objective besides rewarding with stock options. Finally, the study evident the channel how financial sector expert CEO and board of directors may ensure better corporate governance and value addition for firms by monitoring managerial practice in financial decision-making. Prior studies mostly have focused on direct impact of financial expert directors but the process how they do so was less attended for explanation; the findings help to fill the literature gap.

[39] Diamond, 1991; Gopalan *et al.*, 2014

The results have significant implications for boards tasked with the recruitment and compensation of top-executive teams. The dynamic global business environment challenges CFOs with complex tasks that are no longer limited to accounts and financials, CFOs are becoming strategic partners of CEOs. The findings puts forward the case that female CFOs are influential on firm financial policies and evident ability to shape corporate polices that has implication for practitioners. The findings may be beneficial in future thoughts and debates about the internal functioning and effective monitoring by boards on the dynamic CFO roles.

Future studies could be conducted to examine the effect of female CFOs on the cost of debt of a firm in the presence of a financial sector expert CEO and board of directors. Furthermore, future studies may also focus in details on role based financial experiences of directors. Finally, similar research on interaction between female CFOs and board financial expertise can be conducted in emerging economy context.

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Appendix C : Variables Definition

Name	Definition
CFO Characteristics	
CFO Female	Dummy variable coded 1 if the firm has a female CFO, and zero otherwise.
CFO Age	Natural logarithm of CFO age at the end of year t..
CFO Finexpert	Dummy variable coded 1 if CFO has past experience in financial sectors prior to join current firm, and zero otherwise. Financial sector is identified from employment profile of Directors from Sector column whether CFOs have worked in Banks, Blank Check / Shell Companies, Insurance, Investment Companies, Life Assurance, Private Equity, Real Estate, Speciality and Other Finance.
CFO Equity base Compensation	Estimated value (Black Soles) of stock option hold by CFO in year t divided by the total compensation received in year t.
CEO Characteristics	
CEO Finexpert	Dummy variable coded 1 if CEO has past experience in financial sectors prior to join current firm, and zero otherwise. Financial sector is identified from employment profile of directors from sector column whether CEOs have worked in Banks, Blank Check / Shell Companies, Insurance, Investment Companies, Life Assurance, Private Equity, Real Estate, Speciality and Other Finance.
CEO Chair Dummy	Dummy variable coded 1 if the firm has same CEO and Chair of board, and zero otherwise.
CEO Female	Dummy variable coded 1 if the firm has a female CEO, and zero otherwise.
Board Characteristics	
Board Size	Natural logarithm of total number of directors in board.
Board Independence Ratio	Ratio of number of non-executive directors to the total number of directors.
Board Finexpert	Ratio of total number of independent directors with financial expertise in board to the total number of directors.

Firm Characteristics	
STD Ratio	Ratio of short term debt to total debt of firm.
STD Ratio2	Ratio of short term debt minus current portion of long term debt to total debt of firm.
Institutional Ownership (%)	The percentage of share holdings of 5% or more held as long-term strategic holdings by investment banks or institutions seeking a long-term return.
Firm Size	Natural logarithm of total asset.
M/B Asset	Market to book value of total asset.
Asset Maturity	Measured as (Gross property, plant, and equipment/total assets) × (gross property, plant, and equipment /depreciation) + (current assets /total assets) × (current assets /cost of goods sold).
Earnings Volatility	The standard deviation of the first difference in EBITD in the past three years, scaled by the average book value of assets.
Leverage Ratio	Ratio of total debt to total equity.
Abnormal Earning	Measured as (Earnings per share in year t+1 - earnings per share in year t)/(share price in year t).
Altman Z Dummy	Dummy variable coded 1 if the Z-score is greater than 1.81, and zero otherwise. Altman Z= 1.2*(working capital/ total asset)+1.4*(retained earnings/ total asset)+3.3*(earnings before interest and tax bit / total asset)+0.6*(market price of share*outstanding share)/ total liabilities + (net sales / total asset).
Average Female Directors Ratio	Average female directors ratio per year within the sample.
Whited and Wu (2006) (WW) index	The Whited–Wu index is defined as −0.091 × Cash flow − 0.062 × Dividend dummy + 0.021 × Long-term debt − 0.044 × Size + 0.102 × Industry sales growth − 0.035 × Sales growth. The Dividend dummy is equal to 1 if firms pay dividends and 0 otherwise. Sales growth is measured as (sales (sale) in year t minus sales in year t − 1)/(sales in year t − 1). Industry sales growth is the average sales growth of firms belonging to the same industry. I define firms with above (below)-median scores on the WW index as constrained (unconstrained).

Tables

Table 5.1: Summary Statistics

This table presents descriptive statistics for the key variables used in the analysis. Analytical definitions for all variables are provided in the Appendix C. The sample period is between 1999 and 2019.

	N	Mean	SD	Min	p25	Median	p75	Max
Female CFO	7255	0.0740	0.2618	0	0	0	0	1
CFO Age	7255	47.4593	6.8456	25	43	47	52	73
CFO Finexpert Dummy	7255	0.0925	0.2897	0	0	0	0	1
CEO Chair Dummy	7255	0.1388	0.3458	0	0	0	0	1
CEO Finexpert	7255	0.1369	0.3437	0	0	0	0	1
Board Size	7255	7.1152	2.2337	2	6	7	8	20
Board Independence	7255	0.5383	0.1429	0.1667	0.4286	0.5556	0.6667	0.8182
Board Finexpert Ratio	7255	0.2793	0.2128	0	0.1429	0.2500	0.4000	1
Short Term Debt	7255	0.3076	0.3496	0	0.0060	0.1590	0.5053	1
Firm Size	7255	11.8896	2.1030	6.7946	10.4444	11.6919	13.2312	17.3334
M/B Assets	7255	0.5233	0.2410	0.0257	0.3557	0.5232	0.6713	1.5540
Asset Maturity	7255	8.7202	22.1587	0.0533	1.8182	4.2234	7.8150	194.875
Earnings Volatility	7255	0.0981	0.1575	0.0024	0.0219	0.0476	0.1042	1.1776
Leverage	7255	0.1715	0.1682	0	0.0158	0.1427	0.2726	0.8695
Abnormal Earnings	7255	-0.1934	6.1366	-33.8087	-0.4524	0.2188	1.5166	19.9601
Altman Z Dummy	7255	0.7846	0.4112	0	1	1	1	1
Institutional Ownership	7255	9.3234	10.8642	0	0	6	15	95

Table 5.2: Pairwise Correlation

This table presents pairwise correlation coefficients for the key variables used in the analysis. Analytical definitions for all variables are provided in the Appendix. The sample period is between 1999 and 2019.

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
(1) STD Ratio	1.0000																
(2) CFO Female	0.0460	1.0000															
	(0.000)																
(3) CFO Age	-	-	1.0000														
	0.0540	0.0990															
	(0.000)	(0.000)															
(4) CFO Finexpert	-	0.0130	0.0810	1.0000													
	0.0220																
	(0.063)	(0.256)	(0.000)														
(5) CEO Chair	0.0630	-	0.0150	-	1.0000												
Dummy		0.0210		0.0190													
	(0.000)	(0.079)	(0.203)	(0.098)													
(6) Board Size	-	-	0.0360	0.0570	-	1.0000											
	0.1160	0.0380			0.1760												
	(0.000)	(0.001)	(0.002)	(0.000)	(0.000)												
(7) Board	-	-	0.0730	0.0510	-	0.3270	1.0000										
Independence Ratio	0.1560	0.0200			0.3280												
	(0.000)	(0.089)	(0.000)	(0.000)	(0.000)	(0.000)											
(8) Institutional	-	0.0390	-	-	-	-	0.0950	1.0000									
Ownership	0.0370		0.0480	0.0210	0.0610	0.0360											
	(0.001)	(0.001)	(0.000)	(0.073)	(0.000)	(0.002)	(0.000)										
(9) Firm Size	-	-	0.1040	0.0740	-	0.6740	0.4980	-	1.0000								
	0.1730	0.0470			0.1780			0.0070									
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.572)									
(10) M/B Asset	0.0290	-	-	-	-	0.1980	0.1370	-	0.2920	1.0000							
		0.0260	0.0160	0.0020	0.0040			0.0090									
	(0.015)	(0.029)	(0.171)	(0.846)	(0.728)	(0.000)	(0.000)	(0.439)	(0.000)								
(11) Asset Maturity	-	-	0.0190	0.1550	0.0030	0.0640	0.0150	-	0.1130	-	1.0000						
	0.0730	0.0060						0.0650		0.0570							
	(0.000)	(0.592)	(0.099)	(0.000)	(0.803)	(0.000)	(0.205)	(0.000)	(0.000)	(0.000)							
(12) Earnings	0.0550	0.0200	-	0.0070	0.0440	-	-	0.0260	-	0.0060	-	1.0000					
volatility			0.0750			0.1770	0.0770		0.3140		0.0370						

	(0.000)	(0.084)	(0.000)	(0.561)	(0.000)	(0.000)	(0.000)	(0.024)	(0.000)	(0.628)	(0.002)						
(13) Leverage Ratio	-	-	0.0040	0.0290	-	0.2390	0.1660	-	0.3420	0.6630	0.1520	-	1.0000				
	0.0750	0.0230			0.0310			0.0390				0.0480					
	(0.000)	(0.051)	(0.750)	(0.012)	(0.008)	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)					
(14) Abnormal	-	0.0010	0.0000	-	0.0140	0.0220	0.0020	-	0.0220	-	0.0120	-	-	1.0000			
Earnings	0.0170			0.0120				0.0110		0.0020		0.0630	0.0360				
	(0.150)	(0.905)	(0.999)	(0.292)	(0.242)	(0.059)	(0.887)	(0.337)	(0.059)	(0.885)	(0.302)	(0.000)	(0.002)				
(15) Altman Z	0.0190	-	0.0310	-	-	0.0370	-	0.0130	0.0350	-	-	-	-	0.1100	1.0000		
Dummy		0.0040		0.0210	0.0280		0.0110			0.2390	0.0610	0.2380	0.3310				
	(0.113)	(0.718)	(0.007)	(0.069)	(0.016)	(0.002)	(0.328)	(0.264)	(0.003)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)			
(16) CEO	-	0.0190	-	0.2240	0.0720	0.1110	0.0530	-	0.1360	0.0520	0.1720	0.0070	0.0800	-	-	1.0000	
Finexpert	0.0210		0.0290					0.0180						0.0020	0.0420		
	(0.072)	(0.103)	(0.014)	(0.000)	(0.000)	(0.000)	(0.000)	(0.125)	(0.000)	(0.000)	(0.000)	(0.537)	(0.000)	(0.855)	(0.000)		
(17) Board	-	0.0460	-	0.3420	-	0.2230	0.2830	0.0070	0.3280	0.1050	0.2110	0.0100	0.1420	-	-	0.3970	1.0000
Finexpert Ratio	0.0660		0.0060		0.1230									0.0070	0.0570		
	(0.000)	(0.000)	(0.622)	(0.000)	(0.000)	(0.000)	(0.000)	(0.529)	(0.000)	(0.000)	(0.000)	(0.386)	(0.000)	(0.542)	(0.000)	(0.000)	

Table 5.3: Female CFO and Firm Short Term Debt moderated with CEO and Board Financial Expertise

This table presents the results from several regressions on the relationship between Female CFO and firm short term debt ratio as proxy of debt maturity. In each models, I use an ordinary least squares (OLS) regression with standard errors clustered at the firm level, and firm and year fixed effect estimation. Model 1 is the baseline model presenting female CFO and short term debt with all control variables. In Models 2 and 3, I use female CFO interaction with financial expert CEO and board financial expert independent directors ratio respectively. CFO Female is a dummy variable taking value 1 if the firm has a female CFO and 0 otherwise. Analytical definitions for all variables are provided in the Appendix. T Statistics are reported in parentheses. ***, **, and * denote statistical significance at the 1%, 5% and 10% levels, respectively.

Dependent variable is the ratio of short term debt (repayment within one year) divided by the total debt of the firm.			
VARIABLES	Model 1	Model 2	Model 3
Female CFO	0.0540**	0.0714**	0.1285***
	(1.9683)	(2.4153)	(3.1787)
CEO Finexpert		0.0320	
		(1.3898)	
CFO Female* CEO Finexpert		-0.1259**	
		(-2.0019)	
Board Finexpert Ratio			-0.0355
			(-0.6775)
CFO Female* Board Finexpert Ratio			-0.2365***
			(-2.6551)
CFO Age	-0.0065	-0.0036	-0.0081
	(-0.1127)	(-0.0621)	(-0.1407)
CFO Finexpert Dummy	0.0050	0.0039	0.0122
	(0.2558)	(0.1986)	(0.6124)
CEO Chair Dummy	0.0361	0.0324	0.0364
	(1.6282)	(1.4611)	(1.6321)
Board Size	-0.0350	-0.0353	-0.0420
	(-1.0216)	(-1.0319)	(-1.2160)
Board Independence	-0.0188	-0.0266	-0.0152
	(-0.2589)	(-0.3669)	(-0.2112)
Institutional Ownership	-0.0639	-0.0644	-0.0612
	(-0.9262)	(-0.9403)	(-0.8915)
Firm Size	-0.0077	-0.0078	-0.0063
	(-0.4627)	(-0.4667)	(-0.3796)
M/B Assets	0.0655	0.0638	0.0652
	(1.1533)	(1.1243)	(1.1522)
Asset Maturity	-0.0005	-0.0005	-0.0005
	(-0.9931)	(-0.9551)	(-0.9847)
Earnings Volatility	0.0021	0.0040	0.0044
	(0.0449)	(0.0839)	(0.0914)
Leverage	-0.1595*	-0.1608*	-0.1621*
	(-1.9108)	(-1.9341)	(-1.9376)
Abnormal Earnings	-0.0004	-0.0004	-0.0004
	(-0.6992)	(-0.7362)	(-0.6775)

Altman Z Dummy	-0.0246*	-0.0246*	-0.0255*
	(-1.6469)	(-1.6523)	(-1.7148)
Constant	0.5142*	0.5059*	0.5254*
	(1.7794)	(1.7535)	(1.8121)
Observations	7,127	7,127	7,127
R-squared	0.4856	0.4863	0.4864
Firm FE and Year FE	Yes	Yes	Yes

Table 5.4: Female CFO and Firm Short Term Debt-Powerful CEO

This table presents the results on the relative effect of the female CFOs and powerful CEOs on firm debt maturity decision. In Panel A, I split sample into high and low powered CEO firms based on CEO-CFO Co-option, whether CFO is recruited by current CEO or not. In Panel B, I split firms into high (low) powered CEO based on CFO-CEO relative pay ratio, whether CFO-CEO total compensation ration is above (below) the yearly median of CFO-CEO total compensation ratio within the sample. In each models, I use an ordinary least squares (OLS) regression with standard errors clustered at the firm level, and firm and year fixed effect estimation. The dependent variable is defined as the ratio of short term debt divided by the total debt of the firm. CFO Female is a dummy variable taking value 1 if the firm has a female CFO and 0 otherwise. Analytical definitions for all variables are provided in the Appendix. T Statistics are reported in parentheses. ***, **, and * denote statistical significance at the 1%, 5% and 10% levels, respectively.

Dependent variable is the ratio of short term debt (repayment within one year) divided by the total debt of the firm.						
	Panel A: CEO-CFO Co-option					
VARIABLES	No	Yes	No	Yes	No	Yes
Female CFO	0.0551*	-0.0660	0.0599	-0.0602	0.1063**	-0.0277
	(1.6985)	(-0.8055)	(1.6406)	(-0.7097)	(2.0298)	(-0.1809)
CEO Finexpert			-0.0061	0.0222		
			(-0.1981)	(0.5549)		
CFO Female* CEO Finexpert			-0.0316	-0.0514		
			(-0.3887)	(-0.5614)		
Board Finexpert Ratio					-0.0485	0.0278
					(-0.7522)	(0.3094)
CFO Female* Board Finexpert Ratio					-0.1572	-0.1220
					(-1.3151)	(-0.4116)
Constant	0.5622*	0.9695	0.5597*	0.9672	0.5624*	0.9580
	(1.8058)	(1.4488)	(1.7961)	(1.4462)	(1.8029)	(1.4421)
Chi-sq	9.98***		7.61***		7.80***	
Observations	4,870	2,385	4,870	2,385	4,870	2,385
R-squared	0.0280	0.0478	0.0281	0.0481	0.0289	0.0480
Number of BoardID	901	566	901	566	901	566
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Dependent variable is the ratio of short term debt (repayment within one year) divided by the total debt of the firm.						
	Panel B: CFO-CEO Relative Pay					
VARIABLES	No	Yes	No	Yes	No	Yes
Female CFO	0.0996***	0.0290	0.1044***	0.0712	0.1266*	0.0330
	(2.7981)	(0.5483)	(2.7210)	(1.2885)	(1.8616)	(0.3525)
CEO Finexpert			0.0112	0.0449		
			(0.3553)	(1.4005)		
CFO Female* CEO			-0.0382	-0.2129**		

Finexpert						
			(-0.3501)	(-2.3471)		
Board Finexpert Ratio					-0.0877	-0.0170
					(-1.2950)	(-0.2207)
CFO Female* Board Finexpert Ratio					-0.0843	-0.0079
					(-0.5483)	(-0.0387)
Constant	0.9454**	0.3571	0.9401**	0.3627	0.9576**	0.3583
	(2.5101)	(0.7586)	(2.5176)	(0.7782)	(2.5592)	(0.7595)
Chi-sq	5.00**		2.00		0.51	
Observations	3,425	3,453	3,425	3,453	3,425	3,453
R-squared	0.0466	0.0503	0.0467	0.0535	0.0480	0.0503
Number of BoardID	749	777	749	777	749	777
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Table 5.5: Female CFO, Short Term Debt and CFO Stock Option

This table presents the results from several regressions on the relationship between Female CFO and firm short term debt ratio with relevant CFO attributes. In Panel A, I split sample into high and low powered CFO firms based on CFO tenure, whether CFO is has low (high) tenure in firm compared to the yearly medina CFO tenure in the sample. In Panel B, I consider CFO stock option granted as proxy for CFO equity based compensation. I defined high (low) CFO stock option groups based on higher (lower) value of ratio of estimated value (Black Soles) of stock option hold by CFO divided by the total compensation received by the CFO compared to the yearly median value of such ratio in the sample. In each models, I use an ordinary least squares (OLS) regression with standard errors clustered at the firm level as well as firm and year fixed effect. The dependent variable is defined as the ratio of short term debt divided by the total debt. CFO Female is a dummy variable taking value 1 if the CFO is female or 0 otherwise. All independent variables are measured on same year of dependent variable. Analytical definitions for all variables are provided in the Appendix. T Statistics are reported in parentheses. ***, **, and * denote statistical significance at the 1%, 5% and 10% levels, respectively.

Panel A: CFO Tenure						
Dependent variable is the ratio of short term debt (repayment within one year) divided by the total debt of the firm.						
VARIABLES	Low	High	Low	High	Low	High
Female CFO	0.0978***	-0.0094	0.0982***	0.0202	0.1425***	0.0740
	(3.1496)	(-0.1818)	(2.9100)	(0.3771)	(2.8155)	(0.9107)
CEO Finexpert			-0.0303	0.0454		
			(-1.1577)	(1.5211)		
CFO Female* CEO Finexpert			-0.0029	-0.2184*		
			(-0.0341)	(-1.7900)		
Board Finexpert Ratio					-0.0595	-0.0280
					(-0.9354)	(-0.3818)
CFO Female* Board Finexpert Ratio					-0.1314	-0.2741
					(-1.2573)	(-1.3384)
Constant	1.0956***	0.4925	1.1038***	0.4668	1.1163***	0.4850
	(3.1888)	(1.0161)	(3.2051)	(0.9625)	(3.2486)	(0.9977)
Chi-sq	2.91**		1.90		3.22*	
Observations	3,058	4,197	3,058	4,197	3,058	4,197
R-squared	0.0415	0.0399	0.0422	0.0424	0.0428	0.0409
Number of BoardID	808	848	808	848	808	848
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Panel B: CFO Stock Option						
Dependent variable is the ratio of short term debt (repayment within one year) divided by the total debt of the firm.						
VARIABLES	Low	High	Low	High	Low	High
Female CFO	0.0601	0.0880	0.0857**	0.0772	0.2500**	0.1877
	(1.4419)	(1.0870)	(2.2457)	(0.9061)	(0.1176)	(1.3514)
CEO Finexpert			0.0537	0.0745		
			(1.2764)	(1.4688)		
CFO Female* CEO Finexpert			-0.1222	0.0934		
			(-1.3780)	(0.5992)		
Board Finexpert Ratio					0.1260	0.0082
					(0.0975)	(0.0506)
CFO Female* Board Finexpert Ratio					-0.4887**	-0.2889
					(0.2309)	(-0.9187)
Constant	1.1927	-0.3325	1.2623	-0.2261	1.1781	-0.3180
	(1.3940)	(-0.4056)	(1.4927)	(-0.2756)	(0.8501)	(-0.3930)
Chi-sq	1.32		5.49**		1.62	
Observations	1,697	1,281	1,697	1,281	1,697	1,281
R-squared	0.0603	0.0550	0.0635	0.0581	0.0660	0.0557
Number of BoardID	416	406	416	406	416	406
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Table 5.6: Female CFO and Short term Debt in Financial Constraints

This table presents the results from several regressions on the relationship between Female CFO and firm short term debt on firms in groups based on Financial Constraints. In Panel A, I define unconstrainted (UC) and constrained (C) firm based on the whether the leverage ratio of firm is below (above) the yearly median leverage ratio of the firms in the sample. In Panel B, I define unconstrainted (UC) and constrained (C) firm based on the whether the White and Wu Index of the firm is below (above) the yearly median leverage ratio of the firms in the sample. The Whited−Wu index is defined as −0.091 × Cash flow − 0.062 × Dividend dummy + 0.021 × Long-term debt − 0.044 × Size + 0.102 × Industry sales growth − 0.035 × Sales growth. In each models, I use an ordinary least squares (OLS) regression with standard errors clustered at the firm level as well as firm and year fixed effect. The dependent variable is defined as the ratio of short term debt divided by the total debt. CFO Female is a dummy variable taking value 1 if the CFO is female or 0 otherwise. All independent variables are measured on same year of dependent variable. Analytical definitions for all variables are provided in the Appendix. T Statistics are reported in parentheses. ***, **, and * denote statistical significance at the 1%, 5% and 10% levels, respectively

Panel A: Leverage Ratio						
Dependent variable is the ratio of short term debt (repayment within one year) divided by the total debt of the firm.						
VARIABLES	UC	C	UC	C	UC	C
Female CFO	0.0847*	0.0188	0.0968*	0.0378	0.1434**	0.0907**
	(1.7534)	(0.8129)	(1.8695)	(1.5377)	(2.1080)	(2.5427)
CEO Finexpert			0.0238	0.0385**		
			(0.5786)	(2.1084)		
CFO Female* CEO Finexpert			-0.0727	-0.1712**		
			(-0.6630)	(-2.0198)		
Board Finexpert Ratio					-0.1331	0.0522
					(-1.3950)	(1.1088)
CFO Female* Board Finexpert Ratio					-0.1980	-0.2148***
					(-1.0781)	(-2.7325)
Constant	0.2580	1.5013***	0.2624	1.4478***	0.2939	1.4880***
	(0.5922)	(5.5742)	(0.6019)	(5.4665)	(0.6703)	(5.5581)
Ch-sq	1.43		0.92		4.08**	
Observations	3,442	3,813	3,442	3,813	3,442	3,813
R-squared	0.0511	0.0568	0.0514	0.0612	0.0535	0.0591
Number of BoardID	687	698	687	698	687	698
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Panel B: WW Index						
Dependent variable is the ratio of short term debt (repayment within one year) divided by the total debt of the firm.						
VARIABLES	UC	C	UC	C	UC	C
Female CFO	0.0673*	0.0525	0.0847**	0.0667	0.2147***	0.0836
	(1.7339)	(1.2626)	(2.1565)	(1.4060)	(3.1302)	(1.5187)
CEO Finexpert			0.0300	0.0477		
			(1.2230)	(1.2316)		
CFO Female* CEO Finexpert			-0.1402*	-0.0831		
			(-1.7411)	(-1.0857)		
Board Finexpert Ratio					-0.0376	-0.0050
					(-0.5857)	(-0.0625)
CFO Female* Board Finexpert Ratio					-0.4245***	-0.1113
					(-3.1243)	(-0.8088)
Constant	1.1840**	0.4926	1.1563**	0.5073	1.1439**	0.5106
	(2.3695)	(1.4889)	(2.3163)	(1.5381)	(2.2800)	(1.5146)
Chi-sq	1.50		2.67*		0.73	
Observations	3,513	3,737	3,513	3,737	3,513	3,737
R-squared	0.0674	0.0282	0.0691	0.0294	0.0710	0.0285
Number of BoardID	602	860	602	860	602	860
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Table 5.7: Regression Estimates Using Heckman Two Stage Least Square (2SLS) Method

This table presents the results from several regressions on the relationship between Female CFO and firm short term debt with Heckman 2SLS regression. In the first stage, I use CFO Female as the dependent variable and run a probit regression. Average Female Directors Ratio is an exogenous variable, which is the mean % of appointing Female directors in the market in year t. In the second stage, I add Inverse Mills Ratio from first stage in the regression and run the regression of CFO Female on Short Term Debt. The dependent variable is defined as the ratio of short term debt divided by the total debt of the firm. CFO Female is a dummy variable taking value 1 if the firm has a female CFO and 0 otherwise. Analytical definitions for all variables are provided in the Appendix. T Statistics are reported in parentheses. ***, **, and * denote statistical significance at the 1%, 5% and 10% levels, respectively.

In second stage models, dependent variable is the ratio of short term debt (repayment within one year) divided by the total debt of the firm.				
	First Stage	Second Stage		
VARIABLES	Selection	Model 1	Model 2	Model 3
Female CFO		0.0548**	0.0714**	0.1304***
		(2.0043)	(2.4170)	(3.2504)
CEO Finexpert			0.0342	
			(1.4966)	
CFO Female* CEO Finexpert			-0.1191*	
			(-1.9242)	
Board Finexpert Ratio				-0.0307
				(-0.5892)
CFO Female* Board Finexpert Ratio				-0.2403***
				(-2.7554)
Average Female Directors Ratio	5.3546***			
	(8.4198)			
Inverse Mills Ratio		-7.3914*	-7.3359*	-7.3242*
		(-1.9040)	(-1.9071)	(-1.8940)
CFO Age		-0.0063	-0.0034	-0.0079
		(-0.1102)	(-0.0591)	(-0.1386)
CFO Finexpert Dummy		0.0069	0.0057	0.0137
		(0.3479)	(0.2889)	(0.6859)
CEO Chair Dummy		0.0360	0.0319	0.0364
		(1.6227)	(1.4389)	(1.6286)
Board Size		-0.0334	-0.0336	-0.0400
		(-0.9778)	(-0.9859)	(-1.1632)
Board Independence		-0.0322	-0.0397	-0.0293
		(-0.4491)	(-0.5530)	(-0.4121)
Institutional Ownership		-0.0618	-0.0627	-0.0591
		(-0.8956)	(-0.9140)	(-0.8608)
Firm Size	-0.0498***	0.3038*	0.3013*	0.3022*
	(-4.2965)	(1.8081)	(1.8093)	(1.8052)
M/B Assets	-0.1319	0.8938**	0.8859**	0.8859**
	(-1.0915)	(2.0202)	(2.0235)	(2.0110)

Asset Maturity	0.0001	-0.0013*	-0.0013*	-0.0013*
	(0.1293)	(-1.9411)	(-1.9419)	(-1.9483)
Earnings Volatility	0.0350	-0.2191*	-0.2155*	-0.2151*
	(0.2595)	(-1.6829)	(-1.6710)	(-1.6584)
Leverage	0.2109	-1.4848**	-1.4764**	-1.4750**
	(1.1553)	(-2.1099)	(-2.1203)	(-2.1043)
Abnormal Earnings	0.0012	-0.0076**	-0.0076**	-0.0076**
	(0.3366)	(-2.0005)	(-2.0100)	(-1.9876)
Altman Z Dummy	-0.0028	-0.0064	-0.0066	-0.0075
	(-0.0482)	(-0.3784)	(-0.3926)	(-0.4477)
Constant	-1.3048***	10.9684**	10.8819**	10.8845**
	(-8.6366)	(2.0089)	(2.0110)	(2.0012)
Observations	8,100	7,127	7,127	7,127
R-squared		0.4862	0.4870	0.4870
Firm FE	No	Yes	Yes	Yes
Year FE	No	Yes	Yes	Yes

Table 5.8: Regression Estimates After Propensity Score Matching

This table presents the results from several regressions on the relationship between Female CFO and firm short term debt ratio with matched firms sample with propensity score matching. The treated firms are firm with female CFOs and control firms are firms with male CFOs. Firms are matched base on firm level controls that has been used in the base line regression with year fixed effect. In Panel A and Panel B, I present the covariate balance test and Mean difference by groups, respectively. In Panel C, I run the regression for matched firms only. In each models, I use an ordinary least squares (OLS) regression with standard errors clustered at the firm level as well as firm and year fixed effect. Model 1 is the baseline model presenting female CFO and short term debt with all control variables. In Models 2 and 3, I use female CFO interaction with financial expert CEO and board financial expert directors ratio respectively. The dependent variable is defined as the ratio of short term debt divided by the total debt. CFO Female is a dummy variable taking value 1 if the CFO is female or 0 otherwise. All independent variables are measured on same year of dependent variable. Analytical definitions for all variables are provided in the Appendix. T Statistics are reported in parentheses. ***, **, and * denote statistical significance at the 1%, 5% and 10% levels, respectively.

Panel A: Covariate Balance Test

	Sample Type	Mean		Bias		T-test		V(T) /V(C)
	(U=Unmatched M=Matched)	Treated	Control	%bias	%reduct |bias|	t	p>|t|	
Variable								
Firm Size	U	11.594	11.985	-18.3	-4.12	0.00	0.920	
	M	11.595	11.556	1.8	89.9	0.32	0.752	0.980
M/B Assets	U	0.505	0.528	-9.5	-2.150	0.03	0.960	
	M	0.505	0.488	7	26.0	1.17	0.244	0.930
Asset Maturity	U	8.358	7.447	5.1	1.32	0.19	1.66*	
	M	8.028	9.204	-6.6	-29.1	-0.94	0.349	0.61*
Earnings Volatility	U	0.112	0.100	6.7	1.610	0.11	1.26*	
	M	0.112	0.108	2.4	63.8	0.41	0.683	1.32*
Leverage	U	0.167	0.175	-4.6	-1.07	0.29	1.060	
	M	0.166	0.161	3.1	33.4	0.51	0.608	1.040
Abnormal Earnings	U	-0.101	-0.193	1.4	0.34	0.73	1.20*	
	M	-0.097	-0.206	1.7	-18.1	0.28	0.779	1.090
Altman Z Dummy	U	0.7700	0.776	-1.4	-0.33	0.74		
	M	0.771	0.738	8	-455.2	1.31	0.189	

Panel B: Mean Difference by Male-Female CFOs

	Male	Female	Mean1	Mean2	dif	St Err	t value	p value
Short Term Debt by CFO	12055	933	.318	.353	-.035	.012	-2.9	.004

Panel C: Regression after Propensity Score Matching (PSM)

Dependent variable is the ratio of short term debt (repayment within one year) divided by the total debt of the firm.			
	(1)	(2)	(3)
VARIABLES	Model 1	Model 2	Model 3
Female CFO	0.0538*	0.0710**	0.1279***
	(1.9583)	(2.4012)	(3.1725)
CEO Finexpert		0.0322	
		(1.3941)	
CFO Female* CEO Finexpert		-0.1237**	
		(-2.0027)	
Board Finexpert Ratio			-0.0355
			(-0.6762)
CFO Female* Board Finexpert Ratio			-0.2350***
			(-2.6431)
CFO Age	-0.0074	-0.0044	-0.0090
	(-0.1280)	(-0.0771)	(-0.1560)
CFO Finexpert Dummy	0.0054	0.0043	0.0127
	(0.2686)	(0.2115)	(0.6228)
CEO Chair Dummy	0.0364	0.0327	0.0367
	(1.6373)	(1.4684)	(1.6414)
Board Size	-0.0385	-0.0387	-0.0454
	(-1.1190)	(-1.1260)	(-1.3098)
Board Independence	-0.0195	-0.0272	-0.0160
	(-0.2691)	(-0.3750)	(-0.2215)
Institutional Ownership	-0.0007	-0.0007	-0.0006
	(-0.9555)	(-0.9696)	(-0.9209)
Firm Size	-0.0076	-0.0077	-0.0062
	(-0.4566)	(-0.4621)	(-0.3741)
M/B Assets	0.0652	0.0636	0.0650
	(1.1481)	(1.1191)	(1.1474)
Asset Maturity	-0.0008	-0.0007	-0.0008
	(-1.1936)	(-1.1568)	(-1.1849)
Earnings Volatility	0.0030	0.0048	0.0052
	(0.0635)	(0.1008)	(0.1079)
Leverage	-0.1571*	-0.1584*	-0.1597*
	(-1.8770)	(-1.9003)	(-1.9049)
Abnormal Earnings	-0.0004	-0.0004	-0.0004
	(-0.7057)	(-0.7431)	(-0.6855)
Altman Z Dummy	-0.0249*	-0.0249*	-0.0258*
	(-1.6625)	(-1.6676)	(-1.7295)
Constant	0.6484**	0.6382**	0.6579**
	(2.2563)	(2.2256)	(2.2829)
Observations	7,197	7,197	7,197
R-squared	0.0314	0.0328	0.0329
Number of BoardID	1,013	1,013	1,013
Firm FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes

Table 5.9: Transition Firms

This table presents the results from several regressions on the relationship between Female CFO and firm short term debt ratio as proxy of debt maturity for transition firms, defined as firms that experience a change from a male to a female CFO, or vice versa, over the course of the sample period. In each models, I use an ordinary least squares (OLS) regression with standard errors clustered at the firm level as well as firm and year fixed effect. CFO Female is a dummy variable taking value 1 if the CFO is female or 0 otherwise. All independent variables are measured on same year of dependent variable. Analytical definitions for all variables are provided in the Appendix. T Statistics are reported in parentheses. ***, **, and * denote statistical significance at the 1%, 5% and 10% levels, respectively.

Dependent variable is the ratio of short term debt (repayment within one year) divided by the total debt of the firm.

VARIABLES	Model 1	Model 2	Model 3
Female CFO	0.0561*	0.0739**	0.1324***
	(1.9389)	(2.3818)	(3.1985)
CEO Finexpert		0.0137	
		(0.3423)	
CFO Female* CEO Finexpert		-0.1243**	
		(-1.9896)	
Board Finexpert Ratio			0.0029
			(0.0267)
CFO Female* Board Finexpert Ratio			-0.2513**
			(-2.5394)
CFO Age	0.0140	0.0214	0.0054
	(0.1366)	(0.2134)	(0.0517)
CFO Finexpert Dummy	0.0046	0.0021	0.0187
	(0.1335)	(0.0622)	(0.5440)
CEO Chair Dummy	0.0687	0.0724	0.0709
	(1.4665)	(1.5208)	(1.5036)
Board Size	0.0707	0.0692	0.0578
	(1.0520)	(1.0378)	(0.8524)
Board Independence	-0.0516	-0.0775	-0.0617
	(-0.3554)	(-0.5325)	(-0.4326)
Firm Size	-0.0186	-0.0164	-0.0160
	(-0.5259)	(-0.4615)	(-0.4501)
M/B Assets	-0.0127	-0.0146	-0.0165
	(-0.1081)	(-0.1255)	(-0.1410)
Asset Maturity	-0.0001	0.0002	-0.0000
	(-0.0417)	(0.1384)	(-0.0164)
Earnings Volatility	0.0337	0.0370	0.0382
	(0.3713)	(0.4084)	(0.4106)
Leverage	-0.3376**	-0.3380**	-0.3394**
	(-2.0879)	(-2.0896)	(-2.0831)
Abnormal Earnings	-0.0017	-0.0017	-0.0017
	(-1.1913)	(-1.1929)	(-1.1674)
Altman Z Dummy	-0.0593	-0.0582	-0.0626
	(-1.5408)	(-1.5182)	(-1.6298)
Constant	0.4458	0.4041	0.4805
	(0.7574)	(0.6915)	(0.8019)
Observations	1,684	1,684	1,684
R-squared	0.4641	0.4662	0.4669
Firm FE and Year FE	Yes	Yes	Yes

Table 5.10: Firm Subsample Analysis

This table presents the results from several regressions on the relationship between Female CFO and firm short term debt on firms in groups based on sub periods 199-2008 and 2009-2019 due to change in the UK term structure of interest rate. In each models, I use an ordinary least squares (OLS) regression with standard errors clustered at the firm level as well as firm and year fixed effect. The dependent variable is defined as the ratio of short term debt divided by the total debt. CFO Female is a dummy variable taking value 1 if the CFO is female or 0 otherwise. All independent variables are measured on same year of dependent variable. Analytical definitions for all variables are provided in the Appendix. T Statistics are reported in parentheses. ***, **, and * denote statistical significance at the 1%, 5% and 10% levels, respectively.

Panel A: Sub period based on the UK Term Structure of Interest Rate						
Dependent variable is the ratio of short term debt (repayment within one year) divided by the total debt of the firm.						
VARIABLES	1999-2008	2009-2019	1999-2008	2009-2019	1999-2008	2009-2019
Female CFO	0.0276	0.0667	0.0546	0.0870**	0.1102	0.1424**
	(0.4126)	(1.6062)	(0.7271)	(2.0024)	(1.4277)	(2.1343)
CEO Finexpert			0.0085	0.0569*		
			(0.2162)	(1.8023)		
CFO Female* CEO Finexpert			-0.1642	-0.1621*		
			(-1.1432)	(-1.6728)		
Board Finexpert Ratio					0.0631	-0.0606
					(0.7077)	(-0.8446)
CFO Female* Board Finexpert Ratio					-0.2891**	-0.2329
					(-2.5416)	(-1.4287)
Constant	0.2385	0.8732**	0.2344	0.8369**	0.2562	0.8988**
	(0.5065)	(2.2162)	(0.4970)	(2.1404)	(0.5462)	(2.2686)
Lincom	-7.83***		-2.43**		-7.90***	
Observations	3,350	3,905	3,350	3,905	3,350	3,905
R-squared	0.0218	0.0197	0.0230	0.0227	0.0233	0.0216
Number of BoardID	783	686	783	686	783	686
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Panel B: Sub period based on Lord Davis Report on Gender (2011)						
Dependent variable is the ratio of short term debt (repayment within one year) divided by the total debt of the firm.						
VARIABLES	1999-2011	2012-2019	1999-2011	2012-2019	1999-2011	2012-2019

Female CFO	0.0639*	0.0157	0.0879**	0.0238	0.1313***	0.0784
	(1.6703)	(0.3792)	(2.1602)	(0.5787)	(2.7972)	(0.9615)
CEO Finexpert			0.0143	0.0369		
			(0.5248)	(0.9212)		
CFO Female* CEO Finexpert			-0.1556*	-0.0639		
			(-1.8876)	(-0.6514)		
Board Finexpert Ratio					-0.0301	-0.0724
					(-0.4645)	(-0.8318)
CFO Female* Board Finexpert Ratio					-0.2311***	-0.1988
					(-2.9413)	(-1.0130)
Constant	0.6820**	0.8505	0.6929**	0.8091	0.6911**	0.8799
	(2.0711)	(1.5903)	(2.1082)	(1.5398)	(2.1072)	(1.6473)
Lincom	-8.53**		-3.38**		-8.71***	
Observations	5,090	2,165	5,090	2,165	5,090	2,165
R-squared	0.0242	0.0177	0.0256	0.0185	0.0254	0.0195
Number of BoardID	878	562	878	562	878	562
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Table 5.11: Other Robustness Check

This table presents the results from several regressions on the relationship between Female CFO and firm short term debt. In Panel A, the dependent variable is defined as the ratio of short term debt minus current portion of long term debt divided by the total debt. In Panel B, I use the predicted value of leverage in the baseline models. All other variables are kept similar to baseline. Model 1 is the baseline model presenting female CFO and short term debt with all control variables. In Models 2 and 3, I use female CFO interaction with financial expert CEO and board financial expert directors ratio respectively. CFO Female is a dummy variable taking value 1 if the CFO is female or 0 otherwise. All independent variables are measured on same year of dependent variable. Analytical definitions for all variables are provided in the Appendix. T Statistics are reported in parentheses. ***, **, and * denote statistical significance at the 1%, 5% and 10% levels, respectively.

Panel A: Short term debt ratio alternative measure			
Dependent variable is the ratio of short term debt (repayment within one year) minus current portion of long term debt divided by the total debt of the firm.			
VARIABLES	Model 1	Model 2	Model 3
Female CFO	0.0302	0.0548**	0.0928**
	(1.1657)	(1.9907)	(2.0492)
CEO Finexpert		-0.0205	
		(-1.0133)	
CFO Female* CEO Finexpert		-0.1929***	
		(-2.7847)	
Board Finexpert Ratio			-0.0298
			(-0.5755)
CFO Female* Board Finexpert Ratio			-0.1906*
			(-1.7590)
Constant	0.7953***	0.7656***	0.7955***
	(2.9522)	(2.8456)	(2.9576)
Observations	5,017	5,017	5,017
R-squared	0.5891	0.5916	0.5898
Firm FE and Year FE	Yes	Yes	Yes

Panel B: Estimation with Predicted Leverage			
Dependent variable is the ratio of short term debt (repayment within one year) divided by the total debt of the firm.			
VARIABLES	Model 1	Model 2	Model 3
Female CFO	0.0499*	0.0678**	0.1284***
	(1.7122)	(2.1842)	(3.0244)
CEO Finexpert		0.0333	
		(1.4207)	
CFO Female* CEO Finexpert		-0.1306**	
		(-2.0099)	
Board Finexpert Ratio			-0.0297
			(-0.5640)
CFO Female* Board Finexpert Ratio			-0.2531***
			(-2.7037)
Constant	0.5975	0.5793	0.6154
	(1.1518)	(1.1199)	(1.1871)
Observations	7,024	7,024	7,024
R-squared	0.4839	0.4847	0.4847
Firm FE and Year FE	Yes	Yes	Yes

Chapter 6

Conclusion

6.1. Overview of Main Findings

This thesis emphasizes on the importance of the CFO in the present business setup. Nowadays CFO role has extended beyond treasurer and accountant towards strategic partner and executive board member with more influence and responsibilities. This thesis examines to what extent CFOs matter to corporate financial policies both from internal policies, that is liquidity management and dividend payout, as well as external policy to secure debt with favourable terms. For the first two empirical chapters, Chapter 3 and Chapter 4, I propose a new measure to capture the extent of the generalist career experience of CFOs and analyse how generalist CFOs impact firm cash and dividend policies. In the final empirical chapter, Chapter 5, I examine how female CFOs influence firm debt maturity structure. As CFOs are part of the top management team and intensely monitored by the board of directors, I observe board moderation on CFOs' financial decisions for all three empirical chapters.

In Chapter 3, I investigate the potential effect of Chief Financial Officers' (CFOs') generalist career experience on firm cash holdings. My baseline results confirm that firms with more generalist CFOs opt for more cash holdings than firms with less generalist CFOs due to their willingness to engage in risk-taking through more investment with internal finance, which is consistent with the upper-echelon theory. Furthermore, I show that female non-executive independent directors negatively moderate the relationship between generalist CFO and firm cash holdings consistent with the expectations based on the resource dependency theory and the gender based social role theory. Remarkably, the CFO effect is prominent only when the CEO is less dominant or the CFO joined the firm before the CEO following the notion of CEO dominance and principles of reciprocity from social exchange theory. Overall, the findings supports and extend the literature on CFO attributes and their influence on firm liquidity management. The study clarifies some of the debates on CFO attribute and cash holding, for example, female CFOs keep more cash due to risk aversion, whereas, strong CFO keeps less cash as their easy access to finance; this study focus

on under-researched area, CFO experience, as of CFO attribute that can be developed over time with careful consideration rather than being a binary or one dimension trait.

In Chapter 4, I explore the potential effect of Chief Financial Officers' (CFOs') generalist career experience on firm dividend policy. Prior studies mostly focused on CFO gender as female mangers play risk averse socially concern role with higher dividend payout. I attempt to observe how CFO experience from diverse career impact on their decision to handle a market price sensitive issue like dividend that has been under researched in CFO and dividend literature. The baseline results confirm that firms with more generalist CFOs opt for less dividend payment than firms with less generalist CFOs due to their willingness to risk-taking through more investment with internal finance. Furthermore, such dividend-cut decision is more pronounced for firms with shorter-tenured CFOs, as with longer-tenure, CFOs become specialists in their current firms and behave accordingly inside firms. Interestingly, female board representation positively moderates the relationship between generalist CFO and firm dividend due to their monitoring role and ethical commitment towards stakeholders. The results are consistent with different endogeneity checks and robustness checks.

Noteworthy to mention, my first two empirical chapters, Chapter 3 and Chapter 4 are interconnected. Cash availability is one of the prominent determinants of dividend payout decision; my empirical findings in these two chapters are consistent, that is, generalist CFOs are deciding on less dividend payout and saving more cash to invest more with internal financing. In short term, generalist CFOs might sound like detrimental to shareholders by cutting dividend, however, in long run, shareholders will benefit from the investment considered by such CFOs with low cost less disclosed internal financing.

Furthermore, I utilize female representation on board as a moderating factor and evident valuable insights. Board is the Final decision maker for any public firms and female INED representation is evident for string monitoring in literature. As generalist managers are found to have high job switching and risk taking tendencies, female representation in board is expected to moderate their decisions. In my empirical finds, for both the cash and dividend policy, female directors are found significant moderator of generalist CFOs decision. On top of that, overall female representation is significant

moderator for dividend decision, whereas, only female INEDs are significant moderator for cash decision. One possible reason could be dividend being too obvious to be ignored due to its market sensitivity, whereas, cash is internal decision with less obvious effect on external stakeholders.

In Chapter 5, I focus on CFOs influence on external corporate financial decision, that is, firm debt maturity structure. Needless to say, such decision depends on CFO negotiation power, given the firms financial health and financial market's subjectivity on the CFO attributes in the context. Current literature is mostly based on the USA firms and provide mixed evidence. For example, Datta, Doan and Toscano (2021) evident female CFOs take short term debt, whereas, Fracis *et al.* (2013) evident female CFOs enjoy long term debt from bank due to their disclosure upfront. This debate needs to be addressed from the UK context where literature evident gender base credit discrimination for female entrepreneurs and female-led firms. Furthermore, in this chapter, I present the first empirical investigation of the interplay between the dynamics of female CFOs and the financial expertise of the CEO and board of directors for firm debt maturity policy.

The results show that female CFOs take more short-term debt due to their ethical commitment and "do not mind" attitude towards intensive external monitoring compared to male CFOs, which is similar to the findings of Datta, Doan and Toscano (2021). An alternative explanation could have been such that female CFOS are risk taker due to their piercing glass cliff and take short term debt at risky decision; however, further analysis reject such risk taking. In subsample analyses, such negative association is significant only for firms with lower leverage ratio and lower CFO tenure, suggesting that female CFOs are not risk takers (that might make them prone to take more short-term debt considering its refinancing risk). Instead, it is their mere ethical attitude to receive external monitoring with refinancing. The results are consistent with different robustness checks. Finally, the CFO stock option significantly alleviates the positive association between female CFOs and short-term debt. With more stock options, CFO becomes more of a shareholder and may be prone to avoid unnecessary external supervision.

Furthermore, the analyses show financial sector expert CEOs and boards significantly curtail female CFOs' short-term debt-taking; this finding provide an important insight, that is, as soon as financial sector experts join the top management team and/or the board of directors, they might bring better external financing source with favourable loan terms, for example, long term debt, and the need for recurring short term debts reduces. In other words, financial sector experts enhance firm's overall debt taking capacity. The study contributes to the literature by examining the conditions under which female CFOs lead to substantial effects on firm policy and performance, and significance of board financial expertise for better governance.

6.2. Implications

My analyses results have significant implications for boards tasked with the recruitment and compensation of top-executive teams. The complexity of the finance function demands a deep understanding of the traits that make a good CFO. Furthermore, boards need to identify the suitable compensation package that will motivate top management to drive the firm in the right direction. The findings show that firms with generalist CFOs are engaged in risky decisions at substantially higher rate compared to firms with less generalist CFOs; thus, board may grant less equity incentives to in compensation package of generalist CFOs to avoid excessive risk-taking activates. In addition, in line of previous studies, the findings show that female CFOs are risk-averse and ethical role players. Board can motivate and channel the talent based on firm requirements.

Furthermore, CEO-CFO dynamics within top management team is evident in the findings. My findings present that CFOs have significant impact on firm financial polices only in the case where CEOs are less dominant, less powerful, and willingly to delegate financial responsibilities towards their CFOs. Particularly, in Chapter 3, my results show financial sector expert CEOs significantly moderating influence on female CFOS with respect to firm debt maturity decision. Board needs to care for CEO-CFO compatibility and ideally position them to mitigate the excessive risk-taking and entrenchment.

Another critical policy implication is that the findings evident strong monitoring by female representation on board which has been proposed in recent policy reforms by the UK Government, the UK Financial Reporting Council (UK FRC), and the UK Financial Conduct Authority (UK FCA). Within the existing corporate governance framework in the UK firm, a gender-diverse board would be an effective way to maintain the sensible liquidity and dividend policy of the firms. My findings also support recent regulatory urge (Hampton-Alexander Review FTSE Women Leaders Improving Gender Balance in FTSE Leadership, 2018) for firms to increase female participation on corporate boards. I provide evidence that female board representation effectively moderates and mitigates agency issues that might arise from excess cash holding and dividend decrease decisions by generalist CFOs. Female directors with monitoring roles can ensure robust controls and consequently reduce cash holdings to lower agency costs, and managerial opportunism (Harford, Mansi and Maxwell, 2008). I show that female directors only moderate CFOs' cash-hoarding decisions in firms with a lower traditional motive for cash holdings. The study upholds the evidence that female-inclusive governance may limit value-eroding managerial decisions while promoting strategies to ensure long-term value. I also find that the expertise of board of directors themselves are very relevant to conduct board monitoring effectively, this has important implications for policymakers of corporate governance while setting the expectation for board composition.

This thesis's findings emphasise the impact of CFOs on firm financial decisions and value addition in the long run. In particular, generalist CFOs can engage in risky investments with internal finance and assure firm sustenance through such investment rather than merely paying back returns to the owners as dividends. Furthermore, female CFOs can ensure and improve the quality of business statements with fair representation. Therefore, appointing a CFO with generalist career experience and a female CFO implies improving firm performance in the long run. Furthermore, this study emphasises the dynamics between managers and the board of directors and how managers in the higher hierarchy and the board of directors moderate the managerial decisions. Finally, my findings are strong evidence for shareholders and other corporate stakeholders on how gender-diverse boards can mitigate managers' excessive risk-taking behaviour, which may guide the stakeholders in future investment decisions.

6.3. Limitations and Suggestions for Future Research

While the thesis has reached its aim and found plausible answers to its research questions. it is not beyond limitation. Corporate governance research demands methodological advances (Aguilera, Florackis and Kim, 2016; Bezemer *et al.*, 2022), e.g., a mixed method approach to capture qualitative and quantitative aspects of the business phenomenon. In my thesis, I used an archival dataset, but combining the secondary data with the CFO survey and interview data would have been better. Furthermore, I have covered CFO gender and experience but do not account for CFO behavioural aspects like overconfidence. Future research may focus on CFO overconfidence and how it affects firm decisions.

Various potential pathway exists for future research. A natural extension of this thesis would be testing the CFO role concerning other firm financial policies. A potential candidate is firm investment efficiency in the presence of generalist CFOs. As my findings suggest, generalist CFOs tend to overinvest, but the marginal value of their cash holding is positive; exploring the reasons for these seemingly contradictory paths can be insightful. Furthermore, one can also investigate the role of the CFO in firm financial risk management. Given the various global financial crisis (crisis 2008, Eurozone debt crisis, uncertainty with Brexit, panic with Silicon Valley Bank run 2023), CEOs and boards of directors increasingly rely on firm CFOs to oversee firm risk management procedures. It would be interesting to examine the interaction between CFO and the board on firm financial risk management.

Another line of research could highlight the interaction between CEOs and CFOs regarding firm policies (Wang, Lau and Yang, 2020). As the CFO has the most significant corporate tie with the CEO (Zorn, 2004), their compatibility and set of skills could be an intriguing topic to explore. Even though both top managers have a distinct decision-making styles (Graham, Harvey and Puri, 2013; Uhde, Klarner and Tuschke, 2017), it is important to investigate when CFOs and CEOs collaborate or act as counterplayers and how their capacity balance impacts firm strategic decision-making.

Moreover, prior studies are somehow controversial on the relationship between board diversity and firm policy depending on the context; future studies should attempt to develop advance theoretical models to disentangle the causal process behind such outcomes (Martins and Sohn, 2022). Future studies may examine the primary effect of board diversity, whether its on board functionality or firm accomplishment, and how these outcomes are moderated by key contextual factors (Martins and Sohn, 2022), like institutions' structure, industry characteristics (Cumming and Leung, 2021), and complexity inside firm (Zona, Zattoni and Minichilli, 2013). Future studies may attempt to develop a global understanding of board diversity by investigating firms from multiple countries, including emerging and transition markets.

Last but not least, future research should compare and contrast the findings reported in this thesis to other countries. I hope that my studies stimulate more empirical research on board governing the CFO, thus enhancing our understanding of how boards monitor and advise individual top managers aside from the CEO.

6.4. Final Remarks

This thesis contributes towards better understanding on the roles of CFOs on firm financial polices based on their attributes and the monitoring role of diverse boards on CFOs in non-financial UK listed firms in context of existing theories and empirical evidence. My findings have significant policy implications for board with recruitment and managerial reward responsibilities to employ the suitable candidate for dynamic CFO positions who will coordinate with firm's development requirements. Furthermore, my findings support that regulatory urge for female inclusion both in the top management and in the board. I hope that findings of the thesis will stimulate more empirical research on compatibility between top management and board governance to enhance sustainable business for stakeholders.

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