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Female CFOs, Leverage and the Moderating Role of Board Diversity and CEO Power

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Abstract

This paper investigates the extent to which female Chief Financial Officers (CFOs) affect corporate leverage. We examine female CFOs in UK firms and find that they significantly reduce the leverage of the firm; however, a female CFO's ability to influence corporate leverage is moderated by the senior decision-making environment in the firm. In particular, female CFOs are more effective in reducing leverage in firms with boards that are diverse with respect to gender, nationality and age, and in firms where the Chief Executive Officer (CEO) is not overly powerful. In addition, we find that externally appointed female CFOs reduce leverage more, in line with them having less allegiances to other top managers and greater scope to deviate from existing policies. Our work contributes to the literature by examining the conditions under which gender-specific risk-taking preferences lead to observable effects on corporate outcomes.

1. Introduction

A broad literature in psychology and finance suggests that women differ in their preferences and dispositions from men and tend to be more risk-averse, less overconfident and more averse to competition (e.g. Barber and Odean, 2001; Croson and Gneezy, 2009; Bertrand, 2011; Charness and Gneezy, 2012). These findings raise the question whether those gender differences are also observable at the highest echelons of the corporate hierarchy and as such, have effects for corporate outcomes and resource allocations. Looking at the breadth of literature to date, many studies show that female executives and directors are linked to more conservative and less risky corporate policies and outcomes, such as a lower propensity to engage in mergers and acquisitions (Huang and Kisgen, 2013; Levi et la., 2014), lower stock price crash risk (Li and Zeng, 2019), more conservative financial reporting policies (Francis et al., 2015; Srinidhi et al., 2011), and a lower likelihood to manipulate financial statements (Gupta et al., 2020), commit corporate fraud (Cumming et al., 2015), or cross-list firms (Shoham et al., 2020). Further studies document stronger risk-aversion among female corporate executives as an explanation for the gender gap in executive compensation (e.g. Carter et al., 2017). Looking in particular at female executives' impact on a firm's capital structure, one of the most important corporate policies, existing studies find that firms run by female executives have lower leverage (Faccio et al., 2016) and issue less debt (Huang and Kisgen, 2013), in line with risk-avoidance behaviour by female leaders.

However, evidence in the literature is not unanimous. Some research shows that women who enter the executive suite are at least equally risk seeking and competitive as their male counterparts (e.g. Adams and Funk, 2012; Berger et al., 2014; Adams and Ragunathan, 2017), while other studies do not document a significant link between board gender diversity and firm risk-taking (Sila et al., 2016; Garcia Lara et al., 2017). Regarding effects on corporate leverage, Matsa and Miller (2013: 161) study the impact of gender quotas in Norway and they do not find a change in firm leverage after a board gender quota is introduced, concluding that "risk aversion may not be a distinctive part of women's approach to corporate decision-making". Taken together, these findings imply that the link between gender-specific differences in managerial risk-taking and their effects on organisational outcomes, such as corporate leverage, are more complex and multi-faceted than the previous literature might suggest.

We contribute to this literature by approaching the question of gender-specific differences in corporate leverage choices from a new perspective: we examine under which conditions gender

differences are observed and whether these conditions can tell us something about female leaders' risk-taking preferences and the impact of gender on corporate policies. In particular, we extend the prior work by Huang and Kisgen (2013) and Faccio et al. (2016) by analysing the impact of female CFOs on corporate leverage for a sample of UK public corporation and, unlike prior studies, we explicitly consider the managerial decision-making environment under which female CFOs affect leverage. We show that female CFOs are associated with lower leverage, but only in firms that are not run by a powerful CEO, firms with high levels of board diversity and if female CFOs are externally appointed. We focus on the impact of CFO gender on corporate leverage, as the role of the CFO provides us with an ideal testing ground for the conditions under which managerial gender differences might be observed due to leverage falling under CFOs' area of responsibility in UK corporations (Beattie et al., 2006) and CFOs' varied relationships with other key decision makers in the firm, namely the CEO and the board. In addition, leverage is a widely known indicator for a firm's riskiness (Molina 2005; Bhagat et al. 2015; Faccio et al. 2016) and enables us to analyse whether, and under which conditions, gender differences in corporate risk-taking can be observed.

The CFO has arguably become the most important corporate executive other than the CEO (e.g., Chasan and Murphy, 2013; Wood, 2013). With responsibilities spanning financial reporting, capital structure allocations, financial planning and financial risk management, CFOs have oversight over key areas of firms' strategic decision making (Hoitash et al., 2016; Ham et al., 2017). However, a large share of the literature investigating the effect of managerial gender on corporate policies and financial performance focuses on the role of CEOs and female board representation (e.g. Levi et al., 2014; Faccio et al., 2016; Matsa and Miller, 2013), whereas the role of the CFO has so far received less attention, despite its growing importance in modern corporations (Uhde et al., 2017; Zorn, 2004). As pointed out by Gupta et al. (2020: 804), "[t]he inattention to CFOs [in the academic literature] is particularly troubling when it comes to corporate financial decisions, which is an area where the CFO wields substantial influence".

A small but growing stream of literature on the role of CFOs suggests that in several areas the characteristics of the CFO are more important in explaining corporate policies and performance than those of the CEO, such as firms' capital structure (Bertrand and Schoar, 2003; Frank and Goyal, 2007). In particular, Frank and Goyal (2007) show that CFOs are more influential than CEOs in determining firms' leverage. Hence, we can reasonably assume that potential changes in

a firm's leverage reflect the decisions made by the CFO, which in effect enables us to more confidently associate observable differences in firms' leverage levels to CFO gender effects.[1]

Leverage is a widely known indicator for a firm's riskiness as higher leverage is shown to raise a firm's likelihood of financial distress and default risk (Molina 2005; Bhagat et al. 2015; Faccio et al. 2016). Existing literature finds that the leverage-induced increase in corporate risk affects managers' career risk as managers of firms experiencing financial distress and default have a higher likelihood of career turnover (Gilson, 1989; Nini et al., 2012) and lower chances of onward employment in other firms (Gilson, 1989; Eckbo and Thorburn, 2003). Hence, more risk-averse managers may prefer lower corporate leverage to mitigate potential negative career consequences resulting from financial distress.[2] Therefore, if female CFOs are more risk-averse and this preference translates into their corporate decisions, we expect to observe lower leverage levels for firms run by female CFOs. In addition, the representation of women among CFOs is considerably higher than among CEOs – in our sample it is more than double, on average, and has seen a strong rise over the sample period (see Figure 1).[3] Hence, female CFOs provide a richer sample to study compared to female CEOs and we avoid some of the small sample issues faced by studies on female CEOs.

Furthermore, CFOs are an interesting subject from a gender perspective due to their varied relationships with other key decision makers in the firm, such as the CEO and the board, which enables us to examine under which conditions female CFOs affect leverage. To investigate the conditions when gender differences can be observed, we deploy managerial discretion theory, which posits that if managers have greater managerial discretion, i.e. greater leeway and power to influence firm actions, managerial characteristics, such as gender-specific risk-taking preferences, are reflected in corporate policies, whereas if their leeway and decision-making power is restricted, their preferences do not translate into corporate outcomes (see Hambrick, 2007; Quigley and Hambrick, 2015; Wangrow et al., 2015). In line with managerial discretion theory, we argue that if gender-specific differences in CFOs' leverage preferences exist, we are more likely to observe them under a decision-making environment in which female CFOs have greater flexibility and power, i.e. greater managerial discretion to influence firm's leverage. On the other

[1] As stated by Hambrick (2007), it is important to carefully match the corporate outcomes to the individual managers that are primarily responsible for them when testing if managerial characteristics, such as gender, matter.

[2] A growing literature shows that corporate managers align their personal debt preferences with those of the firm (Cronqvist et al., 2012; Korkeamäki et al., 2017), but these studies do not explicitly test for gender effects. The relevance of managerial preferences for firms' capital structure is in line with survey evidence of UK CFOs who state that company's senior management ranks as the most important driver of capital structure targets (Beattie et al., 2006).

[3] In our sample, female representation is 5.38% amongst CFOs and only 2.47% amongst CEOs.

hand, even if male and female CFOs differ in their leverage choices, these preferences would not translate into observable differences in corporate leverage if their influence over corporate policies is curtailed by the CEO or the board.

Managerial discretion to influence corporate policies depends, in great part, on female CFOs' relationship to other powerful executives and directors who can constrain or magnify their effect on corporate outcomes (Wangrow et al., 2015). CFOs are subordinate to the CEO in the corporate hierarchy and this subordination allows us to test whether the impact of female CFOs on corporate leverage is moderated by the power of the CEO. In particular, we argue that we only expect to see differences in corporate leverage between firms run by female and male CFOs if they are not dominated by a powerful CEO. In addition, we expect that female CFOs will have a greater impact on leverage choices in firms with boards that are diverse with respect to gender, nationality and age. Finally, internally appointed CFOs might be restricted in their managerial discretion due to closer ties to the current CEO, while externally appointed CFOs may have less allegiances to other top executives at the firm, allowing them greater managerial discretion. Thus, we expect that female CFOs who are externally appointed will reduce leverage more than internally appointed candidates. In line with the existence of gender-specific differences in leverage choices, we find that firms run by female CFOs have lower leverage. In addition, female CFOs only reduce leverage in an environment in which they have greater managerial discretion, such as in firms with highly diverse boards, firms not run by a powerful CEO and if they are externally appointed. These findings are in line with prior studies which link women leaders to more conservative and less risky corporate policies and outcomes (e.g. Srinidhi et al., 2011; Huang and Kisgen, 2013; Levi et al., 2014; Cumming et al., 2015; Francis et al., 2015; Faccio et al., 2016; Li and Zeng, 2019; Gupta et al., 2020; Shoham et al., 2020), but unlike these existing studies we shed light on the conditions under which these gender effects are observed and as such highlight the importance of the moderating impact of CEO power, board diversity and hiring status on female CFOs' ability to affect leverage.

Our paper makes several contributions to the literature. First, we add to the small but growing literature on the impact of female CFOs on corporate policies. Several empirical studies find that female CFOs are associated with improved accrual quality and increased accounting conservatism (Barua et al., 2010; Francis et al., 2015), lower future stock price crash risk (Li and Zeng, 2019), more favourable loan contract terms by banks (Francis et al., 2013) and a lower likelihood to manipulate financial statements (Gupta et al., 2020). Our results document that the presence of a female CFO is negatively associated with firm leverage, but only when they have

greater leeway to influence corporate decisions. To the best of our knowledge, only one further study examines under which conditions female CFOs are most influential in affecting specific firm actions. Gupta et al. (2020) apply managerial discretion theory to explain female CFOs' likelihood to manipulate financial statements. However, unlike our study, they do not focus on the role of CEO power, board diversity and hiring status as moderators of female CFOs' managerial discretion, but they examine the moderating impact of external stakeholders in the form of institutional investors and financial analysts. In this way, our study extends research into the conditions under which gender differences will be present by investigating the impact of the internal senior decision-making environment on the presence of gender effects.

Second, we contribute to the literature on board diversity by documenting that greater board diversity indirectly affects the degree to which female CFOs influence financial policies. There exists a broad literature that investigates the 'value-added' effect of board diversity along a variety of dimensions including gender, nationality, age and professional backgrounds (e.g., Adams and Ferreira, 2009; Anderson et al., 2011; Gul et al., 2011; Matsa and Miller, 2011, 2013; Francis et al., 2015; Fang et al., 2018; Bernile et al., 2018) showing that more diverse boards are associated with lower risk levels, greater persistence of corporate policies, board structure and attendance, more employee-friendly policies and greater diversity below the board level. However, to the best of our knowledge, we are the first to provide evidence that greater board diversity can also indirectly affect corporate policies of senior executives by creating a more inclusive decision-making environment that allows female CFOs to be more effective in shaping firms' leverage policies.

Third, our findings relate to research into the effect of powerful CEOs. There is a vast body of literature that shows the importance of CEO power in explaining a variety of corporate outcomes and the adverse consequences of CEO power, such as biased performance measures (Friedman, 2014), rigging of incentive contracts (Morse et al., 2011), accounting manipulation (Feng et al., 2011), increased likelihood of fraud (Khanna et al., 2015), higher stock price crash risk (Mamun et al., 2020) and lower firm profitability (Bebchuk et al., 2011). However, much less research has been conducted on the moderating effect of CEO power and its impact on the managerial discretion of other executives. While previous studies have found that CEO power serves as a moderator for the ability of diverse boards to initiate strategic change (e.g. Haynes and Hillman, 2010), we are the first to show that CEO power also directly restricts female CFOs in their discretion to exert influence on corporate leverage policies.

Finally, our findings have practical implications for corporate boards and policy makers who aim to strengthen the role of female leaders in corporations. Given increasing pressures on policy makers and boards of directors to have more female representation in executive positions (Adams, 2016), our results suggest that merely increasing the number of women in specific roles, e.g. via female quotas, is unlikely to be sufficient in improving women's impact on corporate policies. Instead, our findings imply that strengthening female managers' role and influence in corporations requires a consideration of the broader managerial decision-making environment in which they operate and their relation to other key decision makers, such as the CEO and other board members. In particular, policy makers and corporate boards should focus on creating an inclusive environment that allows female managers sufficient leeway to shape corporate policies.

The rest of this paper proceeds as follows. Section 2 derives testable hypotheses. Section 3 introduces the dataset, provides variable definitions and explains the baseline methodology. Section 4 presents results of the empirical tests on the overall impact of CFO gender on corporate leverage as well as the moderating effect of the senior decision-making environment on female CFOs' impact on corporate leverage. Section 5 tests the robustness of our results to alternative specifications, while Section 6 summarises our findings and discusses their implications for policy makers and corporate decision makers.

2. Hypothesis Development

Leverage and Female Risk Aversion

There is a broad literature on the determinants of corporate leverage starting with the seminal work by Modigliani and Miller (1958). Traditionally, studies aimed to link corporate leverage to market, industry, and firm characteristics, while more recently a stream of the literature argues that one central determinant of firms' leverage are the debt preferences and personal characteristics of the managers that run these firms.[4] For instance, Cronqvist et al. (2012) and Korkeamäki et al. (2017) demonstrate that managers' personal debt preferences are reflected in the capital structure of their firms. Bertrand and Schoar (2003) and Frank and Goyal (2007), using manager fixed effects, show that CFOs significantly affect their firms' capital structure and are more important in explaining corporate leverage than CEOs, while survey evidence

[4] See Parsons and Titman (2008) for an overview of the capital structure literature with a separate section on the effect of managerial characteristics on firms' leverage.

presented in Beattie et al. (2006) reports that company's senior management, and particularly the CFO, are considered the most important determinant of UK firms' capital structure targets. Leverage is a key indicator of a firm's riskiness: higher leverage is shown to raise a firm's likelihood of financial distress and default risk (Molina 2005; Bhagat et al. 2015; Faccio et al. 2016) and these increased firm risks can translate into higher career risks for the managers of these firms. In particular, managers of firms experiencing financial distress and default have a higher likelihood of career turnover (Gilson, 1989; Nini et al., 2012) and lower chances of onward employment in other firms (Gilson, 1989; Eckbo and Thorburn, 2003). Taken together, these studies indicate that more risk-averse CFOs may prefer lower corporate leverage to mitigate negative career consequences resulting from financial distress and to align their corporate decisions with their personal risk-taking preferences (Hackbarth, 2008).

This prediction provides an interesting testing ground for the impact of CFO gender on corporate leverage. There is a broad literature which suggests that women tend to make less risky decisions, are more conservative in their investment choices and exhibit lower levels of overconfidence than men (Croson and Gneezy, 2009; Bertrand, 2011). Women have also been shown to focus more on strategies that avoid the worst outcomes and offer greater security (Byrnes et al., 1999: Cumming et al, 2015). For instance, the portfolios of women investors are found to be less risky than those of their male counterparts (Barber and Odean, 2001), female investors tend to consider risk attributes, such as the possibility of loss and ambiguity, more heavily and are more likely to focus on risk reduction than men in their portfolio investments (Olsen and Cox, 2001), and women prefer to hold less risky assets in their retirement plans (Agnew et al., 2003). In addition, there is mounting evidence that these gender-specific risk-taking preferences also translate into corporate decision making in senior management. For instance, firms run by female CFOs are found to exhibit less risky corporate policies and firm actions, including more conservative financial reporting practices (Barua et al., 2010; Francis et al., 2015), lower stock price crash risks (Li and Zeng, 2019), lower likelihood of financial misreporting (Gupta et al., 2020) and a lower propensity to engage in mergers and acquisitions and to issue debt (Huang and Kisgen, 2013).

Therefore, if female CFOs are more risk-averse and this preference translates into their corporate decisions, we expect to observe lower leverage levels for firms run by female CFOs:

H1: Firms with female CFOs have lower leverage than firms with male CFOs.

On the contrary, if women at the highest level of the managerial hierarchy, such as female CFOs, are different from the general public in their risk-taking preferences as suggested by evidence in Adams and Funk (2012) and Matsa and Miller (2013), we would expect firms run by female CFOs not to differ in their leverage from firms run by male CFOs.

Managerial Discretion as a moderator of Female CFOs' Impact on Leverage

Another consideration that could explain differing findings in the literature on the effect of gender on managerial decision-making and hence corporate outcomes relates to the decision-making environment and the critical factors under which gender differences might materialise. We deploy managerial discretion theory to derive hypotheses regarding the conditions under which female CFOs' risk-taking preferences are more likely to translate into a measurable impact on corporate leverage, and under which conditions we do not expect gender differences to lead to observable effects on corporate outcomes. Managerial discretion theory focuses on the leeway available to managers to influence corporate policies, i.e. their managerial discretion (Hambrick, 2007): if managers have greater managerial discretion, i.e. greater leeway and power to influence corporate actions, managerial characteristics, such as gender-specific risk-taking preferences, are more likely to be reflected in corporate policies, whereas if their leeway and decision-making power is restricted, their preferences do not translate into corporate outcomes (Quigley and Hambrick, 2015; Wangrow et al., 2015). Female managers' discretion depends, in large part, on their relationship to other executives and directors who can constrain or enhance their impact on corporate outcomes (Wangrow et al., 2015). In the context of female CFOs and their leeway and power to influence corporate leverage choices, we argue that the power of the CEO, the diversity of the board of directors and CFOs' hiring status are important moderators of female CFOs' impact on corporate leverage. We derive testable hypotheses regarding the moderating effect of these factors below.

Moderating Effect of Board Diversity

Building on the literature on group heterogeneity, a recent stream of research investigates the role of board diversity in affecting the decision-making environment in firms and its impact on corporate policies. In particular, a more diverse board capturing a high diversity of gender, culture, nationality and age may affect the quality and processes of decision making (Hoogendoorn et al., 2013) through the advice directors provide to executives and by acting as gatekeepers for strategic proposals (Stiles, 2001). As argued by Fang et al. (2018: 475), "a high

degree of diversity of culture, gender, and race can effectively weaken social barriers" and hence may create a decision-making environment in which female CFOs have a greater ability to affect corporate policies. Relating to Kanter's (1977) argument regarding the tokenism status of many women in corporate leadership roles and their associated lower influence and status, greater board diversity may alleviate the potential tokenism status of a female CFO and equip female CFOs with greater influence over corporate policies (see also Liu et al., 2014). In addition, greater board diversity may foster creativity and openness to new ideas in the boardroom and therefore improve the decision-making process. For instance, Haynes and Hillman (2010) show that boards which possess more diverse human and social capital are more likely to adopt strategic changes than homogeneous boards who tend to show patterns of 'groupthink' (e.g. Gompers et al., 2016), which can hinder the adoption and discussion of new strategic proposals. Also, results presented in Joecks et al. (2013) suggest that firms require a critical mass of women representation on the board for these women to influence firm performance. As most CFOs in UK corporations sit on the board of their firms (Florackis and Sainani, 2018), female CFOs' relationship to the other board members and their potential 'tokenism' status can affect their actual or perceived leeway to influence, and change, existing leverage structures. In contrast, if the board of directors is characterised by high levels of diversity, this might alleviate female CFOs' minority status and grant them greater influence over leverage choices. In line with this reasoning, we state the following hypothesis:

H2: Female CFOs are more effective in affecting leverage in firms with a diverse board.

Moderating Effect of CEO Power

CEO power also serves as a moderator of the influence of other executives and directors on corporate decisions and policies. Haynes and Hillman (2010) find that powerful CEOs threaten the independent judgement of directors and other executives in matters of strategic change which results in an environment where the preferences of the CEO dominate those of other executives. Following Finkelstein's definition, we can understand CEO power as "the capacity of individual actors to exert their will" (Finkelstein, 1992: 506). Hence, in a firm that is run by a powerful CEO, other executives subordinate to the CEO, such as the CFO, will have less influence to shape corporate policies but can be regarded as the operational arm of the CEO, merely executing the CEO's policy preferences. This is in line with findings by Adams et al. (2005) who show that more powerful CEOs are less open to compromise with other executives, leading to more extreme decisions and policies. Managerial discretion theory postulates that in

the presence of powerful stakeholders such as the CEO, the managerial discretion of other executives is restricted and their managerial characteristics, such as gender-specific risk-taking preferences, will not affect corporate outcomes (Wangrow et al., 2015). The lack of influence in the presence of powerful CEOs might be particularly severe for executives that represent minority groups in leadership positions, such as women. Assuming that under the presence of powerful CEOs female CFOs will be restricted in their power and influence to adopt corporate policies based on their preferences, we can derive the following hypothesis:

H3: Female CFOs are more effective in affecting leverage in firms with less powerful CEOs.

Moderating Effect of CFOs' Hiring Status

Finally, we argue that the hiring status of CFOs affects their degree of managerial discretion (Mian, 2001) and hence their likelihood and ability to make changes to existing corporate practices (Geiger and North, 2006), such as leverage choices. In particular, internally appointed CFOs may be more aligned to the current structures and policies of the firm and more closely tied to the current CEO, which restricts their leeway to shape leverage based on their personal preferences and makes them less likely to deviate from existing corporate policies. On the other hand, externally appointed CFOs are expected to have less allegiances to other top executives at the firm, allowing them greater managerial discretion, which in effect should make them more likely to deviate from the existing trend of corporate policies. In line with this argument, Geiger and North (2006) find that firms appointing new CFOs from outside the firm exhibit a strong decrease in discretionary accruals, while internal appointments of CFOs do not lead to significant changes in financial reporting practices. Applying this logic to gender differences in CFOs' leverage choices, we expect that externally appointed female CFOs will have greater managerial discretion to change corporate leverage based on their risk-taking preferences than internally appointed female CFOs, resulting in the following hypothesis:

H4: Female CFOs are more effective in affecting leverage when they are externally appointed.

3. Data and Methodology

3.1. Sample Selection

The analysis is based on a sample of CFOs at publicly listed firms on the London Stock Exchange. The UK setting provides an ideal context for our study since CFOs play more

important roles in the UK corporate landscape than in the US (Florackis and Sainani, 2018) and CEOs in the UK are less powerful than in the US (Keenan, 2004; Aguilera et al., 2006). Our sample period is from 1999-2017 where we begin by extracting data on CFOs from the BoardEx database which provides detailed data on the CFOs of firms.[5] Consistent with Florackis and Sainani (2018), we identify CFOs based on the data item "individual role" and by pinpointing the following titles: CFO, chief financial officer, finance director (FD), group finance director (GFD) and executive director (finance). Board characteristics are also obtained from BoardEx while firm characteristics and accounting information are obtained from Thomson Reuters Datastream. Following prior literature, we exclude all financial and utility firms from the analysis as they have very different corporate structures to other firms and we also exclude observations with missing values. Our final sample contains 7,899 firm-year observations and 1,131 firms listed on the London Stock Exchange. The number of firms that disappear during our sample is 260. All continuous variables are winsorised at the 1st and 99th percentiles to avoid outliers skewing our results.[6]

Figure 1 and Table 1 show the distribution of female CFOs over our sample period. We clearly see a substantial increase in female CFOs throughout our sample period, with 10% of firms having a female CFO in 2017 compared to just 4% in 1999 and 2% in 2000 and 2001. We also observe a strong increase in the percentage of female directors on the board, starting with only 4% in 1999 to 13% in 2017. As shown in Figure 1, the rise of female representation among UK CFOs and directors in general has seen a particularly strong growth from 2011 onwards. This trend coincides with the publication of the 'Women on Boards' report by Lord Davies in February 2011 which recommended an increase of women in UK boards. We will explore this issue further in Section 5.1.4. In comparison, the presence of female CEOs in our sample firms is much lower with only 2% of firms being run by a female CEO on average between 1999-2017. In addition, the rise of female representation among CEOs has been much more muted with only 5% of firms being led by a woman in 2017. Looking at the board composition more generally, we see a small decrease in board size over time, whereas board independence has gradually risen indicating a shift in corporate governance structures in UK public companies. The final column in Table 1 reports the number of firms in our sample in each year, reflecting

[5] BoardEx is a popular source for data on CEOs and has been used in recent papers such as Florackis and Sainani (2018) and Conyon et al. (2019), for example.
[6] We also re-estimate our main analysis where we include financial and utility firms and do not winsorise our continuous variables and our results remain consistent.

the omission of firms with missing values and the removal of finance and utility firms. Our sample comprises an average of around 416 UK firms per sample year.

Table 2 provides the distribution of female CFOs by industry in the UK. 7% of firms have female CFOs in the consumer goods and technology industries, while only 3% of firms have female CFOs in the healthcare and telecommunications industries. In addition, we generally observe that industries with a higher percentage of female CFOs tend to have a higher percentage of female directors, with the exception of the telecommunications sector.

3.2. Methodology

In this paper, we examine the impact of CFO gender on corporate leverage where we begin with the following fixed effect panel data regression model:

$$Leverage_{i,t} = \alpha + \beta * FemaleCFO_{i,t-1} + \theta * BoardDiversity_{i,t-1} + \sum \gamma * ControlVariables_{i,t-1} + FirmFE + YearFE + \varepsilon_{i,t} \quad (1)$$

The dependent variable $Leverage_{i,t}$ is a measure of a firm's reliance on debt financing relative to equity financing. $FemaleCFO_{i,t-1}$ is a dummy variable equal to one if the CFO is a woman and zero otherwise, $BoardDiversity_{i,t-1}$ is a set of measures that capture the diversity of the board with regard to gender, nationality and age, while $ControlVariables_{i,t-1}$ contains a set of board-, firm- and director-level controls described in Section 3.5. All independent variables are at time *t-1* indicating that they are lagged with respect to the dependent variable. We also include firm fixed effects and year fixed effects and cluster standard errors at the firm level.

3.3. Dependent Variable

We employ leverage as our main dependent variable for two reasons. First, CFOs have direct oversight and influence over corporate capital structure through their management of corporate financing and risk management. While a CEO has complete control of a firm and has more power to influence many other variables of the firm (such as return on assets and market measures of performance), the CFO role is more limited and a key area of the firm they have significant control over is the firm's debt structure. Second, leverage is a popular measure to examine the degree of riskiness of corporate financing choices. Given a negative shock to a firm's underlying business conditions, the higher the leverage, the greater the negative impact of the shock on the firm's net profitability. Leverage is defined as the ratio of current and long-term

debt to total assets (book value) at the end of a fiscal year. We rely on book leverage for the main part of our analysis as survey-based evidence suggests that UK CFOs mainly rely on book values when measuring debt ratios (see Beattie et al., 2006). But in robustness checks, we show that our results are robust to using market-based leverage ratios as dependent variable.

3.4. Main Independent Variables

Our main variable of interest is the dummy variable for a female CFO which indicates whether the firm has a female CFO. Given the vast literature on the importance of board diversity for corporate policies and decision-making processes, we further aim to test the effect of more diverse boards on firms' leverage. In particular, we are interested in the diversity of the board along three dimensions: gender diversity, nationality diversity and age diversity. The diversity of a board is likely to be affected by a variety of firm characteristics and in addition is likely not to be independent of the gender, nationality and age characteristics of the CFO, our main variable of interest. This is because in most UK firms the CFO sits on the board of directors.[7] To adjust our board diversity measure for firm and especially CFO specific effects, we follow the methodology of Fang et al. (2018) who employ a similar approach to generate measures for the diversity of CEOs' social networks. In order to control for the effect of CFOs' gender, nationality and age on board diversity, we first estimate the following regressions for each of the three measures of board diversity (gender diversity, nationality diversity, age diversity). We also control for firm size as it can affect the composition of the board.

$$Gender\ Diversity_{i,t} = f(\ AgeCFO_{i,t}, FemaleCFO_{i,t}, BritishCFO_{i,t}, Firmsize_{i,t}, FirmFE, YearFE) \quad (2a)$$

$$Nationality\ Diversity_{i,t} = f(\ AgeCFO_{i,t}, FemaleCFO_{i,t}, BritishCFO_{i,t}, Firmsize_{i,t}, FirmFE, YearFE) \quad (2b)$$

$$Age\ Diversity_{i,t} = f(\ AgeCFO_{i,t}, FemaleCFO_{it}, BritishCFO_{it}, Firmsize_{i,t}, FirmFE, YearFE) \quad (2c)$$

[7] As noted by Florackis and Sainani (2018: 169), "CFOs, in the UK, also commonly referred to as finance directors, are perceived to play a more important strategic role as illustrated by the fact that they sit on the board of directors in the vast majority of firms (above 85% in our sample). This particularly high percentage is in contrast to the US experience, where only about 11% of CFOs hold board positions."

where $Gender\ Diversity$ is defined as the number of female directors divided by the total number of directors on each board for a given year; $Nationality\ Diversity$ captures the number of non-British CFOs divided by the total number of directors on each board for a given year; and $Age\ Diversity$ represents the natural logarithm of the standard deviation of the age of directors on each board for a given year. i indexes the firm and t indexes the year of the observation. $AgeCFO$ is the natural logarithm of the age of a CFO. $FemaleCFO$ is a dummy variable, which equals one if the CFO is female, and zero otherwise. $BritishCFO$ is a dummy variable, which equals one if the CFO is British, and zero otherwise. $Firmsize$ denotes the natural logarithm of the firm's total assets. Firm dummies and year dummies capture firm and year fixed effects, respectively (Fang et al., 2018).

In our benchmark regression expressed in equation (1), we use the residuals from the above regressions as the adjusted measures of boards' $Gender\ Diversity$, $Nationality\ Diversity$ and $Age\ Diversity$. Using these adjusted measures ensures that we capture the board's diversity in excess of the CFO's characteristics and allows an independent identification of board-specific effects and CFO-specific effects on leverage ratios.

While the above measures capture the diversity along three different dimensions, we also want to capture a board's overall diversity as one board might have directors with a diverse set of nationalities but not have any women on the board or be composed of relatively senior directors in terms of their age distribution. Hence, we follow Bernile et al. (2018) to create an aggregate board diversity measure which captures the overall diversity of the board.

$$Aggregate\ Board\ Diversity = STDZ(PCT\_Female) + STDZ(PCT\_NonBritish) + STDZ(STDEV\_Age) \quad (3)$$

where PCT_Female is the percentage of female directors on each board per year, $PCT\_NonBritish$ is the percentage of non-British directors on each board per year and $STDEV\_Age$ is the natural logarithm of the standard deviation of directors' age on each board per year. $STDZ$ stands for the normalisation of each variable by its mean and standard deviation. Hence, $Aggregate\ Board\ Diversity$ represents an equally weighted measure of the normalised individual diversity measures. Note that we do not use the residual diversity scores

generated by equations (2a) to (2c) in the computation of the aggregate measure. This shall ensure that our results are not driven by our adjustment of diversity scores.

3.5. Control Variables

In addition to these main explanatory variables, we include a variety of board, firm and director characteristics. Regarding board characteristics, we control for the number of directors, board independence, and CEO duality. In terms of firm characteristics, we include market-to-book ratio, capital expenditure, total assets, firm age, Tobin's Q, and industry-adjusted RoA. With regards to director characteristics, we control for whether the CFO is British, the CFO tenure, CFO age, CFO network size and the total compensation of the CFO. Table 3 reports the summary statistics of these control variables, while the appendix provides a detailed explanation of how each variable is calculated. We find that the average number of female directors on the board is 7.8%, while 15.9% of directors are non-British. We also find that 92.5% of our CFOs are British while 5.4% of our CFOs are female. In the appendix, we report the correlation matrix of our dependent and independent variables.

4. Empirical Results

4.1. Female CFOs and Corporate Leverage

In Table 4, we examine female CFOs' impact on the leverage of the firm. In column (1), we run the baseline regression using the dummy variable for a female CFO along with a number of control variables, while in columns (2) to (6) we include our four different measures of board diversity, namely gender diversity, nationality diversity, age diversity and aggregate board diversity. We find that across all our regression specifications female CFOs significantly reduce the leverage of a firm. Specifically, results across all six models estimated suggest that on average, the leverage of firms run by female CFOs is 0.0420 lower than the leverage of firms run by male CFOs. Considering that the average leverage in our sample is 0.2677, our findings indicate that female CFOs have an economically significant effect on corporate leverage by lowering leverage by more than 15.7% (=-0.0420/0.2677), on average, compared to male CFOs. Our evidence is in line with hypothesis *H1* and supports findings in the literature that women tend to take on fewer risks such as leverage than their male counterparts. Interestingly, looking at the coefficient estimates on the board diversity measures we do not find a direct effect between corporate leverage and the degree of the diversity of the board along the dimensions of gender, nationality and age, suggesting that the CFO gender effect on leverage is different to potential direct effects

of board diversity on leverage choices. Similarly, with the exception of CFO compensation, none of the other CFO personal characteristic show a statistically significant link to firm's leverage other than CFO gender.

4.2. Is it the CFO or CEO gender?

Our findings so far suggest that female CFOs significantly lower the leverage in the firms they manage. However, in the literature, there is also evidence that female CEOs are associated with lower corporate leverage (Faccio et al., 2016). To alleviate the concern that the decrease in leverage may be the effect of the gender of the CEO rather than the CFO, Table 5 reports the results of regressions where we include an extra control variable for the presence of a female CEO, which equals one if the CEO is female, and zero otherwise. We find that, highly consistent with our baseline regression in Table 4, the average coefficient on the female CFO dummy variable is -0.0421, even when controlling for CEO gender, and it remains statistically significant at the 5% level across all six specifications of our regression model. The economic significance of the female CFO gender effect on corporate leverage further remains comparable at 15.7% (=coefficient on Female CFO Dummy / the average leverage =-0.0421/0.2677), on average, compared to male CFOs. We also find that although the female CEO dummy variable generates a positive coefficient, it is very small in magnitude and statistically insignificant. Hence, the findings presented in Table 5 are highly consistent with the baseline specification in Table 4 and suggest that the gender of the CFO is associated with corporate leverage, and that it is not female CEOs who lower corporate leverage in UK corporations.[8] Our findings add to the existing literature which suggests that the gender of the CEO determines firms' leverage. For instance, Faccio et al. (2016) find that across a sample of 18 countries, firms run by female CEOs take on less debt while for our sample of UK firms, we show that it is in fact the female CFO that significantly reduces the leverage of a firm, not the female CEO. However, more than 95% of the firm-year observations analysed in Faccio et al. (2016) relate to private companies while our sample is restricted to publicly listed firms only. It can be assumed that in private firms the CEO has direct oversight and responsibility for a broader set of corporate policies, among them being corporate capital structure, while in larger, more complex publicly listed firms these responsibilities are more divided among the executive team and CFOs are expected to have greater oversight and responsibility over firms' capital structure. Hence, our results contribute to

[8] We also examined the situation when the CFO and CEO are both female but the sample of firms with both female CEOs and female CFOs is too small to allow meaningful statistical inferences.

Faccio et al. (2016)'s findings by highlighting the importance of accounting for the corporate setting when analysing the effect of gender effects on corporate policies.

4.3. Female CFOs and Board Diversity

The previous section reported that firms with female CFOs are associated with a lower leverage than firms with male CFOs. However, the relationship between the CFO and the board may play an important role regarding the managerial discretion and ability of the CFO to influence the corporate leverage. While previous research has found that diverse boards have a positive effect on the persistence of corporate policies including firm leverage and are associated with lower risk-taking (e.g. Bernile et al., 2018), to the best of our knowledge no previous study has investigated whether the degree of board diversity might have a moderating or enhancing effect on executives' impact on corporate policies. In hypothesis *H2*, we argue that only in more diverse boards do female CFOs have a significant negative impact on firm leverage. To examine this hypothesis, we estimate the effect of female CFOs on firm leverage under different levels of board diversity. Specifically, we initially split our sample into ten deciles based on board gender diversity, board nationality diversity, board age diversity and board aggregate diversity, and then aggregate the three lowest deciles, the middle four deciles and the highest three deciles, denoting the low, middle and high levels of diversity.

Table 6 presents our findings and shows that female CFOs are associated with lower leverage only in firms with higher levels of board diversity across all four diversity measures. Looking at the first three columns of Panel A, our results demonstrate that female CFOs only significantly reduce leverage in firms with middle and high gender diverse boards. This indicates that female CFOs have the greatest influence on the leverage of the firm when there is a high level of female representation on the board. In addition, while the coefficient estimate on the female CFO dummy is negative for all levels of board nationality diversity, we only find a significant negative effect of female CFOs on leverage in boards that are highly diverse in the nationalities of their board members. Panel B reports the results for different levels of age diversity and different levels of board aggregate diversity and shows that female CFOs reduce leverage for every degree of board age diversity, although only significantly when the board age diversity is in the middle deciles. The last three columns of Panel B report our findings when we divide the sample based on the aggregate diversity measure. These findings suggest that female CFOs significantly reduce leverage in high aggregate diverse boards indicating that CFOs require quite diverse boards in order to have a significant influence on firms' leverage.

The economic magnitude of the coefficient estimates for the statistically significant female CFO dummy variable ranges from -0.0476 to -0.0756 across all four diversity measures, compared to about -0.0420 as shown in the baseline specifications in Table 4. Considering that the average corporate leverage for middle and high board gender diversity, high board nationality diversity, middle board age diversity, and high board aggregate diversity ranges from 24.72% to 28.52%, these estimates imply that female CFOs could significantly reduce leverage by 19.26% (=-0.0476/0.2472) in firms in the middle board age diversity to 29.20% (=-0.0756/0.2589) in firms in the high board aggregate diversity, on average, compared to the leverage of a firm run by a male CFO.

Hence, the diversity of the board in which female CFOs operate has a statistically and economically significant effect on their propensity to lower corporate leverage. When a CFO is faced with a non-diverse board, female CFOs' impact on leverage does not appear to significantly differ from that of their male peers, suggesting that they might be more restricted in exercising their leverage preferences. These findings are in line with hypothesis *H2* and as such contribute to the literature that analyses the importance of board diversity for affecting corporate strategic change (e.g. Haynes and Hillman, 2010, Liu et al., 2014) by showing that more diverse boards are instrumental in boosting female CFOs' managerial discretion to initiate changes to corporate risk-taking via altering firms' capital structure.

4.4. Female CFOs and Powerful CEOs

A potential concern with our interpretation of the evidence that female CFOs lower leverage is that there might be several firms in our sample in which the decision-making power is centralized in the hands of powerful CEOs who make most of the major decisions. There is a vast literature studying the impact of powerful CEOs on firm performance where Adams et al. (2005) show that more powerful CEOs are less likely to compromise with other top executives, resulting in more extreme decisions. Haynes and Hillman's (2010) findings suggest that powerful CEOs moderate the effect of board diversity on strategic decision making, but less is known about the indirect effect of CEO power on other managers' discretion to affect corporate policies. Based on the CEO dominance hypothesis (*H3*), one would expect that female CFOs are less able to adopt corporate policies according to their risk preferences in firms whose CEOs are more powerful, resulting in the negative effect of a female CFO on leverage to be less pronounced.

We use three different measures of CEO power from the literature to determine the impact of female CFOs when the CEO is powerful. Our first measure of CEO power follows Adams et al. (2005) and is a dummy variable that measures the concentration of titles in the hands of the CEO. This variable is equal to one if the CEO accumulates both the titles of CEO and chairman, since the chairman often has an important role in the strategic decision-making.[9] Our second measure of CEO power follows Morse et al. (2011) and captures the weakness of the board and the boards' inability to counter the CEO. All else equal, relatively more insiders, whose incentives are aligned with CEO incentives, should be associated with more power for the CEO (Hermalin and Weisbach, 1988), whereas independent directors are expected to increase the degree of scrutiny and monitoring towards the CEO and hence limit CEO power. Therefore, we calculate the percentage of insiders and split our sample into deciles representing low, middle and high levels of insiders on the board. Our final measure of CEO power is CEO pay slice, defined as the ratio of the CEO's total annual compensation to the aggregate of the board of directors' compensations (Bebchuk et al., 2011). We split our sample into deciles based on the ratio of CEO pay to aggregate directors' pay, since higher paid CEOs, relative to the rest of executives, are assumed to be more powerful.

Table 7 reports our results and shows that the power of the CEO has a significant impact on the ability of female CFOs to influence corporate leverage. When the CEO is also the chairman, the gender of the CFO has no significant influence on leverage but when the CEO is not the chairman, we find evidence that female CFOs significantly reduce leverage in the firm by 0.0467, which translates to an economically significant reduction in leverage by about 16.96% (=-0.0467/0.2754), on average. Our set of regressions using the second measure of CEO power shows that female CFOs only significantly lower corporate leverage when there is a low percentage of insiders in the firm, while we also report that female CFOs only significantly reduce leverage when the CEO pay slice is relatively low. Specifically, female CFOs are found to lower leverage by about 38.50% (=-0.0961/0.2496) in firms with fewer insiders on the board and by 40.06% (=-0.0828/0.2067) in firms with a lower CEO pay slice, compared to the leverage of a firm run by a male CFO.

[9] The chairman is frequently an ex-CEO, who retains the title of chairman during a probationary "training" period for the new CEO. This suggests that upon becoming chairman, the former CEO still participates in decision-making.

Overall, these results suggest that female CFOs significantly reduce the leverage in a firm only when the CEO is not classified as a powerful CEO, providing strong evidence in support of hypothesis *H3* and highlighting the important relationship between the CEO and the other executive directors. These findings have important implications for policy makers that seek to promote gender diversity and promote women in leadership positions. Our results suggest that, in order to increase the influence of women in corporate leadership positions, companies and policy makers not only need to look at the gender of the executives but also have to account for the diversity of the board and the power of the CEO in order to boost women's managerial discretion and to enable female leaders to affect corporate policies.

4.5. Internally versus Externally Promoted Female CFOs

In line with our findings of the previous sections, we now test whether there is a difference between internally and externally appointed female CFOs in their propensity to affect corporate leverage. Internally appointed CFOs may be more aligned to the current structures and policies of the firm and less likely to make dramatic changes to the firm. Furthermore, internally appointed CFOs might be more closely tied to the current CEO and hence less likely to deviate from existing corporate policies. Externally appointed CFOs however may have less allegiances to other top executives at the firm, allowing them greater managerial discretion to change firm leverage, and may not be as familiar with the policies of the firm which could lead to a deviation of their decisions from the existing trend of corporate policies. To test whether the effect of CFO gender on corporate leverage depends on the hiring status of the CFO, in Table 8 we spilt our data into internally and externally appointed CFOs. We define internally appointed CFOs as individuals who have been at the firm at least one full year prior to their appointment.[10] We find that across all specifications of board diversity, externally appointed female CFOs significantly reduce the leverage of the firm whereas the gender of internally appointed CFOs does not affect corporate leverage. On average across our six specification, externally appointed female CFOs lower leverage by more than 24.39% (=-0.0654/0.2682), compared to the leverage of a firm run by an externally appointed male CFO. This suggests that internally appointed female CFOs may be more constrained in their managerial discretion compared to externally appointed female CFOs. This finding is in line with our expectation under *H4* and also supports our results on CEO power suggesting that only if CFOs are sufficiently 'independent' from the CEO and

[10] Our results are robust to defining internally appointed CFOs as those with over 2- and 3-years' experience at the firm.

management and have sufficient managerial discretion, will female CFOs implement more conservative leverage policies that differ from their male counterparts.

5. Robustness Checks

5.1. Endogeneity Checks

While the regression results presented in the previous sections suggest that female CFOs take on less debt than their male counterparts, it is difficult to identify statistically the causal effect of female CFOs on firm leverage. An ideal experimental design would require the random assignment of firms into treatment and control groups, which is rare and impossible in this context. The above estimations assume that the presence of a female CFO is exogenous. However, it is likely to be endogenous and depends on both the firm's demand for female CFOs and the willingness of the candidate to join the firm. In the following sections, we propose five ways to account for and mitigate this endogeneity: (1) Difference-in-Difference analysis; (2) Firm Fixed Effects regressions for Transition firms; (3) Multiple, high-dimensional Fixed Effects regressions; (4) Sub-sample analyses based on a semi-exogenous shock; and (5) Heckman two-stage method. While none of these tests can irrefutably rule out the endogenous relationship between the presence of female CFOs and firms' leverage choices, taken together they provide strong suggestive evidence that the identified relationship between CFO gender and firm leverage is causal in nature. In this section, we also examine the effect of female CFOs on market leverage as well as the change in leverage.[11]

5.1.1 Difference-in-Difference Analysis

Our first robustness test involves a difference-in-difference analysis to understand what happens to the leverage of a firm after a male CFO has been replaced by a female CFO, relative to a male-to-male CFO succession. To ensure that the two groups of transition firms are relatively comparable before the appointment, we use propensity score matching to match firms that transition from a male to a female CFO (Treatment group) to comparable firms that experience a male-to-male CFO transition (Control group). The purpose of propensity score matching is to find a set of firms appointing female CFOs that is as statistically alike as possible to a set of firms appointing male CFOs, using a matching algorithm with observable features (Heckman et al., 1998; Imbens, 2000). This then enables the average treatment effect of the treated female CFO

[11] In our robustness section, we report the coefficients of interest and do not report all the coefficients for all of the control variables. However the full tables are available upon request from the corresponding author.

group to be determined. In other words, after matching, differences in leverage could be attributed to whether the CFO is female or male, rather than to differences in the other covariates. For the matching, we use all firm characteristics and independently add the four board diversity measures as additional matching variables as well as include the full set of control variables as previously employed in this study.

Table 9 shows the results for the four tests, each one using a different board diversity score as additional matching variable. In the pre-transition period, there is no statistically significant difference in leverage between the treatment and control firms, implying they use similar levels of leverage. By contrast, in the post-transition period, the leverage of the treatment group is at least 3.6 percentage points lower than in the comparison sample of control firms. The difference between the two groups is statistically significant at the 1% significance levels. Additionally, the difference between the treatment and control group in the decline in average leverage from pre-to-post-CFO turnover is at least 2.3 percentage points, which is beyond what is shown during the same period among otherwise comparable firms without CFO transitions. The difference is also statistically significant at the conventional significance levels. The findings imply that a transition from a male CFO to a female CFO is associated with a significant decline in leverage compared to a transition from a male CFO to another male CFO.

5.1.2. Transition Firm Regressions

A limitation of the propensity score matching results is that the documented correlation between CFO gender and corporate leverage may simply reflect unobservable characteristics that influence both CFO gender choice and corporate leverage choices. The omission of these controls might lead us to incorrectly attribute the differences in leverage to differences in CFO gender. In this section, we exploit the panel dimension of our dataset to control for time-invariant firm-specific characteristics that may be correlated with omitted explanatory variables. For this purpose, we run fixed effect (panel) regressions for transition firms with firm fixed effects. The inclusion of firm fixed effects in the regression models removes any purely cross-sectional correlation between gender and leverage, reducing the risk of spurious correlation. In particular, in our firm fixed effects regressions, we compare CFOs of different genders operating the same firm.

In this analysis, we include only those firms that experience a change from a male CFO to a female CFO, or vice versa, as only those firms contribute to the identification. The results from

Table 10 indicate that firms run by female CFOs use significantly less leverage than firms run by male CFOs. The coefficient on the female CFO dummy indicates that after controlling for many factors, a firm's leverage is, across our six specifications, on average 0.0494 lower when a firm is run by a female CFO compared to when the same firm is run by a male CFO.

5.1.3. High-Dimensional Fixed Effects

While our previous analysis controls for unobserved firm effects, leverage might also be subject to unobservable within-group heterogeneity. For instance, leverage and gender representation among firms might be subject to time-varying heterogeneity across industries, such as industry-wide shocks to credit supply. We follow Gormley and Matsa (2014) and employ multiple high-dimensional fixed effects in our benchmark regression. In particular, we add both firm fixed effects and industry-by-year fixed effects to equation (1) (see Li and Zeng, 2019, for a similar application of multiple, high-dimensional fixed effects).

The results are reported in Table 11. While the inclusion of high-dimensional fixed effects has slightly decreased the statistical significance of the female CFO effect on leverage, the coefficient estimates on the CFO gender dummy are still significant at the 10% level and are of similar economic magnitude as our benchmark results presented in Table 4. Hence, these additional tests provide further support that female CFOs reduce leverage in the firms they manage.

5.1.4. Sub-period Analysis

The UK corporate governance landscape has seen significant changes over our sample period. Awareness of gender equality issues and public pressure on companies to achieve greater gender balance in their leadership teams has considerably increased over time. While other countries have introduced mandatory gender quotas for boards (e.g. Norway, Belgium, France, Germany, Iceland, India, Israel, Italy, Spain), the UK does not have a legally binding quota. The advantage of legally binding quotas is that their introduction can be regarded as an exogenous shock to firms that instantly increases the female representation in corporate boards (assuming firms follow the law), which mitigates the reverse causality problem of linking gender representation to corporate outcomes.

While we do not have such an exogenous legislative shock in the UK context, the publication of the 'Women on Boards' report by Lord Davies in February 2011 can nevertheless be considered as a significant event for the UK corporate governance and gender equality landscape that

strongly increased the pressure on UK publicly listed companies to appoint more women to their board.[12] Lord Davies had been appointed by the UK government to undertake the review which comprised an examination of the current gender representation among FTSE350 corporate boards. The review concluded with recommendations to increase female representation among FTSE100 boards to a minimum of 25% by 2015 and 30% by 2020 through the appointment of 1/3 women and 2/3 men to open board positions. The consultation for the report began in September 2010, the initial report was published in February 2011 and it was followed up by bi-annual progress reports.

While the recommendations were not legally binding, they did have a significant effect on the number of women on UK corporate boards and on the proportion of female CFOs who sit on the board in most UK public companies, as can be seen by the strong growth of the percentage of women among these two groups in Figure 1.[13] Hence, we argue that the introduction of the Davies report can be considered as a semi-exogenous shock that led to a significant increase in female directors and represents a meaningful point in time to divide our sample into two sub-samples: 1999-2011 as the period leading up to the Davies report; and 2012-2017 as the post-Davies report period. Table 12 presents the results of running our baseline regression for these two sub-periods. It is clear when comparing the results in Panel A (1999-2011) and Panel B (2012-2017) that the significant negative effect of female CFOs on corporate leverage is only present in the post-Davies report period when the number, and arguably the influence and managerial discretion, of female CFOs in UK public companies had strongly risen. Specifically, the average coefficients on the female CFO dummy across our six specifications show that female CFOs lower leverage by 19.85% (=-0.0518/0.2609) compared to the leverage of a firm run by a male CFO in the subsample from 2012 to 2017. While the results should be interpreted with caution due to the non-legally binding nature of the recommendations, we nevertheless observe that the findings are strongly in line with our benchmark findings and the underlying assumption that female CFOs only adjust corporate leverage based on their preferences if their influence is sufficient and they are not regarded as tokens.

5.1.5. Heckman Two-Stage Method

Although our analysis so far has dealt with a number of endogeneity issues, there is the concern that firms wanting to lower leverage hire female CFOs and therefore the hiring of female CFOs

[12] The report can be accessed via: https://www.gov.uk/government/publications/women-on-boards-review
[13] See also the progress reports by Lord Davies that examine the increase in gender representation on UK corporate boards: https://www.gov.uk/government/publications/women-on-boards-5-year-summary-davies-review

may not be a random choice of firms, which can cause self-selection bias. Hence, we use the Heckman two-stage method to mitigate against this endogeneity concern.[14] In the first stage, we construct a Probit model to estimate the probability of firms hiring a female CFO, where we consider factors such as the number of directors of a firm, the industry adjusted return-on-assets, the total assets, if the CEO is the chairman, the CFO tenure, the CFO age, the CFO network size and the CFO total compensation as predictors of hiring a female CFO. Since the Heckman model requires an exogenous variable, we use the mean percentage of female directors per year, excluding the firm concerned, to satisfy this requirement. The first stage regression generates the inverse Mills ratio (IMR), and we include the lagged IMR in the second stage regression to control for self-selection bias. We run this model in Table 13 where we report the first stage Probit model and also the second stage regression which employs the same control variables as in our original specification. Our findings are similar to our baseline results suggesting that they are unlikely to be driven by the potential self-selection bias in female CFO appointments.

5.2. Market Leverage

Our previous analyses all focused on explaining book leverage ratios as the dependent variable. The rationale behind this choice is that, firstly, survey evidence of UK CFOs suggests that the vast majority (83%) of CFOs of publicly listed companies that measure debt ratios rely on book values (Beattie et al., 2006)[15], and secondly, market values can be highly volatile and can reflect developments that are outside the CFO's control. As our main aim is to use corporate leverage measures that reflect managers' active choices and preferences, book leverage seems the more appropriate measure. However, market leverage ratios are widely used in the corporate finance literature and hence we want to ensure that our results are not driven by the choice of leverage measure.

Table 14 reports results of our baseline regression if we replace book leverage with market leverage where market leverage is defined as the sum of long-term and short-term debt divided by the sum of short-term and long-term debt and the market value of equity.[16] The statistical and economic significance of the coefficient estimate of the female CFO dummy is similar to our baseline results in Table 4. These findings suggest that our results are robust to alternative specifications of our dependent variable.

[14] We thank an anonymous referee for suggesting this additional analysis.
[15] The CFOs of the remaining companies report to use market values (12%) or both book and market values (5%) (Beattie et al., 2006).
[16] In unreported results we used debt-equity ratios as the dependent variable and found qualitatively similar findings.

5.3. Change in Leverage

So far, we have studied the effect of female CFOs on a firm's leverage ratio and find that firms with female CFOs have significantly lower leverage than firms with a male CFO. We chose the leverage ratio as our main dependent variable as we are interested in comparing the level of indebtedness between companies managed by female or male managers which allows us to test whether firms with a female CFO take on less debt. But another question that could be posed is what impact does the gender of the CFO have on the change in leverage of a firm - or in other words, do firms with female CFOs lower the leverage more strongly than firms run by male CFOs?[17] To test this, we re-estimate our main model and use the change of leverage as the dependent variable rather than the level of leverage. As one of the determining factors in the extent of leverage adjustments is the level of leverage at the outset, we include the lagged leverage ratio in our set of control variables. The results, reported in Table 15, support the findings of our previous analysis and show that firms with female CFOs have a significantly negative impact on change in leverage compared to firms with male CFOs. Specifically, on average across our six specifications, the coefficient on the female CFO dummy is -0.0256 and statistically significant at 5% significance level indicating that female CFOs significantly effect the change in leverage of firms compared to male CFOs.

6. Summary and Conclusions

In recent years, the role of female CEOs and female board representation has received great attention by public policy makers, the media and academia alike. However, less focus has been put on the impact of women in other key corporate financial decision-making roles, such as female CFOs. On the other hand, there is a vast literature that looks at gender differences in financial decision-making and risk-taking indicating that women in general tend to take fewer risks than men. In this study, we contribute to both strands of the literature by analysing the impact of female CFOs on corporate leverage for a sample of UK firms. We are particularly interested under which decision-making environment female CFOs are able to affect corporate leverage and how the diversity of the board, the power of the CEO and CFOs' hiring status affect female CFOs' managerial discretion and leeway to influence corporate leverage choices. Based on a sample of UK public companies, we find that firms with female CFOs take on considerably lower leverage than firms run by male CFOs. Moreover, our results highlight the important role of the decision-making environment for female CFOs' managerial discretion to

[17] We thank one of the anonymous referees for suggesting this analysis.

affect corporate leverage. We show that only in firms with diverse boards, as measured by boards' gender diversity, nationality diversity and age diversity, as well as in firms that are not run by powerful CEOs do female CFOs have a significant effect on corporate leverage. In addition, we find that externally appointed female CFOs are more likely to lower leverage in line with them being more independent from other executives and having greater leeway in making changes to existing policies. Our results provide novel contributions to the literature on board diversity by stressing the important role of boards in providing an inclusive decision-making environment for women in senior executive roles, as well as to the literature on powerful CEOs by presenting direct evidence of how powerful CEOs restrict the managerial discretion of female CFOs to affect corporate policies. By deploying managerial discretion theory in the context of female CFOs' impact on corporate leverage choices we also respond to calls for research into the conditions and critical factors under which gender differences in the highest echelons of the corporate hierarchy are observed (Meyers-Levy and Loken, 2015).

Our findings have several important implications. Firstly, our study suggests that when assessing the role of gender in corporate financial decision-making, analyses need to go beyond the study of CEO gender and the gender composition of the board and instead also consider other main executive positions with key influence over corporate policies, such as the CFO, especially when examining corporate financial policies. Neglecting the role and importance of female CFOs can provide a skewed picture when evaluating the effectiveness of gender diversity policies and the role of women in finance.

Secondly, our findings of the discretion-enhancing effect of board diversity and the moderating effect of CEO power on female CFOs' ability to impact corporate leverage offer new insights into the indirect benefits of promoting diverse boards as well as potential consequences of excessive CEO power. Our study adds a unique contribution to the literature on board diversity by highlighting boards' important role in establishing a decision-making environment that supports women executives in affecting corporate policies. While previous studies have shown that more (gender-) diverse boards have a positive effect on employee-friendly policies (Matsa and Miller, 2013), and lead to greater gender diversity below board level (Bilimoria, 2006; Matsa and Miller, 2011),[18] we find that board diversity is also crucial for creating an environment that enables other female executives to affect corporate policies.

[18] See Kirsch (2018) for a review of the effect of board gender diversity on different organisational outcomes.

Thirdly, our findings have practical implications for corporate boards and policy makers who aim to strengthen the role of female leaders in corporations. We show that female CFOs – as part of a minority group in corporate leadership positions – require an inclusive environment in order to shape corporate policies. While policy makers and corporate boards might face increasing pressures to raise female representation in executive positions (Adams, 2016), our results suggest that merely increasing the number of women in specific roles, e.g. via female quotas, is unlikely to sufficiently improve women's impact on corporate policies, if these measures disregard the broader managerial decision-making environment in which women operate and their relation to other key decision makers, such as the CEO and board. Hence, policy makers and corporate boards should focus on creating an inclusive environment that allows female managers sufficient leeway to influence corporate outcomes.

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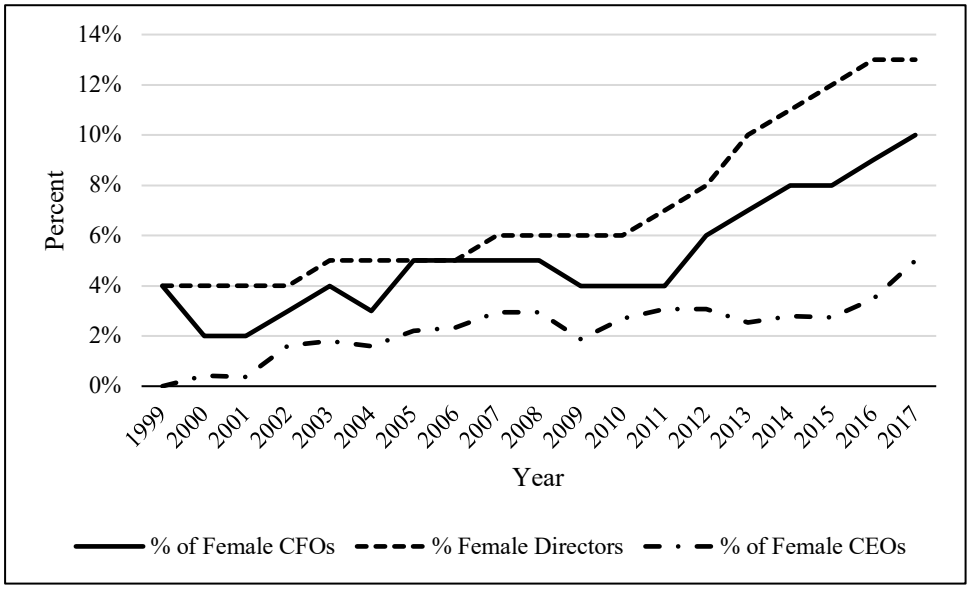
Figures

Figure 1: Gender representation among CFOs, CEOs and directors over time.
This figure presents the percentage of female CFOs and female CEOs across UK publicly listed firms as well as the average percentage of female directors among the boards of UK publicly listed firms over the sample period 1999-2017.



Tables

Table 1: Distribution of Female CFOs.
This table presents the number of female CFOs each year, the fraction of female CFOs, the number of female CEOs, the fraction of female CEOs, the fraction of female directors on the board, the average board size, the percentage of board independence and the number of firms for each year of our sample period.

Year	No. Female CFOs	Fraction of Female CFOs	No. Female CEO	Fraction of Female CEOs	Fraction of Female Directors	Board Size	Board Independence	# of firms
1999	6	0.04	0	0.00	0.04	8.75	0.37	171
2000	5	0.02	1	0.00	0.04	8.24	0.4	232
2001	6	0.02	1	0.00	0.04	8.18	0.41	272
2002	9	0.03	5	0.02	0.04	8.21	0.42	309
2003	14	0.04	6	0.02	0.05	8.05	0.41	332
2004	13	0.03	6	0.02	0.05	7.75	0.41	376
2005	24	0.05	10	0.02	0.05	7.59	0.4	455
2006	24	0.05	12	0.02	0.05	7.36	0.4	517
2007	29	0.05	16	0.03	0.06	7.26	0.4	543
2008	26	0.05	15	0.03	0.06	7.36	0.42	509
2009	18	0.04	9	0.02	0.06	7.2	0.42	481
2010	23	0.04	14	0.03	0.06	7.18	0.42	521
2011	22	0.04	16	0.03	0.07	7.23	0.42	519
2012	29	0.06	15	0.03	0.08	7.25	0.43	488
2013	32	0.07	12	0.03	0.1	7.43	0.46	475
2014	36	0.08	13	0.03	0.11	7.41	0.48	466
2015	37	0.08	13	0.03	0.12	7.38	0.48	474
2016	42	0.09	16	0.03	0.13	7.38	0.49	459
2017	30	0.1	15	0.05	0.13	7.07	0.61	300
Average	22.37	0.05	10.26	0.02	0.07	7.59	0.44	415.74

Table 2: Female CFOs and Leverage by Industry.
This table presents the number of female CFOs in each industry, the fractions of female CFOs and female directors, the average board size, the percentage of board independence, the average leverage and the number of firms by industry.

Sector	No. Female CFOs	Fraction of Female CFOs	Fraction of Female Directors	Board Size	Board Independence	Leverage	# of firms
Basic Materials	21	0.04	0.04	7.78	0.46	0.21	563
Consumer Goods	55	0.07	0.1	7.92	0.46	0.28	839
Consumer Services	92	0.06	0.1	8.04	0.45	0.36	1,641
Health Care	18	0.03	0.08	7.28	0.41	0.20	559
Industrials	144	0.05	0.06	7.2	0.44	0.31	2,671
Oil and Gas	22	0.04	0.05	7.83	0.41	0.18	539
Technology	69	0.07	0.05	6.52	0.4	0.13	941
Telecommunications	4	0.03	0.09	8.99	0.49	0.36	146
Average	53.13	0.05	0.07	7.7	0.44	0.27	987.38

Table 3: Summary Statistics.
This table reports the summary statistics of the variables employed in this study.

Variable	Obs	Mean	Std. Dev	25th Percentile	50th Percentile	75th Percentile
Board characteristics						
% female directors	7,899	0.0783	0.1031	0.0000	0.0000	0.1429
% non-British directors	7,899	0.1585	0.2055	0.0000	0.1000	0.2500
Ln(SD of board age)	7,899	2.0583	0.3127	1.8770	2.0721	2.2699
Board Gender Diversity	7,899	0.0000	0.0542	-0.0314	-0.0033	0.0277
Board Nationality Diversity	7,899	0.0000	0.0750	-0.0329	-0.0044	0.0301
Board Age Diversity	7,899	0.0000	0.1813	-0.0897	0.0118	0.1060
Board Aggregate Diversity	7,899	0.0000	1.6869	-1.1190	-0.1380	1.0626
Ln(number of directors)	7,899	1.9679	0.3017	1.7918	1.9459	2.1972
Board independence	7,899	0.4341	0.2080	0.3333	0.5000	0.5833
CEO is Chairman dummy	7,899	0.2115	0.4084	0.0000	0.0000	0.0000
Firm characteristics						
Leverage	7,899	0.2677	0.2322	0.0386	0.2421	0.4262
Ln(market-to-book)	7,899	0.7079	0.9192	0.1310	0.6831	1.2669
Capital expenditure	7,899	0.0460	0.0521	0.0121	0.0293	0.0593
Ln(total assets)	7,899	12.2436	2.1581	10.7699	12.1220	13.6882
Ln(firm age)	7,899	2.5177	1.0974	1.8845	2.6741	3.5091
Tobin's *q*	7,899	1.8540	1.4456	1.0690	1.4214	2.0769
Industry-adjusted ROA	7,899	0.3152	0.6396	0.0586	0.1516	0.4292
CFO characteristics						
CFO Female Dummy	7,899	0.0538	0.2256	0.0000	0.0000	0.0000
CFO British Dummy	7,899	0.9253	0.2629	1.0000	1.0000	1.0000
Ln(CFO tenure)	7,899	0.9519	1.1344	0.2624	1.0647	1.7918
Ln(CFO age)	7,899	3.8582	0.1435	3.7612	3.8712	3.9512
Ln(CFO network size)	7,899	6.4088	1.7193	5.2149	6.8533	7.6797
Ln(CFO total compensation)	7,899	5.9093	1.1491	5.1417	5.9054	6.6983

Table 4: Female CFO effect on leverage.

This table presents the regression results for female CFO and leverage for publicly listed firms from 1999 to 2017. Variable definitions are provided in the appendix. *t*-statistics are reported in parentheses and ***, ** and * indicate significance at the 1%, 5% and 10% level respectively. Standard errors are clustered at firm level.

	(1)	(2)	(3)	(4)	(5)	(6)
CFO Female Dummy$_{t-1}$	-0.0416**	-0.0415**	-0.0418**	-0.0416**	-0.0417**	-0.0443**
	(-2.49)	(-2.50)	(-2.49)	(-2.48)	(-2.50)	(-2.57)
Board Gender Diversity$_{t-1}$		0.0462			0.0445	
		(1.01)			(0.98)	
Board Nationality Diversity$_{t-1}$			0.0178		0.0153	
			(0.46)		(0.40)	
Board Age Diversity$_{t-1}$				-0.00129	-0.000850	
				(-0.09)	(-0.06)	
Board Aggregate Diversity$_{t-1}$						0.00207
						(0.69)
Ln(number of directors)$_{t-1}$	0.0249	0.0243	0.0238	0.0250	0.0235	0.0231
	(1.36)	(1.33)	(1.29)	(1.36)	(1.26)	(1.24)
Board independence$_{t-1}$	0.0357	0.0322	0.0360	0.0356	0.0325	0.0349
	(1.35)	(1.21)	(1.36)	(1.34)	(1.21)	(1.33)
Tobin's Q$_{t-1}$	-0.0145***	-0.0145***	-0.0145***	-0.0145***	-0.0145***	-0.0145***
	(-4.10)	(-4.13)	(-4.13)	(-4.10)	(-4.15)	(-4.12)
Industry-Adj ROA$_{t-1}$	-0.00625**	-0.00621**	-0.00625**	-0.00625**	-0.00622**	-0.00623**
	(-2.19)	(-2.18)	(-2.20)	(-2.19)	(-2.18)	(-2.19)
CEO is Chairman dummy$_{t-1}$	0.00887	0.00913	0.00895	0.00890	0.00922	0.00886
	(0.90)	(0.93)	(0.91)	(0.90)	(0.93)	(0.90)
Ln(market-to-book)$_{t-1}$	0.0491***	0.0492***	0.0492***	0.0491***	0.0493***	0.0491***
	(6.39)	(6.42)	(6.40)	(6.41)	(6.44)	(6.39)
Capital expenditure$_{t-1}$	0.144**	0.143**	0.145**	0.144**	0.144**	0.144**
	(2.09)	(2.07)	(2.10)	(2.09)	(2.08)	(2.09)
Ln(total assets)$_{t-1}$	0.0388***	0.0389***	0.0388***	0.0388***	0.0389***	0.0387***
	(5.11)	(5.14)	(5.13)	(5.11)	(5.15)	(5.11)
Ln(firm age)$_{t-1}$	0.00501	0.00545	0.00530	0.00504	0.00571	0.00520
	(0.53)	(0.58)	(0.56)	(0.54)	(0.61)	(0.55)
CFO British Dummy$_{t-1}$	0.0241	0.0243	0.0239	0.0241	0.0240	0.0260
	(1.15)	(1.16)	(1.14)	(1.15)	(1.15)	(1.22)
Ln(CFO tenure)$_{t-1}$	0.00218	0.00236	0.00215	0.00218	0.00233	0.00222
	(0.70)	(0.76)	(0.70)	(0.71)	(0.75)	(0.72)
Ln(CFO age)$_{t-1}$	-0.0166	-0.0171	-0.0169	-0.0167	-0.0174	-0.0114
	(-0.47)	(-0.49)	(-0.48)	(-0.48)	(-0.50)	(-0.32)
Ln(CFO network size)$_{t-1}$	-0.00101	-0.000905	-0.00109	-0.00101	-0.000982	-0.00100
	(-0.32)	(-0.29)	(-0.35)	(-0.33)	(-0.32)	(-0.32)
Ln(CFO total compensation)$_{t-1}$	-0.0139***	-0.0140***	-0.0138***	-0.0139***	-0.0139***	-0.0139***
	(-3.39)	(-3.41)	(-3.39)	(-3.40)	(-3.40)	(-3.39)
Constant	-0.181	-0.180	-0.178	-0.181	-0.178	-0.197
	(-1.10)	(-1.09)	(-1.08)	(-1.10)	(-1.07)	(-1.19)
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Adj R-square	0.0636	0.0638	0.0635	0.0634	0.0636	0.0636
No. of Observation	6,299	6,299	6,299	6,299	6,299	6,299
No. of Female CFO	329	329	329	329	329	329
Average Leverage	0.2677	0.2677	0.2677	0.2677	0.2677	0.2677

Table 5: Controlling for female CEO effect on leverage.

This table presents the regression results for the effect of female CFO and female CEO on leverage. Variable definitions are provided in the appendix. *t*-statistics are reported in parentheses and ***, ** and * indicate significance at the 1%, 5% and 10% level respectively. Standard errors are clustered at firm level.

	(1)	(2)	(3)	(4)	(5)	(6)
CFO Female Dummy$_{t-1}$	-0.0417**	-0.0416**	-0.0419**	-0.0417**	-0.0417**	-0.0442**
	(-2.49)	(-2.50)	(-2.50)	(-2.49)	(-2.51)	(-2.55)
CEO Female Dummy$_{t-1}$	0.0124	0.00795	0.0130	0.0125	0.00870	0.0104
	(0.50)	(0.31)	(0.52)	(0.50)	(0.34)	(0.41)
Board Gender Diversity$_{t-1}$		0.0438			0.0418	
		(0.93)			(0.89)	
Board Nationality Diversity$_{t-1}$			0.0185		0.0159	
			(0.48)		(0.41)	
Board Age Diversity$_{t-1}$				-0.00145	-0.000966	
				(-0.10)	(-0.07)	
Board Aggregate Diversity$_{t-1}$						0.00195
						(0.65)
Ln(number of directors)$_{t-1}$	0.0249	0.0244	0.0238	0.0251	0.0236	0.0233
	(1.36)	(1.33)	(1.29)	(1.36)	(1.26)	(1.25)
Board independence$_{t-1}$	0.0359	0.0325	0.0362	0.0358	0.0329	0.0351
	(1.36)	(1.22)	(1.37)	(1.35)	(1.22)	(1.34)
Tobin's Q$_{t-1}$	-0.0144***	-0.0145***	-0.0145***	-0.0144***	-0.0145***	-0.0145***
	(-4.09)	(-4.12)	(-4.12)	(-4.09)	(-4.14)	(-4.11)
Industry-Adj ROA$_{t-1}$	-0.00629**	-0.00624**	-0.00630**	-0.00629**	-0.00625**	-0.00627**
	(-2.20)	(-2.19)	(-2.21)	(-2.20)	(-2.19)	(-2.20)
CEO is Chairman dummy$_{t-1}$	0.00892	0.00915	0.00900	0.00896	0.00924	0.00891
	(0.90)	(0.93)	(0.91)	(0.90)	(0.94)	(0.90)
Ln(market-to-book)$_{t-1}$	0.0491***	0.0492***	0.0492***	0.0491***	0.0493***	0.0491***
	(6.39)	(6.41)	(6.40)	(6.40)	(6.43)	(6.38)
Capital expenditure$_{t-1}$	0.144**	0.143**	0.145**	0.144**	0.144**	0.144**
	(2.09)	(2.07)	(2.11)	(2.09)	(2.09)	(2.09)
Ln(total assets)$_{t-1}$	0.0388***	0.0389***	0.0388***	0.0388***	0.0389***	0.0387***
	(5.11)	(5.14)	(5.13)	(5.12)	(5.15)	(5.11)
Ln(firm age)$_{t-1}$	0.00489	0.00535	0.00519	0.00492	0.00562	0.00509
	(0.52)	(0.57)	(0.55)	(0.53)	(0.60)	(0.54)
CFO British Dummy$_{t-1}$	0.0241	0.0242	0.0238	0.0240	0.0239	0.0258
	(1.15)	(1.16)	(1.14)	(1.15)	(1.14)	(1.21)
Ln(CFO tenure)$_{t-1}$	0.00221	0.00237	0.00219	0.00221	0.00235	0.00225
	(0.71)	(0.76)	(0.71)	(0.72)	(0.76)	(0.73)
Ln(CFO age)$_{t-1}$	-0.0169	-0.0172	-0.0172	-0.0169	-0.0175	-0.0119
	(-0.48)	(-0.49)	(-0.49)	(-0.48)	(-0.50)	(-0.33)
Ln(CFO network size)$_{t-1}$	-0.00108	-0.000957	-0.00117	-0.00109	-0.00104	-0.00106
	(-0.35)	(-0.31)	(-0.38)	(-0.35)	(-0.34)	(-0.34)
Ln(CFO total compensation)$_{t-1}$	-0.0139***	-0.0140***	-0.0139***	-0.0139***	-0.0139***	-0.0139***
	(-3.41)	(-3.42)	(-3.40)	(-3.41)	(-3.41)	(-3.41)
Constant	-0.180	-0.179	-0.176	-0.180	-0.176	-0.195
	(-1.09)	(-1.09)	(-1.06)	(-1.09)	(-1.07)	(-1.17)
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Adj R-square	0.0635	0.0637	0.0635	0.0633	0.0635	0.0635
No. of Observation	6,299	6,299	6,299	6,299	6,299	6,299
No. of Female CFOs	329	329	329	329	329	329
Average Leverage	0.2677	0.2677	0.2677	0.2677	0.2677	0.2677

Table 6: Female CFO effect on leverage under different levels of board diversity.

This table presents the regression results for female CFO and leverage under different levels of board gender diversity and board nationality diversity (Panel A) and different levels of board age diversity and board aggregate diversity (Panel B). Variable definitions are provided in the appendix. *t*-statistics are reported in parentheses and ***, ** and * indicate significance at the 1%, 5% and 10% level respectively. Standard errors are clustered at firm level.

Panel A	Board Gender Diversity			Board Nationality Diversity		
	Low	Middle	High	Low	Middle	High
CFO Female Dummy$_{t-1}$	-0.0231	-0.0476*	-0.0547**	-0.00462	-0.0172	-0.0634***
	(-1.05)	(-1.70)	(-2.09)	(-0.15)	(-0.47)	(-2.81)
Ln(number of directors)$_{t-1}$	0.0202	0.0518*	0.0290	0.0264	0.0474*	0.0643*
	(0.73)	(1.73)	(0.95)	(0.88)	(1.67)	(1.76)
Board independence$_{t-1}$	0.0283	0.0488	0.00913	-0.000888	0.116**	0.0488
	(0.59)	(0.99)	(0.19)	(-0.02)	(2.42)	(0.99)
Tobin's Q$_{t-1}$	-0.0104**	-0.00994**	-0.0113**	-0.0140**	-0.0113**	-0.0111
	(-2.01)	(-2.39)	(-1.98)	(-2.24)	(-2.23)	(-1.64)
Industry-Adj ROA$_{t-1}$	-0.00537	-0.00605	0.00133	-0.00164	-0.00911*	-0.00668
	(-1.16)	(-1.24)	(0.29)	(-0.36)	(-1.90)	(-1.42)
CEO is Chairman dummy$_{t-1}$	0.00695	0.0181	0.0182	-0.00623	0.00991	0.0240
	(0.58)	(1.17)	(0.96)	(-0.40)	(0.70)	(1.30)
Ln(market-to-book)$_{t-1}$	0.0241*	0.0523***	0.0289***	0.0477***	0.0461***	0.0552***
	(1.83)	(4.80)	(2.62)	(3.99)	(3.59)	(3.60)
Capital expenditure$_{t-1}$	0.271**	0.0179	0.211**	0.138	0.123	0.147
	(2.13)	(0.20)	(1.97)	(1.01)	(1.28)	(1.20)
Ln(total assets)$_{t-1}$	0.0417***	0.0275**	0.0265**	0.0244	0.0518***	0.0423***
	(3.11)	(2.46)	(2.25)	(1.49)	(4.49)	(2.95)
Ln(firm age)$_{t-1}$	-0.0294**	-0.00274	0.0163	-0.00912	0.00261	0.0222
	(-1.97)	(-0.19)	(1.33)	(-0.44)	(0.16)	(1.28)
CFO British Dummy$_{t-1}$	0.0390	0.0282	0.0409	-0.0338	0.00418	0.0200
	(1.30)	(0.91)	(1.46)	(-1.10)	(0.10)	(0.80)
Ln(CFO tenure)$_{t-1}$	0.000642	0.00796	0.000209	0.0118***	-0.00174	0.00217
	(0.15)	(1.39)	(0.05)	(2.62)	(-0.41)	(0.39)
Ln(CFO age)$_{t-1}$	0.0233	-0.0964	-0.0562	-0.0642	0.0602	-0.178**
	(0.50)	(-1.58)	(-0.82)	(-1.12)	(1.33)	(-2.58)
Ln(CFO network size)$_{t-1}$	-0.000311	-0.00817	-0.00360	0.00142	-0.00136	-0.0127**
	(-0.06)	(-1.49)	(-0.74)	(0.35)	(-0.24)	(-2.07)
Ln(CFO total compensation)$_{t-1}$	-0.0159**	-0.0147**	-0.0194***	-0.0209***	-0.00647	-0.0198***
	(-2.48)	(-2.37)	(-2.89)	(-3.01)	(-1.12)	(-2.77)
Constant	-0.279	0.235	0.124	0.291	-0.713***	0.361
	(-1.07)	(0.86)	(0.39)	(1.08)	(-3.04)	(1.14)
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Adj R-square	0.0525	0.0734	0.0686	0.0744	0.0784	0.0914
No. of Observation	2,019	2,451	1,829	1,972	2,428	1,899
No. of Female CFOs	107	122	100	97	140	92
Average Leverage	0.2863	0.2472	0.2764	0.2946	0.2363	0.2827

Table 6 – *continued*

Panel B	Board Age Diversity			Board Aggregate Diversity		
	Low	Middle	High	Low	Middle	High
CFO Female Dummy$_{t-1}$	-0.0152	-0.0756**	-0.0200	0.0384	-0.0375	-0.0558**
	(-0.78)	(-2.30)	(-0.74)	(1.04)	(-1.51)	(-2.08)
Ln(number of directors)$_{t-1}$	0.0138	0.0390	-0.0225	0.0415	0.0344	0.0484
	(0.53)	(1.47)	(-0.66)	(1.37)	(1.19)	(1.26)
Board independence$_{t-1}$	0.0510	-0.0516	0.0453	0.0437	-0.0152	0.0184
	(0.93)	(-1.27)	(0.97)	(0.79)	(-0.35)	(0.36)
Tobin's Q$_{t-1}$	-0.0108*	-0.00688	-0.0172***	-0.0180***	-0.00545	-0.0143*
	(-1.75)	(-1.52)	(-3.16)	(-3.27)	(-1.46)	(-1.75)
Industry-Adj ROA$_{t-1}$	-0.00977**	-0.00476	-0.00404	-0.00150	-0.00520	-0.00719
	(-2.27)	(-1.05)	(-0.81)	(-0.32)	(-1.06)	(-1.50)
CEO is Chairman dummy$_{t-1}$	0.0169	-0.00422	0.0102	-0.0136	0.0322**	-0.0150
	(1.02)	(-0.24)	(0.59)	(-0.84)	(2.00)	(-0.71)
Ln(market-to-book)$_{t-1}$	0.0298**	0.0233**	0.0678***	0.0614***	0.0276**	0.0533***
	(2.26)	(2.30)	(6.18)	(4.24)	(2.48)	(4.22)
Capital expenditure$_{t-1}$	0.0459	0.197*	-0.0510	0.149	0.0792	0.246*
	(0.50)	(1.87)	(-0.51)	(1.53)	(0.69)	(1.96)
Ln(total assets)$_{t-1}$	0.0539***	0.0147	0.0348**	0.0351***	0.0388***	0.0246*
	(3.45)	(1.29)	(2.26)	(2.62)	(2.77)	(1.92)
Ln(firm age)$_{t-1}$	-0.0109	0.0350***	0.00623	0.0264	-0.00524	0.0185
	(-0.62)	(2.63)	(0.41)	(1.50)	(-0.38)	(1.01)
CFO British Dummy$_{t-1}$	0.0557*	-0.00140	-0.0167	-0.0265	-0.00170	0.0518**
	(1.96)	(-0.04)	(-0.58)	(-0.74)	(-0.03)	(2.39)
Ln(CFO tenure)$_{t-1}$	0.00662	-0.00000825	-0.00182	0.00277	0.00698	-0.00344
	(1.35)	(-0.00)	(-0.38)	(0.50)	(1.48)	(-0.60)
Ln(CFO age)$_{t-1}$	-0.0247	-0.0580	0.0307	0.0149	-0.0439	-0.0547
	(-0.44)	(-1.07)	(0.58)	(0.29)	(-0.79)	(-0.75)
Ln(CFO network size)$_{t-1}$	-0.00446	-0.00116	-0.000733	-0.00175	-0.00261	0.00103
	(-1.00)	(-0.21)	(-0.14)	(-0.37)	(-0.63)	(0.14)
Ln(CFO total compensation)$_{t-1}$	-0.0191***	-0.00873	-0.00758	-0.0163***	-0.0182***	-0.0159**
	(-2.94)	(-1.50)	(-1.08)	(-2.65)	(-2.72)	(-2.22)
Constant	-0.257	0.219	-0.239	-0.270	0.00715	0.00430
	(-0.92)	(0.90)	(-0.83)	(-0.91)	(0.03)	(0.01)
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Adj R-square	0.0604	0.0466	0.0931	0.1058	0.0501	0.0859
No. of Observation	1,909	2,428	1,962	1,946	2,543	1,810
No. of Female CFOs	101	139	89	29	81	219
Average Leverage	0.2758	0.2589	0.2714	0.2589	0.2613	0.2852

Table 7: Female CFO and powerful CEOs.

This table presents the regression results for female CFOs' influence on leverage under different levels of CEO power. Variable definitions are provided in the appendix. *t*-statistics are reported in parentheses and ***, ** and * indicate significance at the 1%, 5% and 10% level respectively. Standard errors are clustered at firm level.

	CEO is Chairman		% of insiders			CEO Pay Slice		
	Yes	No	Low	Middle	High	Low	Middle	High
CFO Female Dummy$_{t-1}$	-0.0233	-0.0467***	-0.0961***	-0.0575*	-0.0107	-0.0828**	-0.0356*	-0.0269
	(-0.50)	(-2.98)	(-2.93)	(-1.87)	(-0.40)	(-2.03)	(-1.68)	(-1.22)
Ln(number of directors)$_{t-1}$	-0.0220	0.0360*	0.0186	-0.00906	0.0676**	0.0184	0.0368	0.0694**
	(-0.44)	(1.83)	(0.48)	(-0.27)	(2.07)	(0.59)	(1.31)	(2.14)
Board independence$_{t-1}$	0.0163	0.0339	0.000305	0.0286	0.0471	-0.0100	0.109	-0.0518
	(0.26)	(1.07)	(0.01)	(0.53)	(0.95)	(-0.16)	(1.54)	(-0.59)
Tobin's Q$_{t-1}$	-0.00571	-0.0161***	-0.0135**	-0.00332	-0.0220***	-0.00868**	-0.0112	-0.0339***
	(-1.17)	(-4.17)	(-2.17)	(-0.61)	(-3.64)	(-2.16)	(-1.57)	(-3.93)
Industry-Adj ROA$_{t-1}$	-0.00151	-0.00521*	-0.00533	-0.00954*	-0.00450	-0.00776	-0.00393	-0.00182
	(-0.21)	(-1.65)	(-1.17)	(-1.87)	(-0.72)	(-1.46)	(-0.96)	(-0.30)
CEO is Chairman dummy$_{t-1}$			-0.0266	-0.0261	0.0279	-0.00589	0.0167	0.0173
			(-1.50)	(-1.28)	(1.02)	(-0.37)	(1.14)	(0.69)
Ln(market-to-book)$_{t-1}$	0.0412***	0.0463***	0.0397**	0.0250*	0.0535***	0.0467***	0.0373***	0.0724***
	(2.68)	(5.18)	(2.58)	(1.93)	(3.99)	(3.57)	(2.98)	(4.94)
Capital expenditure$_{t-1}$	0.185	0.150**	-0.0336	0.157	0.253*	0.0654	0.188*	0.133
	(1.14)	(1.99)	(-0.32)	(1.36)	(1.72)	(0.55)	(1.72)	(0.81)
Ln(total assets)$_{t-1}$	0.0368**	0.0380***	0.0184	0.0424***	0.0412***	-0.000769	0.0541***	0.0492***
	(2.58)	(4.44)	(1.24)	(2.89)	(3.06)	(-0.07)	(4.61)	(3.16)
Ln(firm age)$_{t-1}$	0.0143	0.000923	-0.00538	0.0304*	0.00896	0.000932	0.0218	0.0317
	(0.80)	(0.09)	(-0.31)	(1.82)	(0.53)	(0.08)	(1.58)	(1.29)
CFO British Dummy$_{t-1}$	0.0387	0.0227	0.0325	0.0576*	0.0428	-0.0413	-0.00608	0.0385
	(0.47)	(1.15)	(0.96)	(1.91)	(1.15)	(-1.57)	(-0.19)	(1.49)
Ln(CFO tenure)$_{t-1}$	0.00402	0.00163	0.0123**	-0.00602	0.00447	0.00365	0.00528	0.00384
	(0.67)	(0.48)	(2.20)	(-1.29)	(0.95)	(0.75)	(1.12)	(0.77)
Ln(CFO age)$_{t-1}$	0.0459	-0.0316	-0.133**	-0.0468	-0.0298	-0.0516	0.000799	-0.0845
	(0.61)	(-0.81)	(-2.41)	(-0.73)	(-0.55)	(-0.92)	(0.02)	(-1.23)
Ln(CFO network size)$_{t-1}$	0.00986	-0.00446	-0.00180	-0.00144	-0.00246	0.00393	-0.000701	0.00364
	(1.14)	(-1.39)	(-0.35)	(-0.23)	(-0.62)	(0.73)	(-0.14)	(0.69)
Ln(CFO total compensation)$_{t-1}$	-0.0167*	-0.0163***	-0.0156*	-0.0191**	-0.0163**	-0.0101	-0.00875	-0.0290***
	(-1.81)	(-3.50)	(-1.88)	(-2.30)	(-2.43)	(-1.57)	(-1.29)	(-3.91)
Constant	-0.407	-0.0737	0.536*	-0.0590	-0.232	0.392	-0.521**	-0.0944
	(-1.11)	(-0.41)	(1.87)	(-0.19)	(-0.94)	(1.34)	(-2.27)	(-0.30)
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj R-square	0.0483	0.0624	0.0755	0.0520	0.0871	0.0589	0.0810	0.0983
No. of Observation	1,342	4,957	1,612	2,146	1,609	1,916	2,630	1,753
No. of Female CFOs	55	274	101	99	71	86	164	79
Average Leverage	0.2391	0.2754	0.2496	0.2750	0.2762	0.2067	0.271	0.3383

Table 8: Internally appointed versus externally appointed CFOs.
Panel A presents the regression results for internally appointed CFOs. Panel B presents the regression results for externally appointed CFOs. Variable definitions are provided in the appendix. *t*-statistics are reported in parentheses and ***, ** and * indicate significance at the 1%, 5% and 10% level respectively. Standard errors are clustered at firm level.

Internally Appointed CFO	(1)	(2)	(3)	(4)	(5)	(6)
CFO Female Dummy$_{t-1}$	0.0101	0.00914	0.0100	0.00976	0.00883	0.00597
	(0.41)	(0.38)	(0.41)	(0.40)	(0.36)	(0.24)
Board Gender Diversity$_{t-1}$		0.0414			0.0417	
		(0.66)			(0.65)	
Board Nationality Diversity$_{t-1}$			0.00504		0.0000298	
			(0.10)		(0.00)	
Board Age Diversity$_{t-1}$				0.00643	0.00656	
				(0.37)	(0.38)	
Board Aggregate Diversity$_{t-1}$						0.00249
						(0.66)
Ln(number of directors)$_{t-1}$	0.0486*	0.0487*	0.0484*	0.0475*	0.0477*	0.0469*
	(1.94)	(1.95)	(1.92)	(1.87)	(1.86)	(1.85)
Board independence$_{t-1}$	0.0449	0.0428	0.0450	0.0454	0.0433	0.0446
	(1.33)	(1.26)	(1.33)	(1.33)	(1.26)	(1.32)
Tobin's Q$_{t-1}$	-0.0148***	-0.0148***	-0.0148***	-0.0147***	-0.0147***	-0.0148***
	(-2.98)	(-2.99)	(-2.99)	(-2.97)	(-2.99)	(-2.98)
Industry-Adj ROA$_{t-1}$	-0.0129***	-0.0128***	-0.0129***	-0.0128***	-0.0128***	-0.0129***
	(-3.46)	(-3.44)	(-3.46)	(-3.46)	(-3.43)	(-3.46)
CEO is Chairman dummy$_{t-1}$	0.0102	0.0104	0.0102	0.00997	0.0101	0.0101
	(0.88)	(0.90)	(0.89)	(0.85)	(0.87)	(0.87)
Ln(market-to-book)$_{t-1}$	0.0481***	0.0482***	0.0481***	0.0479***	0.0480***	0.0479***
	(4.60)	(4.61)	(4.60)	(4.58)	(4.59)	(4.57)
Capital expenditure$_{t-1}$	0.194**	0.192**	0.194**	0.195**	0.193**	0.193**
	(2.17)	(2.16)	(2.17)	(2.17)	(2.16)	(2.16)
Ln(total assets)$_{t-1}$	0.0354***	0.0356***	0.0353***	0.0356***	0.0358***	0.0354***
	(4.11)	(4.12)	(4.13)	(4.17)	(4.21)	(4.10)
Ln(firm age)$_{t-1}$	0.0113	0.0119	0.0114	0.0110	0.0115	0.0115
	(0.77)	(0.81)	(0.78)	(0.75)	(0.80)	(0.78)
CFO British Dummy$_{t-1}$	0.0185	0.0195	0.0185	0.0187	0.0196	0.0214
	(0.72)	(0.76)	(0.72)	(0.72)	(0.76)	(0.82)
Ln(CFO tenure)$_{t-1}$	0.00402	0.00408	0.00401	0.00395	0.00402	0.00397
	(0.89)	(0.90)	(0.89)	(0.87)	(0.89)	(0.88)
Ln(CFO age)$_{t-1}$	-0.0315	-0.0302	-0.0314	-0.0312	-0.0299	-0.0239
	(-0.64)	(-0.62)	(-0.64)	(-0.64)	(-0.61)	(-0.48)
Ln(CFO network size)$_{t-1}$	-0.00533	-0.00512	-0.00533	-0.00535	-0.00514	-0.00524
	(-1.15)	(-1.12)	(-1.15)	(-1.16)	(-1.12)	(-1.14)
Ln(CFO total compensation)$_{t-1}$	-0.0105*	-0.0107*	-0.0106*	-0.0105*	-0.0107*	-0.0106*
	(-1.70)	(-1.72)	(-1.69)	(-1.70)	(-1.71)	(-1.71)
Constant	-0.133	-0.142	-0.132	-0.134	-0.144	-0.159
	(-0.61)	(-0.65)	(-0.60)	(-0.61)	(-0.65)	(-0.72)
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Adj R-square	0.0593	0.0593	0.0590	0.0591	0.0589	0.0594
No. of Observation	3,668	3,668	3,668	3,668	3,668	3,668
No. of Female CFOs	212	212	212	212	212	212
Average Leverage	0.2673	0.2673	0.2673	0.2673	0.2673	0.2673

Table 8 – *continued*

Externally Appointing CFO	(1)	(2)	(3)	(4)	(5)	(6)
CFO Female Dummy$_{t-1}$	-0.0652**	-0.0634**	-0.0655**	-0.0650**	-0.0634**	-0.0698***
	(-2.50)	(-2.47)	(-2.49)	(-2.49)	(-2.44)	(-2.64)
Board Gender Diversity$_{t-1}$		0.0783			0.0795	
		(1.18)			(1.20)	
Board Nationality Diversity$_{t-1}$			0.0217		0.0235	
			(0.39)		(0.42)	
Board Age Diversity$_{t-1}$				0.00599	0.00785	
				(0.25)	(0.34)	
Board Aggregate Diversity$_{t-1}$						0.00456
						(1.03)
Ln(number of directors)$_{t-1}$	0.00342	0.00113	0.00213	0.00257	-0.00142	-0.00132
	(0.13)	(0.04)	(0.08)	(0.09)	(-0.05)	(-0.05)
Board independence$_{t-1}$	0.0462	0.0395	0.0466	0.0468	0.0405	0.0444
	(1.12)	(0.92)	(1.13)	(1.12)	(0.94)	(1.08)
Tobin's Q$_{t-1}$	-0.00499	-0.00503	-0.00502	-0.00499	-0.00508	-0.00506
	(-1.21)	(-1.21)	(-1.22)	(-1.22)	(-1.23)	(-1.23)
Industry-Adj ROA$_{t-1}$	0.00301	0.00332	0.00309	0.00303	0.00343	0.00333
	(0.70)	(0.77)	(0.72)	(0.70)	(0.80)	(0.78)
CEO is Chairman dummy$_{t-1}$	0.00990	0.0107	0.00974	0.00980	0.0104	0.00995
	(0.66)	(0.72)	(0.65)	(0.65)	(0.70)	(0.66)
Ln(market-to-book)$_{t-1}$	0.0353***	0.0355***	0.0354***	0.0353***	0.0357***	0.0356***
	(3.36)	(3.39)	(3.36)	(3.36)	(3.39)	(3.38)
Capital expenditure$_{t-1}$	0.174*	0.173*	0.176*	0.173*	0.175*	0.175*
	(1.74)	(1.74)	(1.75)	(1.73)	(1.75)	(1.75)
Ln(total assets)$_{t-1}$	0.0562***	0.0563***	0.0564***	0.0560***	0.0564***	0.0557***
	(4.75)	(4.79)	(4.82)	(4.74)	(4.84)	(4.72)
Ln(firm age)$_{t-1}$	-0.00908	-0.00789	-0.00881	-0.00904	-0.00753	-0.00803
	(-0.70)	(-0.62)	(-0.68)	(-0.70)	(-0.59)	(-0.62)
CFO British Dummy$_{t-1}$	-0.0247	-0.0263	-0.0254	-0.0247	-0.0272	-0.0229
	(-0.79)	(-0.86)	(-0.81)	(-0.79)	(-0.88)	(-0.73)
Ln(CFO tenure)$_{t-1}$	0.00639	0.00685	0.00641	0.00640	0.00689	0.00667
	(1.37)	(1.47)	(1.38)	(1.37)	(1.48)	(1.43)
Ln(CFO age)$_{t-1}$	-0.0941	-0.0978	-0.0956	-0.0940	-0.0995	-0.0859
	(-1.33)	(-1.40)	(-1.36)	(-1.33)	(-1.43)	(-1.20)
Ln(CFO network size)$_{t-1}$	-0.00389	-0.00396	-0.00398	-0.00380	-0.00395	-0.00382
	(-0.56)	(-0.56)	(-0.57)	(-0.55)	(-0.56)	(-0.55)
Ln(CFO total compensation)$_{t-1}$	-0.0204***	-0.0203***	-0.0204***	-0.0204***	-0.0202***	-0.0202***
	(-3.53)	(-3.52)	(-3.52)	(-3.52)	(-3.51)	(-3.50)
Constant	0.0873	0.107	0.0937	0.0895	0.117	0.0720
	(0.31)	(0.38)	(0.33)	(0.31)	(0.41)	(0.25)
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Adj R-square	0.0779	0.0788	0.0777	0.0776	0.0784	0.0785
No. of Observation	2,631	2,631	2,631	2,631	2,631	2,631
No. of Female CFOs	117	117	117	117	117	117
Average Leverage	0.2682	0.2682	0.2682	0.2682	0.2682	0.2682

Table 9: Difference-in-Difference Analysis.
This table presents the difference-in-difference analysis results for female CFOs' influence on leverage before and after changes in the gender of CFOs. Variable definitions are provided in the appendix. ***, ** and * indicate significance at the 1%, 5% and 10% level respectively.

Panel A: Controlling for Board Gender Diversity				
Pre-transition		Mean	Difference (Treatment minus Control)	p-value
	Control (male CFO Leverage)	0.237		
	Treatment (male CFO Leverage)	0.227	-0.010	0.310
Post-transition				
	Control (male CFO Leverage)	0.273		
	Treatment (female CFO Leverage)	0.237	-0.036	0.001***
Diff-in-Diff (Post-transition - Pre-transition)			-0.025	0.066*
Panel B: Controlling for Board Nationality Diversity				
Pre-transition		Mean	Difference (Treatment minus Control)	p-value
	Control (male CFO Leverage)	0.242		
	Treatment (male CFO Leverage)	0.227	-0.015	0.140
Post-transition				
	Control (male CFO Leverage)	0.281		
	Treatment (female CFO Leverage)	0.237	-0.044	0.000***
Diff-in-Diff (Post-transition - Pre-transition)			-0.029	0.029**
Panel C: Controlling for Board Age Diversity				
Pre-transition		Mean	Difference (Treatment minus Control)	p-value
	Control (male CFO Leverage)	0.242		
	Treatment (male CFO Leverage)	0.227	-0.015	0.139
Post-transition				
	Control (male CFO Leverage)	0.275		
	Treatment (female CFO Leverage)	0.237	-0.038	0.004***
Diff-in-Diff (Post-transition - Pre-transition)			-0.023	0.086**
Panel D: Controlling for Board Aggregate Diversity				
Pre-transition		Mean	Difference (Treatment minus Control)	p-value
	Control (male CFO Leverage)	0.241		
	Treatment (male CFO Leverage)	0.227	-0.014	0.160
Post-transition				
	Control (male CFO Leverage)	0.288		
	Treatment (female CFO Leverage)	0.237	-0.051	0.000***
Diff-in-Diff (Post-transition - Pre-transition)			-0.036	0.008***

Table 10: Transition firms.

This table presents the regression results for female CFO influence on leverage 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. Variable definitions are provided in the appendix. *t*-statistics are reported in parentheses and ***, ** and * indicate significance at the 1%, 5% and 10% level respectively. Standard errors are clustered at firm level.

	(1)	(2)	(3)	(4)	(5)	(6)
CFO Female Dummy$_{t-1}$	-0.0493***	-0.0491***	-0.0494***	-0.0496***	-0.0495***	-0.0497**
	(-3.22)	(-3.32)	(-3.28)	(-3.25)	(-3.42)	(-2.61)
Board Gender Diversity$_{t-1}$		0.154*			0.163**	
		(1.93)			(2.03)	
Board Nationality Diversity$_{t-1}$			-0.0859		-0.0958	
			(-1.03)		(-1.13)	
Board Age Diversity$_{t-1}$				-0.0298	-0.0366	
				(-0.73)	(-0.88)	
Board Aggregate Diversity$_{t-1}$						0.000317
						(0.04)
Constant	-0.397	-0.383	-0.410	-0.401	-0.400	-0.399
	(-1.36)	(-1.35)	(-1.39)	(-1.36)	(-1.38)	(-1.42)
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes
Adj R-square	0.1635	0.1685	0.1654	0.1645	0.1727	0.1625
No. of Observation	882	882	882	882	882	882
No. of Female CFOs	245	245	245	245	245	245
Average leverage	0.2594	0.2594	0.2594	0.2594	0.2594	0.2594

Table 11: High-dimensional Fixed Effects.

This table presents the regression results for female CFOs' influence on leverage including high-dimensional fixed effects at the firm and year-industry level. Variable definitions are provided in the appendix. *t*-statistics are reported in parentheses and ***, ** and * indicate significance at the 1%, 5% and 10% level respectively. Standard errors are clustered at firm level.

	(1)	(2)	(3)	(4)	(5)	(6)
CFO Female Dummy$_{t-1}$	-0.0338*	-0.0337*	-0.0340*	-0.0338*	-0.0338*	-0.0370**
	(-1.97)	(-2.00)	(-1.98)	(-1.97)	(-2.00)	(-2.16)
Board Gender Diversity$_{t-1}$		0.0592			0.0582	
		(1.10)			(1.09)	
Board Nationality Diversity$_{t-1}$			0.0123		0.00913	
			(0.31)		(0.23)	
Board Age Diversity$_{t-1}$				0.000121	0.000521	
				(0.01)	(0.04)	
Board Aggregate Diversity$_{t-1}$						0.00250
						(0.80)
Constant	-0.188	-0.186	-0.186	-0.188	-0.185	-0.209
	(-1.23)	(-1.22)	(-1.21)	(-1.23)	(-1.21)	(-1.36)
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Year#Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes
Adj R-square	0.7411	0.7412	0.7410	0.7410	0.7411	0.7411
No. of Observation	6,154	6,154	6,154	6,154	6,154	6,154
No. of Female CFOs	323	323	323	323	323	323
Average Leverage	0.2677	0.2677	0.2677	0.2677	0.2677	0.2677

Table 12: Sub-sample Analysis.

Panel A presents the regression results for female CFOs' influence on leverage over the period 1999-2011. Panel B presents the regression results for female CFOs' influence on leverage over the period 2012-2017. Variable definitions are provided in the appendix. *t*-statistics are reported in parentheses and ***, ** and * indicate significance at the 1%, 5% and 10% level respectively. Standard errors are clustered at firm level.

Panel A: 1999-2011	(1)	(2)	(3)	(4)	(5)	(6)
CFO Female Dummy$_{t-1}$	-0.0286	-0.0282	-0.0287	-0.0287	-0.0284	-0.0284
	(-1.15)	(-1.15)	(-1.16)	(-1.16)	(-1.16)	(-1.15)
Board Gender Diversity$_{t-1}$		-0.0307			-0.0327	
		(-0.54)			(-0.57)	
Board Nationality Diversity$_{t-}$			0.0199		0.0214	
			(0.42)		(0.45)	
Board Age Diversity$_{t-1}$				0.00257	0.00266	
				(0.15)	(0.16)	
Board Aggregate Diversity$_{t-1}$						-0.000148
						(-0.04)
Constant	-0.223	-0.219	-0.220	-0.222	-0.216	-0.221
	(-1.32)	(-1.31)	(-1.30)	(-1.32)	(-1.28)	(-1.32)
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes
Adj R-square	0.0945	0.0944	0.0944	0.0943	0.0941	0.0943
No. of Observation	4,017	4,017	4,017	4,017	4,017	4,017
No. of Female CFOs	155	155	155	155	155	155
Average Leverage	0.2712	0.2712	0.2712	0.2712	0.2712	0.2712
Panel B: 2012-2017	(1)	(2)	(3)	(4)	(5)	(6)
CFO Female Dummy$_{t-1}$	-0.0516**	-0.0519**	-0.0515**	-0.0507**	-0.0509**	-0.0542**
	(-2.22)	(-2.23)	(-2.21)	(-2.19)	(-2.18)	(-2.30)
Board Gender Diversity$_{t-1}$		-0.0140			-0.00949	
		(-0.23)			(-0.16)	
Board Nationality$_{t-1}$			0.0199		0.0191	
			(0.38)		(0.37)	
Board Age Diversity$_{t-1}$				0.0228	0.0224	
				(1.25)	(1.23)	
Board Aggregate$_{t-1}$						0.00302
						(0.72)
Constant	0.336	0.337	0.339	0.320	0.324	0.302
	(1.43)	(1.44)	(1.45)	(1.36)	(1.39)	(1.26)
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes
Adj R-square	0.0432	0.0428	0.0429	0.0441	0.0434	0.0433
No. of Observation	2,282	2,282	2,282	2,282	2,282	2,282
No. of Female CFOs	174	174	174	174	174	174
Average Leverage	0.2609	0.2609	0.2609	0.2609	0.2609	0.2609

Table 13: Heckman two-stage regression

In the first stage, we use CFO Female Dummy$_t$ as the dependent variable and run a Probit regression. Average of Female Directors$_t$ is an exogenous variable, which is the mean % of appointing Female directors in the market in year t, excluding the firm concerned. In the second stage, we add IMR$_{t-1}$ (inverse Mills ratio) from first stage in our regression and run the regression of CFO Female Dummy$_{t-1}$ on Leverage$_t$. *t*-statistics are reported in parentheses and ***, ** and * indicate significance at the 1%, 5% and 10% level respectively. Standard errors are clustered at firm level.

Stage 1: Probit regression		Stage 2: OLS regression						
	(1)		(1)	(2)	(3)	(4)	(5)	(6)
Ln(number of directors)$_t$	1.324**	CFO Female Dummy$_{t-1}$	-0.0633***	-0.0513*	-0.0635***	-0.0643***	-0.0524*	-0.0606***
	(2.53)		(-3.44)	(-1.68)	(-3.51)	(-3.52)	(-1.72)	(-3.15)
Industry-Adj ROA$_t$	-0.124	Board Gender Diversity$_{t-1}$		0.133			0.135	
	(-1.01)			(0.49)			(0.49)	
Ln(total assets)$_t$	-0.186	Board Nationality Diversity$_{t-1}$			-0.0875		-0.0958	
	(-0.95)				(-0.99)		(-1.07)	
CEO is Chairman dummy$_t$	0.535*	Board Age Diversity$_{t-1}$				-0.0333	-0.0367	
	(1.86)					(-0.76)	(-0.84)	
Ln(CFO tenure)$_t$	-0.131	Board Aggregate Diversity$_{t-1}$						-0.0106
	(-1.47)							(-1.00)
Ln(CFO age)$_t$	-2.583***	Ln(number of directors)$_{t-1}$	0.0148	0.0253	0.0183	0.0193	0.0342	0.0131
	(-3.17)		(0.34)	(0.52)	(0.41)	(0.42)	(0.67)	(0.30)
Ln(CFO network size)$_t$	0.345***	Board independence$_{t-1}$	0.0814	0.0816	0.0845	0.0794	0.0829	0.0808
	(4.77)		(1.27)	(1.28)	(1.32)	(1.24)	(1.30)	(1.26)
Ln(CFO total compensation)$_t$	-0.463***	Tobin's Q$_{t-1}$	-0.00988	-0.0102	-0.00980	-0.00921	-0.00935	-0.00893
	(-2.81)		(-1.42)	(-1.47)	(-1.42)	(-1.39)	(-1.44)	(-1.36)
Average of Female Directors$_t$	-20.35***	Industry-Adj ROA$_{t-1}$	-0.0117*	-0.0125*	-0.0110	-0.0117*	-0.0116	-0.0107
	(-13.63)		(-1.74)	(-1.76)	(-1.63)	(-1.74)	(-1.66)	(-1.64)
Constant	121.7***	CEO is Chairman dummy$_{t-1}$	-0.00503	-0.00197	-0.00412	-0.00161	0.00288	-0.00345
	(12.96)		(-0.23)	(-0.08)	(-0.19)	(-0.07)	(0.12)	(-0.16)
		Ln(market-to-book)$_{t-1}$	0.0496***	0.0504***	0.0499***	0.0491***	0.0501***	0.0485***
			(2.63)	(2.67)	(2.64)	(2.68)	(2.73)	(2.68)
		Capital expenditure$_{t-1}$	0.0831	0.0845	0.0593	0.0930	0.0693	0.0792
			(0.37)	(0.37)	(0.26)	(0.41)	(0.30)	(0.36)
		Ln(total assets)$_{t-1}$	0.0606***	0.0602***	0.0617***	0.0615***	0.0623***	0.0636***
			(3.19)	(3.18)	(3.35)	(3.26)	(3.43)	(3.44)
		Ln(firm age)$_{t-1}$	-0.0252	-0.0253	-0.0283	-0.0251	-0.0285	-0.0270
			(-0.98)	(-0.99)	(-1.10)	(-0.99)	(-1.13)	(-1.06)
		CFO British Dummy$_{t-1}$	0.0627*	0.0630*	0.0608*	0.0623*	0.0605*	0.0521
			(1.88)	(1.90)	(1.78)	(1.92)	(1.84)	(1.54)
		Ln(CFO tenure)$_{t-1}$	0.00137	0.000651	0.00131	0.00157	0.000789	0.00213
			(0.21)	(0.10)	(0.20)	(0.24)	(0.12)	(0.33)
		Ln(CFO age)$_{t-1}$	-0.0761	-0.0907	-0.0767	-0.0806	-0.0966	-0.0969
			(-1.09)	(-1.21)	(-1.10)	(-1.18)	(-1.32)	(-1.47)
		Ln(CFO network size)$_{t-1}$	0.0138**	0.0157**	0.0143**	0.0140**	0.0165**	0.0128*
			(2.09)	(2.20)	(2.21)	(2.15)	(2.35)	(1.84)
		Ln(CFO total compensation)$_{t-}$	0.00890	0.00554	0.00853	0.00832	0.00441	0.0107
			(0.88)	(0.49)	(0.87)	(0.84)	(0.40)	(1.02)
		IMR$_{t-1}$	-0.00889*	-0.00140	-0.00898*	-0.00931**	-0.00179	-0.0152**
			(-1.90)	(-0.09)	(-1.92)	(-1.99)	(-0.12)	(-2.12)
		Constant	-0.442	-0.401	-0.449	-0.443	-0.408	-0.389
			(-1.55)	(-1.37)	(-1.55)	(-1.55)	(-1.36)	(-1.41)
Year Fixed Effects	Yes	Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Firm Fixed Effects	Yes	Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Adj R-square	0.6665	Adj R-square	0.7569	0.7583	0.7575	0.7572	0.7595	0.7566
No. of Observation	1,051	No. of Observation	882	882	882	882	882	882
		No. of Female CFO	245	245	245	245	245	245
		Average Leverage	0.2624	0.2624	02624	0.2624	0.2624	0.2624

Table 14: Market Leverage.

This table presents the regression results for female CFOs' influence on leverage over the period 1999-2017. The dependent variable is market leverage defined as the sum of short-term and long-term debt over the sum of short-term and long-term debt and the market value of equity. *t*-statistics are reported in parentheses and ***, ** and * indicate significance at the 1%, 5% and 10% level respectively. Standard errors are clustered at firm level.

	(1)	(2)	(3)	(4)	(5)	(6)
CFO Female Dummy$_{t-1}$	-0.0322**	-0.0320**	-0.0326**	-0.0323**	-0.0324**	-0.0348**
	(-2.01)	(-2.02)	(-2.02)	(-2.01)	(-2.03)	(-2.10)
Board Gender Diversity$_{t-1}$		0.0265			0.0217	
		(0.59)			(0.48)	
Board Nationality$_{t-1}$			0.0433		0.0421	
			(1.33)		(1.29)	
Board Age Diversity$_{t-1}$				-0.000825	-0.000176	
				(-0.06)	(-0.01)	
Board Aggregate$_{t-1}$						0.00215
						(0.76)
Constant	-0.533***	-0.532***	-0.526***	-0.533***	-0.526***	-0.549***
	(-3.71)	(-3.70)	(-3.66)	(-3.71)	(-3.66)	(-3.82)
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes
Adj R-square	0.1892	0.1892	0.1897	0.1890	0.1896	0.1893
No. of Observation	6,118	6,118	6,118	6,118	6,118	6,118
No. of Female CFOs	316	316	316	316	316	316
Average Leverage	0.1893	0.1893	0.1893	0.1893	0.1893	0.1893

Table 15: Change in Leverage

This table presents the regression results for female CFOs' influence on the change in leverage over the period 1999-2017. The dependent variable is the change in leverage. *t*-statistics are reported in parentheses and ***, ** and * indicate significance at the 1%, 5% and 10% level respectively. Standard errors are clustered at firm level.

	(1)	(2)	(3)	(4)	(5)	(6)
CFO Female Dummy$_{t-1}$	-0.0252**	-0.0251**	-0.0253**	-0.0252**	-0.0253**	-0.0274**
	(-2.44)	(-2.45)	(-2.45)	(-2.45)	(-2.46)	(-2.58)
Board Gender Diversity$_{t-1}$		0.0167			0.0155	
		(0.57)			(0.53)	
Board Nationality Diversity$_{t-1}$			0.0149		0.0145	
			(0.63)		(0.61)	
Board Age Diversity$_{t-1}$				0.00484	0.00511	
				(0.57)	(0.61)	
Board Aggregate Diversity$_{t-1}$						0.00171
						(0.93)
Ln(number of directors)$_{t-1}$	0.0185	0.0184	0.0176	0.0179	0.0168	0.0171
	(1.63)	(1.61)	(1.54)	(1.56)	(1.45)	(1.48)
Board independence$_{t-1}$	0.0328*	0.0316*	0.0331*	0.0332*	0.0323*	0.0322*
	(1.85)	(1.75)	(1.86)	(1.87)	(1.79)	(1.81)
Tobin's Q$_{t-1}$	-0.00727**	-0.00728**	-0.00731***	-0.00726**	-0.00732***	-
	(-2.57)	(-2.57)	(-2.59)	(-2.56)	(-2.59)	(-2.58)
Industry-Adj ROA$_{t-1}$	-0.00316	-0.00315	-0.00317	-0.00316	-0.00315	-0.00315
	(-1.35)	(-1.34)	(-1.35)	(-1.35)	(-1.35)	(-1.34)
CEO is Chairman dummy$_{t-1}$	0.00148	0.00158	0.00155	0.00136	0.00151	0.00148
	(0.25)	(0.27)	(0.26)	(0.23)	(0.25)	(0.25)
Ln(market-to-book)$_{t-1}$	0.0259***	0.0259***	0.0259***	0.0258***	0.0259***	0.0259***
	(4.13)	(4.13)	(4.14)	(4.12)	(4.14)	(4.13)
Capital expenditure$_{t-1}$	0.118**	0.117**	0.119**	0.118**	0.118**	0.118**
	(2.42)	(2.41)	(2.43)	(2.42)	(2.43)	(2.42)
Leverage$_{t-1}$	-0.455***	-0.455***	-0.455***	-0.455***	-0.455***	-0.455***
	(-21.55)	(-21.56)	(-21.54)	(-21.53)	(-21.54)	(-21.52)
Ln(total assets)$_{t-1}$	0.0163***	0.0164***	0.0164***	0.0164***	0.0165***	0.0163***
	(3.60)	(3.61)	(3.61)	(3.61)	(3.63)	(3.58)
Ln(firm age)$_{t-1}$	0.00237	0.00253	0.00262	0.00224	0.00263	0.00253
	(0.44)	(0.48)	(0.49)	(0.42)	(0.49)	(0.48)
CFO British Dummy$_{t-1}$	0.00453	0.00459	0.00430	0.00472	0.00457	0.00605
	(0.42)	(0.42)	(0.40)	(0.43)	(0.42)	(0.55)
Ln(CFO tenure)$_{t-1}$	0.00251	0.00258	0.00249	0.00250	0.00254	0.00255
	(1.29)	(1.32)	(1.28)	(1.28)	(1.30)	(1.31)
Ln(CFO age)$_{t-1}$	-0.0197	-0.0199	-0.0200	-0.0195	-0.0199	-0.0154
	(-0.92)	(-0.93)	(-0.94)	(-0.91)	(-0.94)	(-0.71)
Ln(CFO network size)$_{t-1}$	-0.000253	-0.000215	-0.000323	-0.000246	-0.000278	-0.000245
	(-0.13)	(-0.11)	(-0.17)	(-0.13)	(-0.14)	(-0.13)
Ln(CFO total compensation)$_{t-1}$	-0.00342	-0.00345	-0.00339	-0.00343	-0.00343	-0.00344
	(-1.22)	(-1.23)	(-1.21)	(-1.22)	(-1.22)	(-1.22)
Constant	-0.0473	-0.0469	-0.0448	-0.0474	-0.0447	-0.0603
	(-0.48)	(-0.48)	(-0.45)	(-0.48)	(-0.45)	(-0.61)
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Adj R-square	0.2405	0.2405	0.2405	0.2405	0.2404	0.2406
No. of Observation	6,299	6,299	6,299	6,299	6,299	6,299
No. of Female CFO	329	329	329	329	329	329
Average Leverage	0.2677	0.2677	0.2677	0.2677	0.2677	0.2677

Appendix

Table A1: Variable definitions.

Variable	Definition	Source
Board characteristics		
% female directors	The percentage of female directors on the board at the end of the fiscal year *t*.	Boardex
% non-British directors	The percentage of non-British directors on the board at the end of the fiscal year *t*.	Boardex
Ln(SD of board age)	The natural logarithm of the standard deviation of the age of directors of the board at the end of the fiscal year *t*.	Boardex
Board Gender Diversity	The standardized measure of board gender diversity (as in Fang et al., 2018) at the end of the fiscal year *t*.	Boardex
Board Nationality Diversity	The standardized measure of board nationality diversity (as in Fang et al., 2018) at the end of the fiscal year *t*.	Boardex
Board Age Diversity	The standardized measure of board age diversity (as in Fang et al., 2018) at the end of the fiscal year *t*.	Boardex
Board Aggregate Diversity	The standardized measure of board aggregate diversity (as in Fang et al., 2018) at the end of the fiscal year *t*.	Boardex
Ln(number of directors)	The natural logarithm of the number of directors at the end of fiscal year *t*.	Boardex
Board Independence	The percentage of independent directors over total directors at the end of fiscal year *t*.	Boardex
CEO is Chairman	A dummy variable equal to one if the Chief Executive Officer (CFO) is also the Chairman, zero otherwise at the end of fiscal year *t*.	BoardEx
Firm characteristics		
Ln(market-to-book)	The natural logarithm of the Market-to-Book value of equity at the end of fiscal year *t*.	Datastream
Capital expenditure	Ratio of capital expenditures to total assets at the end of fiscal year *t*.	Datastream
Ln(total assets)	The natural logarithm of the book value of total assets at the end of fiscal year *t*.	Datastream
Ln(Firm age)	The number of years since a firm has been listed in the exchange at the end of year *t*.	Datastream
Tobin's *Q*	The total market value of the firm divided by the total asset value of firm at the end of the fiscal year *t*.	Datastream
Industry-adjusted ROA	The industry adjusted return on assets at the end of the fiscal year *t*.	Datastream
CFO characteristics		
CFO Female Dummy	A dummy variable equal to one if the CFO is female, zero otherwise at the end of the fiscal year *t*.	Boardex
CFO British Dummy	A dummy variable equal to one if the CFO is British, zero otherwise at the end of the fiscal year *t*.	Boardex
LN(CFO tenure)	The natural logarithm of the CFO tenure at the end of fiscal year *t*.	Boardex
Ln(CFO age)	The natural logarithm of the CFO age at the end of fiscal year *t*.	Boardex
Ln(CFO network size)	The natural logarithm of the director network size at the end of fiscal year *t*.	Boardex
Ln(CFO total compensation)	The natural logarithm of the director total compensation at the end of fiscal year *t*.	Boardex

Table A2: Correlation matrix

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
(1) Leverage	1.00												
(2) CFO Female Dummy	-0.05***	1.00											
(3) CEO Female Dummy	-0.01	0.07***	1.00										
(4) Board Gender Diversity	0.01	-0.00	0.10***	1.00									
(5) Board Nationality Diversity	0.00	-0.00	-0.01	0.07***	1.00								
(6) Board Age Diversity	-0.00	-0.00	0.02	-0.03**	-0.02*	1.00							
(7) Board Aggregate Diversity	0.05***	0.22***	0.16***	0.31***	0.23***	0.32***	1.00						
(8) Ln(number of directors)	0.26***	-0.01	0.01	0.01	0.05***	0.05***	0.24***	1.00					
(9) Board independence	0.22***	0.01	0.03**	0.05***	-0.02	-0.02*	0.12***	0.32***	1.00				
(10) Tobin's Q	-0.14***	0.01	-0.02*	0.02*	0.02	0.00	0.06***	0.01	-0.05***	1.00			
(11) Industry-Adj ROA	-0.07	-0.01	-0.00	-0.00	-0.01	-0.00	0.02*	0.06***	0.05***	-0.05***	1.00		
(12) CEO is Chairman dummy	-0.06***	-0.03**	-0.03***	-0.02*	-0.00	0.01	-0.07***	-0.08***	-0.25***	-0.00	-0.03**	1.00	
(13) Ln(market-to-book)	0.17***	0.01	0.00	0.01	-0.00	0.01	0.07***	0.17***	0.13***	0.64***	-0.03***	-0.04***	1.00
(14) Capital expenditure	0.08***	0.00	-0.04***	0.01	-0.02	-0.00	0.01	0.03***	0.00	0.03***	0.05***	0.01	0.03**
(15) Ln(total assets)	0.41***	-0.03***	0.03**	0.00	0.00	-0.00	0.21***	0.68***	0.56***	-0.17***	0.09***	-0.15***	0.09***
(16) Ln(firm age)	0.17***	0.00	-0.01	-0.02**	-0.02	0.02	0.01	0.24***	0.29***	-0.19***	0.05***	-0.05***	-0.06***
(17) CFO British Dummy	0.01	-0.05***	0.01	-0.00	-0.00	0.00	-0.30***	-0.07***	-0.02	-0.00	-0.01	-0.01	0.02
(18) Ln(CFO tenure)	-0.00	-0.09***	-0.01	-0.05***	-0.01	0.01	-0.10***	0.07***	0.06***	-0.03**	0.03**	0.02	0.01
(19) Ln(CFO age)	0.01	-0.12***	0.01	-0.00	0.00	-0.00	-0.12***	0.06***	0.05***	0.00	0.03***	-0.00	0.01
(20) Ln(CFO network size)	0.07***	0.05***	0.03***	-0.02**	0.03***	0.00	0.12***	0.15***	0.18***	0.02**	0.01	-0.08***	0.07***
(21) Ln(CFO compensation)	0.26***	-0.03***	0.03**	0.01	-0.02	0.00	0.19***	0.54***	0.54***	0.01	0.08***	-0.20***	0.23***

	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
(14) Capital expenditure	1.00							
(15) Ln(total assets)	0.04***	1.00						
(16) Ln(firm age)	-0.07***	0.40***	1.00					
(17) CFO British Dummy	-0.03***	-0.07***	0.05***	1.00				
(18) Ln(CFO tenure)	0.02	0.10***	0.28***	0.04***	1.00			
(19) Ln(CFO age)	-0.03**	0.11***	0.17***	-0.03***	0.32***	1.00		
(20) Ln(CFO network size)	-0.06***	0.20***	0.06***	0.08***	-0.07***	-0.16***	1.00	
(21) Ln(CFO compensation)	0.00	0.79***	0.34***	-0.03**	0.22***	0.13***	0.20***	1.00