Gender Diversity, Firm Performance, and Corporate Decisions

Abstract

We examine the impact of female directors and executives on firm profitability, value and firm's decisions. Existing research has studied female CEOs and female directors in isolation and has offered inconsistent evidence on the benefits of having female directors and CEOs for modern corporations. We investigate this issue with a comprehensive dataset, controlling for the endogeneity of female CEOs and directors using panel dataset with firm fixed effects and utilizing an instrumental variable approach. Our findings show that female directors are positively related to firm's profitability and Tobin's q. However, these effects are significantly reduced for female CEOs. In addition, while female directors are associated positively with acquisitions, raising external finance and dividend payout, female CEO's are less inclined to engage in acquisitions and associated with lower dividend payout. Our study presents evidence that the impact of women is different based on their roles in organizations. The relationships observed between female CEOs and firm performance and investment behavior are consistent with the behavioral literature and the hypothesis that more risk-averse female executives are associated with undertaking lower risk projects that realize subsequent lower returns. However, the results for female directors suggest that women on board do not exhibit such risk averseness and are beneficial for firm profitability and value.

1. Introduction

Gender diversity in the boardroom has received increasing attention in academic research and the popular press. A recent article by Fortune magazine suggests the need for a higher percentage of women on corporate boards in the US (DuBois, 2013). In addition to Scandinavian countries, which are prominent with relatively large percentage of women on their corporate boards, the article cites several developing countries, which have a large number of women on their boards. For example, in China over half of the corporate executives are female, similarly Estonia and Vietnam rank high with percentage of women on their corporate boards of 40% and 33%, respectively. In contrast, these percentages are much lower in countries like the US and the UK, where only approximately 20% of the corporate leaders are female. In the European Union countries, on average, only about 14% of the corporate board seats are held by women. This, however is about to change, at least in the European Union countries, where European Commission recently has approved a proposal that calls for at least 40% of women non-executive directors on the boards of European public-listed companies by 2020. Although such a mandatory quota is not likely to happen in the U.S. in the near future, the investors and public have already realized the importance of board gender diversity. For example, during its IPO process in 2012, Facebook was asked to add a woman to its all-male board of directors by one of the largest US public pension funds. As a result, Sheryl Sandberg, the COO of Facebook, was appointed to the board of directors.

Similarly, recent academic research has tried to establish a case for the presence of women on corporate boards, by focusing on the relation between female directors and firm performance. Unfortunately, the findings of these empirical studies are mixed. Some

papers find a significant positive relation between the fraction of women and firm value (Carter et al. 2003; Erhardt et al. 2003; Luckerath-Rovers 2011), while others find negative or insignificant results (Rose 2007; Adams and Ferreira 2009; Minguez-Vera and Martin 2012). The lack of support for the case of higher female directorship might be caused by several reasons.

First, due to the data limitation, most of these studies focus only on a small number of firms over a short period of time. The conclusions drawn from a small sample may not be relevant for all firms. Second, the endogenous nature of female presence in corporate boards makes it hard to understand the relation between board diversity and performance. For instance, larger and more profitable firms may be more likely to appoint female directors. Similarly, female executives may self-select to work in certain industries (such as retail) as opposed to others (e.g. finance). Ignoring such endogeneity issues may lead to incorrect conclusions. Third, prior literature has only examined the effect of female directors and female CEOs on performance and firm's decisions in isolation. While most studies ignore the endogeneity of female directors and executives, two recent studies conduct analyses that account for this issue. Huang and Kisgen (in press) examine financial and investment decisions made by female CEOs and CFOs. They show that female executives are negatively associated with acquisitions and debt issuance. After examining acquisition and debt issuance CARs, the authors conclude that male executives exhibit overconfidence. Another study by Adams and Ferreira examines the impact of female directors on Tobin's. The authors show that after employing IV approach with fixed effects, the relationship between female directors and the natural log of Tobin's q becomes insignificant. Both of these studies examine female directors and

female CEOs independently. While CEOs are also board members, it is possible that female behave differently depending on their role or stake in the company. For example, a recent study by Martin et al. (forthcoming) shows that executives with larger share of in-the-money options are more risk averse. Therefore, it is imperative to disentangle these two effects. Furthermore, in order to understand what drives any potential differences in the effect of female executives and directors and firm value and performance, we also investigate the relationships between women on boards and female CEOs and firm's investment, financing and payout decisions.

Our paper aims at examining of the impact of female directors and CEOs on firms' decisions and subsequent performance, while controlling for endogeneity of female CEOs' and directors' choices. We acquire directorship and CEO information from the Corporate Library data, which covers the period from 2001 to 2010 and contains 171,430 directorships in the United States. Unlike most previous studies based on the US, and using the RiskMetrics database, which only covers large US corporations, our sample enables us to study the relation between gender diversity and performance and corporate decisions across a larger spectrum of firm sizes and over a long period of time.

We find that the percentage of female directors on board is significantly and positively related to firm's ROA and ROE and Tobin's q. The presence of female CEOs, however is associated with significant negative additional effect, which leads to a weak or negative relationship between female CEOs and performance and value. In addition, while female directors are associated positively with acquisitions, raising external equity and dividend payout, female CEO's are less inclined to engage in acquisitions and associated with lower dividend payout. Equity is an expensive source of capital. The

pecking order theory suggests that firms prefer to fund investment projects by using debt first and equity last. The positive relationship between Tobin's Q and percentage of female directors indicates that firms with higher number of women on their boards have higher valuations and hence may find equity financing cheaper.

We also examine the effect of female directors with an advanced degree (PhD) and find that they are negatively related to Tobin's Q, but positively related to debt issues and acquisitions. Finally, we investigate whether increased CEO power, when the CEO is also the chairman of the board, has an effect on the relationships observed between female CEOs and firm value, profitability and decisions. CEO duality for women is associated with higher Tobin's Q, higher acquisition activity and debt issuance.

Combining our results on the female directors' relation with firm performance and corporate decisions our results provide evidence that having a larger number of women on corporate boards is beneficial to firms' profitability and valuation, which supports the regulators' and investors' advocacy for more women on corporate boards. In addition, we also demonstrate that the relationship between women in executive and director positions and firm value and performance, is different depending on the roles women play as well as their educational background. Advanced graduate education seems to lead to overconfidence for female directors, while CEO duality reduces the negative relationship between female CEOs and Tobin's Q, acquisition activity and dividend payout, but does not eliminate it.

Our study adds to the existing literature in three aspects. First, it provides persistent and robust empirical evidence on the relation between female directors and executives and various metrics of firm performance. Second, we are first to explain the

discrepancies in the impact of female directors and executives on firm performance and value by showing that the impacts differ and should not be studied in isolation. Third, unlike previous studies we base our sample on a large number of US firms. Therefore, are results are not limited to large corporations. Fourth, we show that the impact of female directors dominates the impact of female CEOs and hence we present compelling evidence on the benefits of having female directors on the board. Finally, most previous studies suffer from lack of control for endogeneity of the female directors/CEOs, which may be the reason for mixed and inconsistent results. Our study corrects for such bias.

The rest of the paper is structured as follows. We discuss the relevant literature on gender diversity in Section 2. Next, we describe our sample selection, data and methodology in Section 3. Section 4 examines the relation between female directors and CEOs and firm performance and valuation, and presents results from univariate, 2SLS IV and 2SLS IV with fixed effects analyses. In Section 5, we investigate the impact of female directors and CEOs on various corporate decisions, and explain how these decisions in turn impact firm performance and shareholder's value. We conclude in Section 6.

2. Literature Review

The importance of gender diversity for modern corporations is relatively new, but a fast-growing research topic. Ferreira (2010) presents an excellent review of board diversity literature. Note that in our study we focus on gender diversity. In contrast, board diversity is a broader concept that deals with the heterogeneity of board members, including executive vs. outside directors, gender and race characteristics, educational and

functional backgrounds, industry experience and tenure within the company, social connectedness and reputation. Within his discussion of board diversity, Ferreira (Ibid.) turns his attention to women on boards and points out that women have been generally underrepresented on corporate boards, but recent initiatives across various countries, including the US, call for increase of the role of women on corporate boards. When analyzing the characteristics of firms with women on their boards, Ferreira points out that women are much more prevalent to firms in consumer goods as opposed to utilities, and firms in the electronics industry.

2.1 Gender Diversity and Firm Performance

Despite the increase in the percentage of female executives and the presence of women on corporate boards in the US and abroad, the academic empirical evidence on the benefit of female executives and directors is mixed. Some researchers have found a positive link between gender diversity and corporate performance (Carter et al. 2003; Erhardt et al. 2003), while others have found a negative or insignificant link (Rose 2007; Adams and Ferreira 2009; Ahern and Dittmar 2012).

Carter et al. (2003) examine 638 Fortune 1000 firms in 1997 and use simultaneous equations. They find a positive relation between the percentage of women on board and Tobin's q. In their study of 641 Fortune 500 firms from 1998 to 2002, Carter et al. (2010) apply a similar method and find a positive impact of the number of female directors on return on assets, but not a significant impact on Tobin's q. Erhardt et al. (2003) study 112 large firms in the U.S. by using hierarchical regression analysis in two different periods of time – 1993 and 1998, and find a positive link between the fraction of female directors and both return on investment and return on assets.

In contrast to the above studies, a number of studies using foreign samples have found no link between gender diversity and various measures of firm performance. For instance, Francoeur et al. (2008) find a positive, but not statistically insignificant relation between the fraction of female directors and average monthly abnormal returns in 230 Canadian firms. Rose (2007) and Marinova et al. (2010) both fail to find a significant link between gender diversity and Tobin's q for Danish firms. Gregory-Smith et al. (2012) study U.K. firms from 1996 to 2010 and find no significant effect of female directors on either return on assets or return on equity by employing generalized method of moments.

Finally, a number of studies find a negative link between gender diversity and firm performance. Most notably, Adams and Ferreira (2009) examine a sample of 86,714 director level observations in S&P 500, S&P MidCaps, and S&P SmallCap from 1996 to 2003 and find a negative relation between gender diversity and both Tobin's q and return on assets by using instrument variable regressions. Another study by Dobbin and Jung (2011) also finds a negative link between the number of women board members and Tobin's q with 432 Fortune 500 firms by using a pooled, cross-sectional time-series model with fixed firm and year effects. Several recent foreign studies find a negative relation as well. Darmadi (2011) documents a negative effect of female directors on both return on assets and Tobin's q with 169 Indonesian firms in 2007. Minguez-Vera and Martin (2011) find a significant negative relation between female directors and return on equity in a sample of small and medium Spanish enterprises from 1998 to 2003. Ahern and Dittmar (2012) investigate a new law that 40% of Norwegian firms' directors are required to be women and find a significant drop in the stock price at the announcement of the law and a large decline in Tobin's q over the following years.

Based on these studies, it is evident that researchers, using different datasets from various periods in different countries, have failed to reach a conclusive result on the link between gender diversity and firm performance. The results are highly dependent on sample size, time period, country, measures of gender diversity and financial performance, and empirical methods used. In addition, three main issues with existent studies are worth mentioning. First, the samples used in most studies are relatively small, based on relatively short time periods. In contrast, our study uses a large sample spanning ten years, which we hope to provide a more comprehensive and robust picture of the relation between gender diversity and firm performance. Second, although some of the papers use more sophisticated methods, such as simultaneous equations (Carter el al. (2003); Carter el al. (2010); Marinova et al. (2010)), to address the potential endogenity issues, these methods still have biases. For example, simultaneity biases occur when there is a feedback relation between one or more of the independent variables and the dependent variable. This can be corrected by using two-stage least squares with proper instrumental variables. Finally, the effect of female directors is confounded with the documented effect of female CEOs on firm performance, since female CEOs are almost always board directors. Peni (2012) finds a positive relation between the presence of female CEOs and firm performance. Huang and Kisgen (In press) shows that firms with female CEOs and CFOs have lower asset growth, less likely to engage in acquisitions and use debt. Although the effect of female CEOs is inconclusive, similarly to the documented effect of female directors, it is imperative to disentangle these two effects.

2.2 Gender Diversity and Corporate Decisions

Croson and Gneezy (2009) have documented experimental evidence on preference differences between men and women. They find that women are indeed more risk-averse than men in lab settings as well as in investment decisions in the field. Other surveys in economics (Eckel and Grossman 2008) and psychology (Byrnes et al. 1999) confirm this conclusion. They explain the gender difference in risk taking based on differences in emotional reactions to risky situations, confidence, and the interpretation of the risky situation. Jianakoplos and Bernasek (1998) find that as wealth increases, the proportion of wealth, held as risky assets, is estimated to increase by a smaller amount for single women than for single men. Arano et al. (2010) study the risk aversion in terms of retirement asset allocation, and find women faculty are more risk averse than their male spouses. Barber and Odean (2001) study investors' overconfidence by looking at investors' trading behavior, and conclude that men trade 45% more frequently than women, and thus, are more overconfident than women.

Although little is known on the gender difference in directors' risk taking, a stream of research has studied the gender difference in CEO's risk taking. Wanzenried (2008) documents that women lead less risky and faster growing companies. Faccio et al. (2012) find that firms run by female CEOs have lower leverage, less volatile earnings, and a higher chance of survival than firms run by male CEOs. Huang and Kisgen (2012) find that male executives undertake more acquisitions and issue debt more often than female executives. Further, acquisitions and debt issues, made by firms with male executives have lower announcement returns than those made by female executive firms. Levi et al. (2013) shows that female directors are less acquisitive than male directors – each 10% representation of female directors on a corporate board is associated with a

reduction in the number of a company's acquisition bids by 4.7%; female directors are less overconfident than male directors – each 10% of female directors on the bidder board is associated with a reduction in the bid premium by 13.3%.

Finally, prior literature has established risk aversion as a female trait, and research on female CEOs has found a positive relation between female CEOs and firm underinvestment problem (Faccio et al. 2011). Since a female director serves in a governing capacity, she does not have the same incentive to reduce risk beyond firm's value maximizing level. Therefore, while we expect our results for CEO to be consistent with female executives being more risk-averse than male executives, we hypothesize that such risk averseness will not be observed for female directors. Female CEOs are different from female directors in that they have significant fraction of their wealth tied to the firm they govern, both through total compensation and holdings of shares and options. On the other hand female directors have been established to introduce better monitoring and discipline to corporate boards. For example, Adams and Ferreira (2009) show that women on boards have better attendance records and more likely to join monitoring committees. In addition, CEO turnover is more sensitive to stock performance for firms with women on their corporate boards. Therefore, we hypothesize that the effect of women on performance as well as the firm's investment, financing and payout decisions will be different depending on their roles, which lead to different degrees of risk aversion. We examine this conjecture in the empirical analysis.

3. Data and Methodology

We obtain directorship data from the Corporate Library (CL) database. The director's information includes the director's gender, independence, education and special roles, such as CEO and chairperson of the board. Data from CL is available starting from 2001; therefore our sample is based on a period of ten years from 2001 – 2010. Our initial sample contains 322,293 directorships (director-firm-year observations). We merge the directorship information with firm specific information, which is obtained from COMPUSTAT, and with market information, which is from CRSP. We exclude financial and utility firms, since performance of these highly regulated firms would be potentially affected by government regulation. This step yields 251,332 directorship-level observations. Lastly, we require that for each observation we have all necessary financial and market information to conduct the empirical analysis. Our final sample consists of 171,430 directorships in 14,029 firm-years and 2,538 unique firms.

We use the fraction of female directors as the measure of gender diversity on board (Adams and Ferreira (2009); Carter et al (2003)), because it not only measures the presence of female directors, but also provides additional information on the number of female directors. Since we want to control for the effect of female CEOs on firm performance, we create a dummy variable, which is equal to one, if the CEO of the firm is female and zero otherwise. We identify the education background of a director, that is, whether he/she have a PhD/MD degree, by his/her suffix. We create a dummy variable, which is equal to one, if the director is female and has a doctoral degree and zero otherwise. Directors are classified as independent, if they are nonemployee directors with no other relationship with the firm, except their directorship.

Since both female directors and female CEOs suffer from reverse causality and self-selection we use two instrumental variables. Following Huang and Kisgen (2012), we use a gender status equality index, developed by Sugarman and Straus (1987), as our instrumental variable for female directors. Sugarman and Straus (1987) assign scores to gender equality in the economic, political, and legal spheres of life for each of the 50 U.S. states. The scores are combined to create an overall gender equality index, with a minimum of 19.2, indicating low gender equality, and a maximum of 59.9, indicating high gender equality. We assign the score of the state to the firm, if the firm's headquarters is located in that state. It is reasonable to assume that if a state is more friendly to women's equality, it is more likely for firms, headquartered in that state, to hire more female directors (Huang and Kisgen (2012)). And it is unlikely that a state's gender equality would affect firms' performance headquartered in that state, or the decisions made within the firms.

Our second instrument is the state-level ratio of female officers and managers employed in the private sector to total officers and managers employed in the private sector. This ratio is significantly positively correlated with female CEO and exhibits a higher correlation than the equality index, therefore we use the ratio of female senior managers to total senior managers as an instrument for female CEOs.

Table 1 presents the distribution of our sample directors and CEOs from 2001 to 2010. As we can see from Panel A, the number of firms with female directors, female CEOs and female PhD directors have all been increasing over the past 10 years. This is consistent with the increasing attention paid to women in top management positions in the popular press and by investors. Over 70% of the firms have females on their boards in

2010, comparing with only 57% of the firms in 2001. The presence of female CEOs is still low (3.21% in 2010) in spite of the increasing trend. The number of firms with female PhD directors increases from 0 to 215 between 2001 and 2010. Looking more carefully at the number of female directors in the firms with women on their boards in Panel B and Figure 1, we observe that more than one third of the firms still have only one female director. However, interestingly, the percentage of firms with one female director has dropped over the past 10 years, while the percentage of firms with three or more female directors has increased significantly from 3% to 20%. This observation demonstrates the increasing role of women on corporate boards.

For firm performance, we use ROA and ROE as the accounting based measures and Tobin's q as a market-based measure of returns. These measures are consistent with prior literature. ROA is calculated as earnings before interest, taxes, depreciation and amortization divided by total assets. ROE is calculated as net income divided by common equity. Tobin's q is the sum of the market value of equity, book value of debt, and book value of preferred stock divided by the book value of total assets.

Following previous literature (Adams and Ferreira (2009); Anderson et al. (2011)) we include firm size, leverage, tangibility, free cash flow, sales growth, firm risk, and business segments as control variables in our multivariate analysis. Table 2 shows a complete list of definitions of variables used in our study.

Table 3 presents descriptive statistics for the final sample. All firm characteristics variables are winsorized at 1% at each tail to avoid the noise from outliers. Across the entire sample, female directors hold 9% of board seats, which is comparable to 8.5% of board seats in Adam and Ferreira (2009). Comparing with the 16.6% ratio reported by

Catalyst in 2012 for Fortune 500 companies, our number indicates that the ratio of female directors on corporate boards is increasing over the years, and smaller firms have more pronounced gender inequality in the boardroom. The maximum female director's percentage is 66.7%. 2.6% of the firm-years have female CEOs and 8.6% of the firm-years have female PhD directors. Board size ranges from 5 to 27 directors, with the average board comprising of 12 directors. CEO duality is common in the sample; 45.3% of the firms have CEOs that also serve as chairman of the board. The mean of independent directors on the board is 74.7%. This high percentage of director independence is not surprising given the implementation of Sarbanes-Oxley (SOX) in 2002. Firms have on average 5.5 business segments, which is comparable to 5.9 business segments in Adams and Ferreira (2009). Free cash flow (FCF) is 6.2% of total assets, with a standard deviation of 14%. The average firm size is 7.08, which is measured as natural logarithm of total assets, and ranges from 3.76 to 11.26, suggesting that our sample has a broad cross section of firms. Leverage is on average 0.211 with a standard deviation of 0.202, while tangibility has a mean of 0.255 with a standard deviation of 0.218. These numbers compare with corresponding numbers of 0.215 (0.216) and 0.273 (0.213) in Anderson et al. (2011). Overall, our dataset shows patterns that are generally in agreement with other similar studies on board diversity.

4. Female Directors and CEOs and Firm Performance and Value

4.1 Univariate Analysis

In Table 4, we present difference of mean tests for both firm and board characteristics and in different industries between firm-years with and without female

directors, between firm-years with three and more female directors and without female directors, and between firm-years with and without female CEOs.

Panel A compares firms with different numbers of female directors. Based on the univariate results, firms with female directors tend to be larger, have more business segments, higher free cash flow ratio, less firm risk, higher leverage, lower sales growth, and higher tangibility, than firms without female directors. With respect to firm performance, firms with female directors have higher ROE and ROA, but lower Tobin's q. This finding is the same as the univariate result from Adams and Ferreira (2009). In addition, Table 4 shows that larger boards with CEO duality, more independent directors, and more PhD directors are more likely to have female directors. Industries, such as consumer nondurables (food, tobacco, textiles, apparel, leather, toys), chemicals and allied products, telephone and television transmission, wholesale, retail, and some service, healthcare, medical equipment, and drugs, tend to attract more female directors. Industries, such as manufacturing (machinery, trucks, planes, paper, printing), oil, gas, and coal extraction and products, business equipment (computers, software, and electronic equipment), and other (mines, construction, transportation, hotels, bus services, entertainment), tend to attract more male directors. The comparisons between firm-years with three or more female directors and firm-years without female directors yield similar, but even stronger conclusions.

Despite that the results from the univariate analysis may not be robust or trustworthy, Table 4 illustrates that the characteristics of firms and boards with vs. without female directors are very different and cannot be ignored. Therefore, it is important to take these factors into consideration when we examine the relation between

female directors and firm performance. Moreover, these comparisons also suggest that female directors' self-selection could be influenced by firm, board and industry characteristics, so it is important to address the endogeneity issue.

Panel B of Table 4 shows comparisons between firms with and without female CEOs. Firms with female CEOs are less complex and tangible. Firms with larger boards and higher number of female directors are associated with a higher incidence of female CEOs. Similarly to the observed relationships for female directors, female CEOs are more likely to work in industries such as, consumer nondurables, telephone and television transmission, wholesale, retail and some services, and are less likely to work in industries such as, consumer durables (cars, TVs, furniture, household appliances), manufacturing (machinery, trucks, planes, paper, printing), oil, gas, and coal extraction and products, business equipment, and other. However, we do not observe significant difference between firms with and without female CEOs in their performance (with exception of ROA), Tobin's Q, acquisition activity, debt issuance and leverage. Overall, firms with female CEOs do not differ from firms with male CEOs as much as firms with female directors vs. firms with no female directors.

4.2 Multivariate Analysis

We employ a 2SLS with instrumental variable approach. to produce consistent estimates for the association between board diversity and firm performance by controlling for self-selection. This procedure also allows controlling for a potential endogeneity problem due to an omitted variable bias. For example, firms that are more progressive may appoint more female directors to their board and have better

performance. Ignoring this fact will bias our estimates. In addition we also use fixed effects 2SLS, to account for omitted variable bias.

Table 5, presents the results from the first stage predicting the fraction of female directors. We employ two different models: (1) a generalized linear model with robust standard errors and clusters by firms (2) GEE population-averaged model with fixed effects, robust standard errors, clustered by firm ID. The dependent variable is the fraction of female directors on boards in both models. Following Huang and Kisgen (2012), we use a gender status equality index, developed by Sugarman and Straus (1987), as our instrumental variable. Sugarman and Straus (1987) assign scores to gender equality in the economic, political, and legal spheres of life for each of the 50 U.S. states. For example, the economic equality indicators include civilian labor force, professional and technical occupations, managers and administrators, employed labor force, median income, loans by small business administration, amount loaned by S.B.A., and above-poverty level households. The political equality indicators include congress, state senate, state house, judges, mayors, and governing boards. The legal equality indictors include fair employment practice law, fair employment personal suits, equal pay law, education law, etc. The scores are combined to create an overall gender equality index, with a minimum of 19.2, indicating low gender equality, and a maximum of 59.9, indicating high gender equality. We assign the score of the state to the firm, if the firm's headquarters is located in that state. It is reasonable to assume that if a state is more friendly to women's equality, it is more likely for firms, headquartered in that state, to hire more female directors (Huang and Kisgen (2012)). And it is unlikely that a state's gender equality would affect firms' performance headquartered in that state, or the

decisions made within the firms. Therefore, we believe the gender status equality index is a good instrument to control for potential endogeneity issues.

Table 5 reports the regression results of predicting the percentage of female directors on board. Model 1 includes year and industry fixed effects, whereas Model 2 controls for year and firm fixed effects. The main instrumental variable, equality index, is positively related to percentage of female directors and significant at the 1% level in both models. In addition the F-test value of 106.163 and 87.504 in Model 1 and 2, respectively, indicate that the instrumental model successfully predicts variation in the percent of women on corporate boards. The regression statistics also show that women directors are more likely to be hired at larger, but less complex firms (based on number of business segments), with lower sale growth and less firm risk. The board tends to be larger, which is likely correlated with females joining the boards of larger firms. Although not included here, we also control for leverage, but find it that it is not related to the percentage of female directors. These results are generally consistent with the findings of Faccio et al. (2012). We also confirm our previous observation that female directors are more likely to work in industries, such as consumer nondurables, chemicals and allied products, wholesale, retail, and some services, and healthcare, medical equipment, and drugs, and are less likely to work in industries, such as oil, gas, and coal extraction and products and business equipment.

Table 6 presents the results determining the probability of having a female CEO. Model 1 includes year and industry fixed effects, whereas Model 2 controls for year and firm fixed effects. We use as the main instrumental variable, the state-level ratio of female officers and managers employed in the private sector to total officers and

managers employed in the private sector. This ratio is significantly positively correlated with female CEO and exhibits a higher correlation than equality index. The results show that female senior manager in the private sector (PS) is significantly positively related to percentage of female CEOs in both models. In addition the Wald Chi-squared statistics of 116.17 and 79.82 in Model 1 and 2, respectively, is significant at the 1% level or less. Female directors are positively related to female CEOs, which is intuitive, since CEOs also serve on the board of directors. CEO duality is positively related while independent directors and FCFAT are negatively related to the probability of a firm having woman as a CEO. After obtaining the predicted values for female percentage directors and female CEOs from Tables 5 and 6, we perform a multivariate analysis by regressing the firm performance variables on the predicted values of percent female directors and female CEOs and a set of control variables. All the independent variables are lagged by one year. In Tables 7 through 11, in Models 1 and 2 we control for predicted female directors percentage and female CEO from Model 1 in Table 5 and Model 1 in Table 6, respectively. We also control for fixed industry effects and year effects, and standard errors are clustered by firm and corrected for heteroskedasticity. In Models 3 and 4 in Tables 7 thought 11 we control for predicted female directors percentage and female CEO from Model 2 in Table 5 and Model 2 in Table 6, respectively. We also control for fixed firm and year effects; standard errors are clustered by firm and corrected for heteroskedasticity. We perform four different models for each measure of firm performance. The first model focuses on the instrumented female director ratio only, the second model adds the instrumented female CEO presence, and interaction term between CEO duality and instrumented female CEO; in Models 3 and 4, we conduct fixed effects

models. By examining female directors separately and the additional effect of female CEOs, we are able to determine not only whether or not female directors have impact on firm performance, but also distinguish whether the impact is coming from female CEO or from non-executive female directors, as well as reveal any differences in impact on profitability and firm decisions between female directors and CEOs

In Table 7, Panels A and B presents the results when the dependent variable is ROA and ROE, respectively. Models (1) and (2) show that there is no significant relationship between female directors and firm performance, while based on Model 2 in both panels female CEOs are associated negatively with performance. However, after controlling for firm fixed effects in Models 3 and 4, female directors are positively associated with profitability, while the negative effect of female CEOs persists. These results support our hypothesis of the differential effect of women, depending on their roles executives vs. directors. We also include PhD directors (dummy variable) and an interaction between PhD directors and the instrumented female directors in Models 2 and 4. After controlling for fixed effects, we do not find evidence that directors with PhD are related to profitability. Besides the key variables of interest, there are some interesting relationships, we observe. For example, board size is generally negative and significant in the ROE FE models. This is consistent with the literature. Cannella et al. (2008) have summarized a large body of literature on group size and suggest that larger groups can be unwieldy (Gladstein (1984)), are too diverse to reach consensus (Shaw (1981)), and increase conflict (O'Reilly, Caldwell, and Barnett (1989)), while smaller groups may be too homogeneous (Jackson et al. (1991)) and have limited information-processing capability (Haleblian and Finkelstein (1993)). Similarly, Yermack (1996) finds an inverse

relationship between Tobin's q and board size, which confirms his hypothesis that smaller boards exercise more efficient oversight and are associated with higher market valuation.

Independent directors are also negatively related to profitability. Prior research identifies independent directors as important monitoring agents (Fama and Jensen 1983). For example, Rosenstein and Wyatt (1997) document a positive market reaction to the appointment of outside directors. However, while outside directors may be efficient monitors, they may lack the necessary expertise, and a board dominated with outsiders may be associated with lower profitability and value.

In Table 8, we examine the relationship of female directors and CEOs with Tobin's Q. Our results are similar to our findings in Table 7, but much stronger. Female directors are significantly positively related to Tobin's Q, while the additional effect of female CEOs is negative. Note that although, not reported here for brevity when including female CEO, without controlling for female directors the coefficient on female CEO is still negative and significant. This results strongly confirm our hypothesis that female CEOs are related differently to profitability and value than female directors. Overall, female directors are associated positively to profitability and firm value, while female CEOs exhibit a negative relationship. Next we examine the relations of female CEOs and directors with various corporate decisions, in effort to shed light in the behavior of these groups, which may be leading to the opposing effects on profitability and value.

5. Female Directors and CEOs and Corporate Decisions

Unlike firm performance, which relation with gender diversity may be "complex and indirect" (Milliken 1999), financing, investment, and payout decisions, can demonstrate the direct impact of directors, since major corporate decision need to be approved by the board of directors.

5.1 Financing Decisions

In table 9, we examine whether firms with more female directors and CEOs make different financing decisions compared to firms with fewer female directors and with male CEOs. Panel A and B present the results for debt and equity issuance, respectively. Models 1 and 2 present the second stage of 2SLS IV model with industry and year fixed effects. Models 3 and 4 conduct firm fixed effects regressions. Our results show that after controlling to firm fixed effects female directors are associated positively both, with debt and equity issuance, however their relationship with equity issuance is significant at the 1% level, while in the debt issuance model it is only significant at the 10% level, and only in the model controlling for female CEOs. We conclude that female directors are associated with higher issuance of equity. Female CEOs although generally negatively associated, both of debt and equity issuance, are not related significantly to either financing decision.

5.2 Investment Decisions

Next, we test whether firms with more female directors and with female CEOs make different investment decisions compared to firms with fewer female directors and with male CEO. More particularly, we focus on mergers and acquisitions capital expenditure, which are among the largest and most important investment decisions. Panel

A in Table 10 shows the impact of female directors and CEOs on external acquisitions[1]. Jensen (1986) posits the free cash flow hypothesis that managers realize large personal gains from empire building and predicts that firms with abundant cash flows, but few profitable investment opportunities are more likely to make value-destroying acquisitions. Based on Model 4 in Panel A, we find that firms with more female directors indeed have higher free cash flows and undertake more acquisitions than firms with fewer female directors. However, female CEOs are negatively related to acquisitions. Huang and Kisgen (2012) reach a similar conclusion in CEO study that male executives undertake more acquisitions.

Panel B of Table 10 tests the link between female directors and CEOs and internal investment. We do not find significant relationship between female directors and CEOs an d capital expenditures after controlling for firm fixed effects.

5.3 Payout Policy

Payout policy is important to study because the free cash flow problem is one of the major concerns in corporate governance. Firm managers can waste free cash flow in a way that does not maximize shareholder wealth. Dividends can mitigate this problem and conserve value for the shareholders (Easterbrook 1984; DeAngelo et al. 2006). In Table 11, we show that firms with higher percentage of female directors pay higher dividends than firms with fewer female directors. This is consistent with Byoun et al.'s (2011) finding that firms with diverse boards are more likely to pay dividends and tend to pay larger dividends than those with non-diverse boards. However, we also find that firms

[1] We obtain M&A data from SDC Platinum.

with female CEOs are negatively related to dividend payout. This could be explained by firms with female CEOs having lower profitability.

6. Conclusion

There is an ongoing debate about increasing the percentage of female directors on corporate boards. Existing research has offered inconsistent evidence on the benefits of having female directors and CEOs for modern corporations. We investigate this issue with a comprehensive dataset, controlling for the endogeneity of female CEOs and directors using panel dataset with firm fixed effects and utilizing an instrumental variable approach. Our findings show that female directors are positively related to firm's profitability and Tobin's q. However, these effects are significantly reduced for female CEOs. In addition, while female directors are associated positively with acquisitions, raising external finance and dividend payout, female CEO's are less inclined to engage in acquisitions and associated with lower dividend payout. Our study presents evidence that the impact of women is different based on their roles in organizations. The relationships observed between female CEOs and firm performance and investment behavior are consistent with the behavioral literature and the hypothesis that more risk-averse female executives are associated with undertaking lower risk projects that realize subsequent lower returns. However, the results for female directors suggest that women on board do not exhibit such risk averseness and are beneficial for firm profitability and value. Combining our results on the female directors' relation with firm performance and corporate decisions our results provide evidence that having a larger number of women on corporate boards is beneficial to firms' profitability and valuation, which supports the regulators' and investors' advocacy for more women on corporate boards. In addition, we

also demonstrate that the relationship between women in executive and director positions and firm value and performance, is different depending on the roles women play as well as their educational background.

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Table 1 Distribution of Female Directors and CEOs 2001-2010

This table presents the distribution of our sample directors and CEOs from 2001 to 2010. Panel A reports the number and percentage of firms in our sample that have at least one female director, have female CEO, and have female directors with PhD degree, respectively. Panel B breaks down the sample by the number of female directors that the firms have. Percentages are reported in parentheses.

Panel A: Firms by female directors, female CEO, and female PhD directors.

Year	# of firms	Firms have female directors	Firms have a female CEO	Firms have female PhD directors
2001	816	463	3	0
		(0.5674)	(0.0037)	(0.0000)
2002	863	534	15	0
		(0.6188)	(0.0174)	(0.0000)
2003	955	628	20	73
		(0.6576)	(0.0209)	(0.0764)
2004	1136	705	30	88
		(0.6206)	(0.0264)	(0.0775)
2005	1184	746	29	101
		(0.6301)	(0.0245)	(0.0853)
2006	1652	1093	46	164
		(0.6616)	(0.0278)	(0.0993)
2007	1758	1180	48	183
		(0.6712)	(0.0273)	(0.1041)
2008	1826	1235	52	186
		(0.6763)	(0.0285)	(0.1019)
2009	1936	1302	61	197
		(0.6725)	(0.0315)	(0.1018)
2010	1903	1335	61	215
		(0.7015)	(0.0321)	(0.1130)

Panel B: Firms by the number of female directors.

Year	# of firms	Firms have no female director	Firms have one female director	Firms have two female directors	Firms have three plus female directors
2001	816	353	315	122	26
		(0.4326)	(0.3860)	(0.1495)	(0.0319)
2002	863	329	350	147	37
		(0.3812)	(0.4056)	(0.1703)	(0.0429)
2003	955	327	370	191	67
		(0.3424)	(0.3874)	(0.2000)	(0.0702)
2004	1136	431	437	209	59
		(0.3794)	(0.3847)	(0.1840)	(0.0519)
2005	1184	438	450	238	58
		(0.3699)	(0.3801)	(0.2010)	(0.0490)
2006	1652	559	548	327	218
		(0.3384)	(0.3317)	(0.1979)	(0.1320)
2007	1758	578	585	328	267
		(0.3288)	(0.3328)	(0.1866)	(0.1519)
2008	1826	591	572	347	316
		(0.3237)	(0.3133)	(0.1900)	(0.1731)
2009	1936	634	584	366	352
		(0.3275)	(0.3017)	(0.1890)	(0.1818)
2010	1903	568	573	379	383
		(0.2985)	(0.3011)	(0.1992)	(0.2013)

Figure 1 Distribution of Female Directors 2001-2010

This figure shows the distribution of our sample by number of female directors that the firms have from 2001 to 2010.

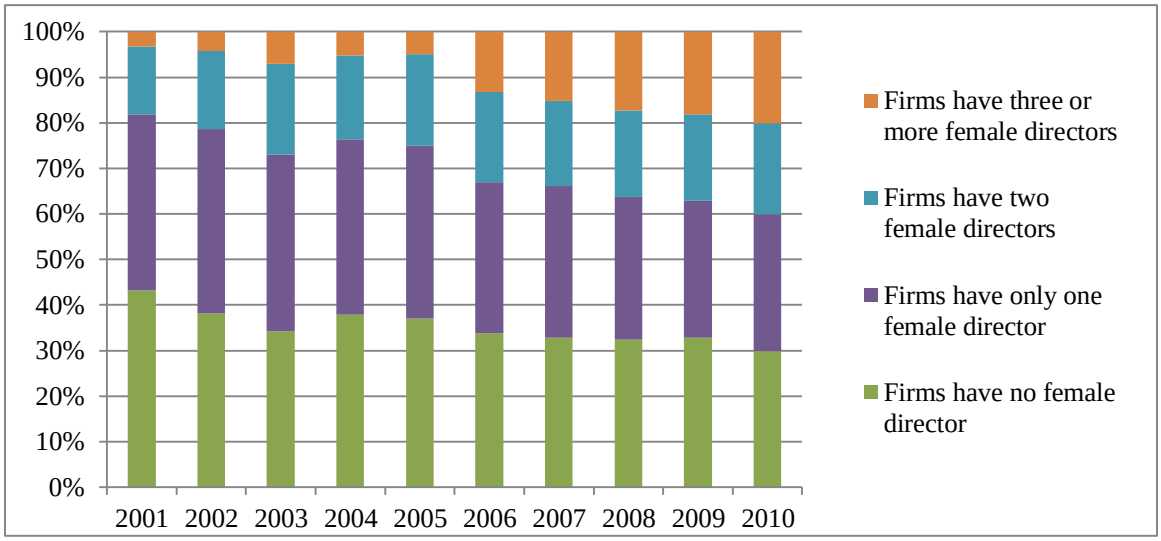

Table 2 Variables Definitions

This table records the definitions of all the variables presented in this paper.

Firm Characteristics	
Acquisition	Acquisitions as a fraction of total assets.
Business Segments	The number of four-digit SIC codes that the firm operates within.
CAPEX	Capital expenditures as a fraction of total assets.
Debt Issuance	The logarithm of long-term debt issuance.
Dividend	Dividends as a fraction of total assets.
Equity Issuance	The logarithm of sale of common and preferred stock.
FCFAT	as a fraction of total assets.
Firm Risk	The standard deviation of previous 60-month stock returns.
Firm Size	The logarithm of total assets.
Leverage	The ratio of book value of long-term and short-term debts to book value of total assets.
R&D	Research and development expense as a fraction of total assets.
ROA	Earnings before interest, taxes, depreciation and amortization divided by total assets.
ROE	Net income divided by common equity.
Sale Growth	The percentage change in sales.
Tangibility	The ratio of total property, plant and equipment to total assets.
Tobin's Q	The sum of the market value of equity, the book value of debt, and the book value of preferred stock divided by the book value of total assets.
Board Characteristics	
Board Size	The total number of directors sitting on the board.
CEO Age	The age of the CEO of the company.
CEO Duality	A dummy variable that is equal to one if CEO is also the chairman of the board; zero, otherwise.
Female CEO	A dummy variable that is equal to one if CEO of the firm is a female; zero, otherwise.
Female Directors	The ratio of the number of female directors to board size.
Independent Directors	The ratio of the number of independent directors to board size. Independent directors are identified as nonemployee directors with no other relationship with the firm except their directorship.
PhD Directors	A dummy variable that is equal to one if at least one director has a PhD/MD degree; zero, otherwise.
Instrumental Variables	
Equality Index	The state-level gender equality index proposed by Sugarman and Straus (1988).
Female Manager in PS	A state-level ratio of female officers and managers employed in the private sector to total officers and managers employed in the private sector.

Table 3 Summary Statistics

This table presents the summary statistics of our sample. It consists of an unbalanced panel of 14029 firm-year level observations from 2001 to 2010. The definition of each variable is listed in Table 2. All firm characteristics are winsorized at 1% at each side.

Variables	N	Mean	Std	Min	Max
Firm Characteristics					
Acquisition	14029	0.121	0.353	-0.005	2.408
Business Segments	14029	5.505	3.498	1.000	17.000
Debt Issuance	14029	2.525	2.909	-0.916	8.711
Equity Issuance	14029	1.828	2.115	-3.576	6.637
FCFAT	14029	0.062	0.140	-0.623	0.362
Firm Risk	14029	0.140	0.064	0.048	0.364
Firm Size	14029	7.076	1.590	3.756	11.26
Leverage	14029	0.211	0.202	0.000	0.930
Sale Growth	14029	0.095	0.270	-0.565	1.413
Tangibility	14029	0.255	0.218	0.008	0.887
Tobin's Q	14029	1.686	1.181	0.350	6.776
CAPEX	13996	0.050	0.053	0.002	0.302
Dividend	13950	0.010	0.020	0.000	0.128
ROE	13549	0.015	0.439	-2.644	1.020
ROA	13474	0.112	0.134	-0.563	0.400
R&D	9203	0.068	0.098	0.000	0.584
Board Characteristics					
Board Size	14029	12.22	4.680	5.000	27.000
CEO Age	12711	54.63	7.190	39.000	74.000
CEO Duality	14029	0.453	0.498	0.000	1.000
Female CEO	14029	0.026	0.159	0.000	1.000
Female Directors	14029	0.090	0.085	0.000	0.667
Female PhD Directors	14029	0.086	0.280	0.000	1.000
Independent Directors	14029	0.747	0.111	0.000	1.000
PhD Directors	14029	0.338	0.473	0.000	1.000
Instrumental Variables					
Equality Index	14029	44.084	8.129	19.200	59.900
Female Manager in PS	14060	0.356	0.026	0.269	0.465

Table 4 Univariate Analysis

This table shows comparisons of means of firm and board characteristics for firm-years with female directors to firm-years without female directors, for firm-years with three or more female directors to firm-years without female directors (Panel A), and for firm-years with female CEO to firm-years with male CEO (Panel B). The definition of each variable is listed in Table 2. All firm characteristics are winsorized at 1% at each side. T-stats are reported in parentheses.

Panel A: Comparisons of firms with female directors to those without.

Variables	(1) Firm-years with female directors n=9221	(2) Firm-years with three or more female directors n=1783	(3) Firm-years without female directors n=4808	(4) Difference (1)-(3)		(5) Difference (2)-(3)	
Firm Characteristics							
Acquisition	0.1117	0.0798	0.1381	-0.0264	***	-0.0583	***
				(-4.03)		(-6.90)	
Business Segments	5.6803	6.3236	5.1699	0.5104	***	1.1537	***
				(8.36)		(11.38)	
CAPEX	0.0473	0.0458	0.0546	-0.0073	***	-0.0088	***
				(-7.07)		(-6.81)	
Debt Issuance	2.8121	3.5470	1.9742	0.8378	***	1.5727	***
				(17.14)		(18.22)	
Dividend	0.0117	0.0174	0.0073	0.0044	***	0.0101	***
				(12.40)		(16.29)	
Equity Issuance	2.0571	2.4694	1.3884	0.6687	***	1.0810	***
				(18.57)		(17.28)	
FCFAT	0.0675	0.0792	0.0501	0.0174	***	0.0290	***
				(6.81)		(8.13)	
Firm Risk	0.1284	0.1086	0.1612	-0.0327	***	-0.0526	***
				(-28.30)		(-32.70)	
Firm Size	7.4279	8.2309	6.4013	1.0266	***	1.8296	***
				(41.42)		(41.43)	
Leverage	0.2232	0.2523	0.1887	0.0344	***	0.0636	***
				(9.47)		(11.45)	
R&D	0.0602	0.0396	0.0827	-0.0225	***	-0.0431	***
				(-10.28)		(-15.28)	
ROA	0.1179	0.1385	0.0945	0.0233	***	0.0440	***
				(9.13)		(12.85)	
ROE	0.0385	0.0973	-0.0284	0.0669	***	0.1257	***
				(8.22)		(10.72)	
Sale Growth	0.0850	0.0565	0.1147	-0.0297	***	-0.0582	***
				(-5.83)		(-8.73)	
Tangibility	0.2576	0.2709	0.2500	0.0076	*	0.0209	***
				(1.90)		(3.70)	
Tobin's Q	1.6475	1.5545	1.7590	-0.1115	***	-0.2045	***
				(-5.20)		(-6.80)	

Table 4, Panel A (Continued)

Board Characteristics							
Board Size	13.5293	17.9523	9.7107	3.8186	***	8.2416	***
				(56.45)		(64.58)	
CEO Duality	0.4635	0.4616	0.4318	0.0317	***	0.0298	**
				(3.59)		(2.16)	
Independent Director	0.7609	0.7711	0.7200	0.0409	***	0.0512	***
				(20.23)		(18.73)	
PhD Director	0.3816	0.5104	0.2540	0.1277	***	0.2564	***
				(15.84)		(19.13)	
Instrumental Variables							
Equality Index	44.2635	44.5291	43.7410	0.5225	***	0.7881	***
				(3.49)		(3.52)	
Industry Dummies							
Consumer NonDurables	0.0837	0.1514	0.0376	0.0461	***	0.1138	***
				(11.57)		(12.75)	
Consumer Durables	0.0296	0.0258	0.0272	0.0024		-0.0014	
				(0.80)		(-0.33)	
Manufacturing	0.1445	0.1082	0.1460	-0.0016		-0.0378	***
				(-0.25)		(-4.22)	
Oil, Gas, and Coal Extraction and Products	0.0384	0.0286	0.0782	-0.0398	***	-0.0496	***
				(-9.13)		(-8.97)	
Chemicals and Allied Products	0.0485	0.0628	0.0189	0.0295	***	0.0439	***
				(9.92)		(7.23)	
Business Equipment	0.1796	0.0981	0.3270	-0.1474	***	-0.2288	***
				(-18.75)		(-23.41)	
Telephone and Television Transmission	0.0372	0.0516	0.0316	0.0056	*	0.0200	***
				(1.74)		(3.44)	
Wholesale, Retail, and Some Services	0.1651	0.2283	0.0807	0.0844	***	0.1476	***
				(15.31)		(13.80)	
Healthcare, Medical Equipment, and Drugs	0.1333	0.1172	0.1009	0.0324	***	0.0163	*
				(5.78)		(1.86)	
Other	0.1402	0.1279	0.1518	-0.0116	*	-0.0240	**
				(-1.84)		(-2.53)	

Table 4, Panel B: Comparisons of firms with female CEO to those with male CEO

Variables	(1) Firm-years with female CEO n=365	(2) Firm-years with male CEO n=13664	(3) Difference (1)-(2)	
Firm Characteristics				
Acquisition	0.1329	0.1204	0.0124	
			(0.57)	
Business Segments	4.9041	5.5214	-0.6173	***
			(-3.68)	
CAPEX	0.0453	0.0499	-0.0046	**
			(-1.98)	
Debt Issuance	2.5276	2.5249	0.0027	
			(0.02)	
Dividend	0.0129	0.0101	0.0028	**
			(2.19)	
Equity Issuance	1.4625	1.8377	-0.3752	***
			(-3.18)	
FCFAT	0.0662	0.0614	0.0048	
			(0.57)	
Firm Risk	0.1354	0.1398	-0.0044	
			(-1.35)	
Firm Size	7.0523	7.0767	-0.0245	
			(-0.25)	
Leverage	0.1989	0.2117	-0.0128	
			(-1.18)	
R&D	0.0604	0.0680	-0.0076	
			(-1.21)	
ROA	0.0956	0.1102	-0.0147	*
			(-1.91)	
ROE	-0.0087	0.0160	-0.0247	
			(-0.89)	
Sale Growth	0.0779	0.0956	-0.0177	
			(-1.28)	
Tangibility	0.2197	0.2559	-0.0362	***
			(-3.91)	
Tobin's Q	1.6669	1.6862	-0.0193	
			(-0.28)	
Board Characteristics				
Board Size	13.7041	12.1810	1.5231	***
			(5.10)	
CEO Age	53.0706	54.6775	-1.6070	***
			(-5.38)	
CEO Duality	0.4603	0.4524	0.0078	
			(0.30)	
Female Directors	0.2027	0.0865	0.1163	***
			(20.12)	
Independent Directors	0.7520	0.7467	0.0053	
			(1.06)	
PhD Directors	0.3671	0.3371	0.0300	
			(1.17)	

Table 4, Panel B (Continued)

Instrumental Variables				
Female Manager in PS	0.3646	0.3563	-0.0083	***
			(-5.96)	
Industry Dummies				
Consumer NonDurables	0.1041	0.0670	0.0371	**
			(2.30)	
Consumer Durables	0.0000	0.0296	-0.0296	***
			(-20.40)	
Manufacturing	0.0959	0.1463	-0.0504	***
			(-3.21)	
Oil, Gas, and Coal Extraction and Products	0.0055	0.0533	-0.0478	***
			(-11.06)	
Chemicals and Allied Products	0.0384	0.0383	0.0000	
			(0.00)	
Business Equipment	0.1808	0.2314	-0.0506	**
			(-2.47)	
Telephone and Television Transmission	0.0575	0.0347	0.0228	*
			(1.86)	
Wholesale, Retail, and Some Services	0.2767	0.1324	0.1443	***
			(6.11)	
Healthcare, Medical Equipment, and Drugs	0.1260	0.1221	0.0040	
			(0.22)	
Other	0.1151	0.1450	-0.0299	*
			(-1.76)	

***, **, * Significant at the 1, 5, and 10 percent levels, respectively.

Table 5 Regression Analysis Determining Percentage of Female Directors

This table presents regression analysis of predicting the percentage of female directors on board. The dependent variable in both models is the percentage of female directors. Equality index is the state-level gender equality index proposed by Sugarman and Straus (1988). The definition of other independent variables is listed in Table 2. Model (1) does not include firm fixed effects while model (2) does. Both models are corrected for heteroskedasticity. P-values are reported in parentheses.

	(1)		**(2)**	
Equality Index	0.0120	***	0.0142	***
	(0.000)		(0.000)	
Board Size	0.0368	***	0.0140	***
	(0.000)		(0.000)	
Independent Directors	0.8019	***	0.4576	***
	(0.000)		(0.000)	
Firm Size	0.0729	***	0.1023	***
	(0.000)		(0.000)	
Tobin's q	0.0320	*	0.0039	
	(0.057)		(0.584)	
FCFAT	0.3379	***	0.0577	
	(0.007)		(0.325)	
Sale Growth	-0.1943	***	-0.0475	***
	(0.000)		(0.002)	
Firm Risk	-1.4135	***	-0.7350	***
	(0.000)		(0.000)	
Business Segments	-0.0087		-0.0060	**
	(0.139)		(0.048)	
Consumer Non-Durables	0.4262	***		
	(0.000)			
Consumer Durables	-0.0165			
	(0.896)			
Manufacturing	-0.0828			
	(0.280)			
Oil, Gas, and Coal Extraction and Products	-0.3885	***		
	(0.001)			
Chemicals and Allied Products	0.2247	**		
	(0.042)			
Business Equipment	-0.1911	**		
	(0.011)			
Telephone and Television Transmission	0.0517			
	(0.673)			
Wholesale, Retail, and Some Services	0.3826	***		
	(0.000)			
Healthcare, Medical Equipment, and Drugs	0.2147	***		
	(0.002)			
Intercept	-4.4117	***	-4.1226	***
	(0.000)		(0.000)	
Year Dummies	Yes		Yes	
Firm Fixed Effects	No		Yes	
N	14029		13249	
F Statistic	106.163	***	87.504	***

***, **, * Significant at the 1, 5, and 10 percent levels, respectively.

Table 6 Regression Analysis Determining Female CEOs

This table presents regression analysis of predicting whether the CEO of the firm is female or male. The dependent variable in both models is a binary variable which equals 1 if CEO is female and 0 otherwise. Female Manager in PS is the ratio of female officers and managers employed in the private sector to total officers and managers employed in the private sector. The definition of other independent variables is listed in Table 2. Model (1) does not include firm fixed effects while model (2) does. Both models are corrected for heteroskedasticity. P-values are reported in parentheses.

	(1)		**(2)**	
Instrumented Female Directors			11.0543	**
			(0.011)	
Female Manager in PS	3.3433	**	2.7197	*
	(0.042)		(0.080)	
Board Size	0.0314	***	0.0136	
	(0.001)		(0.189)	
Independent Directors	0.2441		-0.5603	*
	(0.557)		(0.099)	
CEO Duality	0.0709		0.1944	**
	(0.417)		(0.016)	
Firm Size	-0.0409		-0.0787	
	(0.311)		(0.180)	
Tobin's q	0.0000		-0.0252	
	(0.999)		(0.367)	
FCFAT	0.1863		-0.4600	**
	(0.538)		(0.034)	
Sale Growth	-0.0984		-0.0609	
	(0.307)		(0.293)	
Tangibility	-0.3970	*	-0.2669	
	(0.090)		(0.179)	
Business Segments	-0.0188		-0.0176	
	(0.166)		(0.124)	
Consumer NonDurables	0.2994			
	(0.119)			
Manufacturing	0.0018			
	(0.992)			
Oil, Gas, and Coal Extraction and Products	-0.4400			
	(0.203)			
Chemicals and Allied Products	0.1473			
	(0.621)			
Business Equipment	0.0133			
	(0.936)			
Telephone and Television Transmission	0.3264			
	(0.154)			
Wholesale, Retail, and Some Services	0.4618	***		
	(0.002)			
Healthcare, Medical Equipment, and Drugs	0.1102			
	(0.550)			
Intercept	-3.4356	***	-2.9310	***
	(0.000)		(0.000)	
Year Dummies	Yes		Yes	
Firm Fixed Effects	No		Yes	
N	14026		12709	
Wald Chi-squared Statistic	116.170	***	79.820	***

***, **, * Significant at the 1, 5, and 10 percent levels, respectively.

Table 7 Firm Performance

This table presents the results of the second stage from 2SLS regression analysis of firm financial performance. The dependent variables are ROA and ROE. All the independent variables are lagged by one year. The definition of each independent variable is listed in Table 2. The specifications in Model (1) and (2) include industry dummies. The specifications in Model (3) and (4) include firm fixed effects. All specifications include year dummies. All models are corrected for heteroskedasticity. P-values are reported in parentheses.

Panel A: ROA

	Model (1)		**Model (2)**		**Model (3)**		**Model (4)**	
Instrumented Female Directors	0.0807		0.1725		1.2151	*	1.8855	**
	(0.521)		(0.193)		(0.093)		(0.035)	
Instrumented Female CEO			-0.4390	***			-0.3956	
			(0.005)				(0.113)	
Board Size	-0.0011	**	-0.0006		-0.0007		-0.0007	
	(0.040)		(0.333)		(0.514)		(0.484)	
Independent Directors	-0.0280	**	-0.0291	**	-0.0300		-0.0550	*
	(0.038)		(0.031)		(0.239)		(0.086)	
PhD Directors	-0.0252	***	-0.0265	***	-0.0024		-0.0056	
	(0.000)		(0.000)		(0.865)		(0.692)	
Instrumented Female	0.1441	**	0.1542	**	-0.0217		0.0121	
*Directors*PhD Directors*	(0.020)		(0.013)		(0.869)		(0.928)	
CEO Duality	0.0038	*	0.0042		-0.0001		0.0026	
	(0.093)		(0.211)		(0.958)		(0.448)	
*CEO Duality*Instrumented*			0.0445				0.0536	
Female CEO			(0.646)				(0.638)	
Firm Size	0.0043	***	0.0028	*	-0.0348	***	-0.0403	***
	(0.002)		(0.076)		(0.000)		(0.000)	
Leverage	0.0315	***	0.0319	***	0.0286	**	0.0292	**
	(0.000)		(0.000)		(0.014)		(0.012)	
Tangibility	0.0633	***	0.0535	***	-0.0316		-0.0392	*
	(0.000)		(0.000)		(0.179)		(0.098)	
FCFAT	0.6005	***	0.6020	***	0.1792	***	0.1663	***
	(0.000)		(0.000)		(0.000)		(0.000)	
Sale Growth	0.0127	**	0.0119	**	0.0313	***	0.0316	***
	(0.024)		(0.035)		(0.000)		(0.000)	
Firm Risk	-0.3817	***	-0.3696	***	-0.0247		-0.0012	
	(0.000)		(0.000)		(0.665)		(0.984)	
Business Segments	-0.0003		-0.0007	*	-0.0008		-0.0010	
	(0.388)		(0.097)		(0.180)		(0.107)	
Intercept	0.1154	***	0.1243	***	0.2895	***	0.2997	***
	(0.000)		(0.000)		(0.000)		(0.000)	
Industry Dummies	Yes		Yes		No		No	
Year Dummies	Yes		Yes		Yes		Yes	
Firm Fixed Effects	No		No		Yes		Yes	
N	13474		13471		13474		13471	
F Statistic	109.750	***	103.730	***	17.890	***	16.460	***

Table 7 Firm Performance (Continued)

Panel B: ROE								
	Model (1)		**Model (2)**		**Model (3)**		**Model (4)**	
Instrumented Female Directors	0.4979		0.7310		7.6499	**	12.4449	***
	(0.339)		(0.170)		(0.027)		(0.001)	
Instrumented Female CEO			-1.1614	**			-2.9283	**
			(0.027)				(0.011)	
Board Size	-0.0031		-0.0016		-0.0090	**	-0.0095	**
	(0.109)		(0.408)		(0.045)		(0.035)	
Independent Directors	-0.0365		-0.0391		-0.2516	**	-0.4297	***
	(0.415)		(0.382)		(0.035)		(0.001)	
PhD Directors	-0.0471	*	-0.0503	*	0.0154		-0.0067	
	(0.074)		(0.057)		(0.818)		(0.924)	
Instrumented Female	0.2613		0.2879		-0.2314		0.0020	
*Directors*PhD Directors*	(0.323)		(0.278)		(0.732)		(0.998)	
CEO Duality	0.0126		0.0127		0.0095		0.0235	
	(0.131)		(0.332)		(0.286)		(0.124)	
*CEO Duality*Instrumented*			0.1609				0.5871	
Female CEO			(0.682)				(0.242)	
Firm Size	0.0166	***	0.0126	**	-0.2190	***	-0.2590	***
	(0.002)		(0.029)		(0.000)		(0.000)	
Leverage	-0.0133		-0.0127		0.2036	***	0.2092	***
	(0.746)		(0.758)		(0.004)		(0.004)	
Tangibility	0.0264		0.0014		-0.0541		-0.1052	
	(0.302)		(0.959)		(0.582)		(0.286)	
FCFAT	1.1739	***	1.1778	***	0.5211	***	0.4288	***
	(0.000)		(0.000)		(0.000)		(0.000)	
Sale Growth	0.0445	*	0.0423	*	0.1003	***	0.1027	***
	(0.062)		(0.075)		(0.000)		(0.000)	
Firm Risk	-1.0624	***	-1.0314	***	0.5347	**	0.7004	***
	(0.000)		(0.000)		(0.024)		(0.004)	
Business Segments	0.0012		0.0004		0.0016		0.0005	
	(0.349)		(0.783)		(0.615)		(0.873)	
Intercept	0.0329		0.0564		1.1114	***	1.1914	***
	(0.456)		(0.212)		(0.000)		(0.000)	
Industry Dummies	Yes		Yes		No		No	
Year Dummies	Yes		Yes		Yes		Yes	
Firm Fixed Effects	No		No		Yes		Yes	
N	12989		12986		12989		12986	
F Statistic	32.110	***	30.930	***	14.720	***	13.640	***

***, **, * Significant at the 1, 5, and 10 percent levels, respectively.

Table 8 Market Valuation

This table presents the results of the second stage from 2SLS regression analysis of market valuation. The dependent variable is Tobin's Q. All the independent variables are lagged by one year. The definition of each independent variable is listed in Table 2. The specifications in Model (1) and (2) include industry dummies. The specifications in Model (3) and (4) include firm fixed effects. All specifications include year dummies. All models are corrected for heteroskedasticity. P-values are reported in parentheses.

	Model (1)		**Model (2)**		**Model (3)**		**Model (4)**	
Instrumented Female Directors	29.5453	***	32.1892	***	13.3053	*	30.8753	***
	(0.000)		(0.000)		(0.070)		(0.000)	
Instrumented Female CEO			-10.2463	***			-10.6990	***
			(0.000)				(0.000)	
Board Size	-0.0960	***	-0.0820	***	-0.0153		-0.0168	*
	(0.000)		(0.000)		(0.116)		(0.084)	
Independent Directors	-1.7104	***	-1.7463	***	-0.2950		-0.9476	***
	(0.000)		(0.000)		(0.277)		(0.003)	
PhD Directors	0.3961	***	0.3580	***	0.4219	***	0.3398	***
	(0.000)		(0.000)		(0.001)		(0.008)	
Instrumented Female	-3.8602	***	-3.4982	***	-4.5367	***	-3.6717	***
*Directors*PhD Directors*	(0.000)		(0.000)		(0.001)		(0.006)	
CEO Duality	0.0048		0.1035	**	0.0348	**	0.1038	***
	(0.872)		(0.012)		(0.042)		(0.001)	
*CEO Duality*Instrumented*			-2.2600	*			1.5999	*
Female CEO			(0.051)				(0.086)	
Firm Size	-0.2395	***	-0.2824	***	-0.5008	***	-0.6451	***
	(0.000)		(0.000)		(0.000)		(0.000)	
Leverage	-0.1474		-0.1379		-0.0989		-0.0812	
	(0.174)		(0.205)		(0.311)		(0.403)	
Tangibility	-0.1976	**	-0.4553	***	-0.9611	***	-1.1400	***
	(0.034)		(0.000)		(0.000)		(0.000)	
FCFAT	-0.0778		-0.0443		0.0925		-0.2457	*
	(0.634)		(0.784)		(0.468)		(0.090)	
Sale Growth	0.7886	***	0.7665	***	0.0991	**	0.1050	**
	(0.000)		(0.000)		(0.035)		(0.026)	
Firm Risk	2.2430	***	2.5829	***	1.4729	***	2.0832	***
	(0.000)		(0.000)		(0.004)		(0.000)	
Business Segments	-0.0043		-0.0130	**	0.0009		-0.0035	
	(0.428)		(0.021)		(0.875)		(0.547)	
Intercept	2.9998	***	3.2105	***	4.3220	***	4.5980	***
	(0.000)		(0.000)		(0.000)		(0.000)	
Industry Dummies	Yes		Yes		No		No	
Year Dummies	Yes		Yes		Yes		Yes	
Firm Fixed Effects	No		No		Yes		Yes	
N	13482		13479		13482		13479	
F Statistic	53.270	***	50.910	***	73.760	***	67.420	***

***, **, * Significant at the 1, 5, and 10 percent levels, respectively.

Table 9 Financing Decisions

This table presents the results of the second stage from 2SLS regression analysis of financing decisions. The dependent variables are debt issuance and equity issuance. All the independent variables are lagged by one year. The definition of each independent variable is listed in Table 2. The specifications in Model (1) and (2) include industry dummies. The specifications in Model (3) and (4) include firm fixed effects. All specifications include year dummies. All models are corrected for heteroskedasticity. P-values are reported in parentheses.

Panel A: Debt Issuance

	Model (1)		**Model (2)**		**Model (3)**		**Model (4)**	
Instrumented Female Directors	-10.2711	***	-9.7822	***	27.1588		37.6600	*
	(0.003)		(0.006)		(0.161)		(0.079)	
Instrumented Female CEO			-0.6699				-3.6908	
			(0.870)				(0.579)	
Board Size	0.0367	***	0.0381	**	-0.0306		-0.0340	
	(0.009)		(0.011)		(0.237)		(0.194)	
Independent Directors	0.3072		0.2947		-1.5053	**	-1.8981	**
	(0.356)		(0.376)		(0.026)		(0.013)	
PhD Directors	-0.4710	***	-0.4796	***	-0.4779		-0.5394	
	(0.004)		(0.004)		(0.210)		(0.157)	
Instrumented Female	3.6872	**	3.7903	**	6.2758		6.9846	*
*Directors*PhD Directors*	(0.040)		(0.036)		(0.127)		(0.090)	
CEO Duality	0.0272		0.0885		0.1376	**	0.2605	**
	(0.667)		(0.349)		(0.026)		(0.012)	
*CEO Duality*Instrumented*			-2.1932				-2.6687	
Female CEO			(0.441)				(0.446)	
Firm Size	0.7156	***	0.7082	***	-0.0040		-0.0875	
	(0.000)		(0.000)		(0.981)		(0.640)	
Leverage	3.1996	***	3.2028	***	-2.0433	***	-2.0374	***
	(0.000)		(0.000)		(0.000)		(0.000)	
Tangibility	1.2256	***	1.1900	***	2.5344	***	2.4297	***
	(0.000)		(0.000)		(0.000)		(0.000)	
FCFAT	-0.2592		-0.2566		-0.0680		-0.2411	
	(0.190)		(0.195)		(0.790)		(0.453)	
Sale Growth	0.0481		0.0452		0.1764	*	0.1850	*
	(0.590)		(0.613)		(0.080)		(0.067)	
Firm Risk	-2.7347	***	-2.6867	***	-0.0592		0.3363	
	(0.000)		(0.000)		(0.961)		(0.787)	
Business Segments	0.0356	***	0.0346	***	0.0487	**	0.0471	**
	(0.001)		(0.002)		(0.021)		(0.028)	
Intercept	-2.7075	***	-2.6850	***	1.4472	*	1.5566	*
	(0.000)		(0.000)		(0.073)		(0.058)	
Industry Dummies	Yes		Yes		No		No	
Year Dummies	Yes		Yes		Yes		Yes	
Firm Fixed Effects	No		No		Yes		Yes	
N	13483		13480		13483		13480	
F Statistic	117.780	***	110.690	***	10.120	***	9.320	***

Table 9 Financing Decisions (Continued)

Panel B: Equity Issuance

	Model (1)		Model (2)		Model (3)		Model (4)	
Instrumented Female Directors	26.7961	***	28.1903	***	54.1491	***	66.4027	***
	(0.000)		(0.000)		(0.000)		(0.000)	
Instrumented Female CEO			-5.0641				-7.6397	
			(0.128)				(0.165)	
Board Size	-0.0864	***	-0.0794	***	-0.0829	***	-0.0836	***
	(0.000)		(0.000)		(0.000)		(0.000)	
Independent Directors	-1.3273	***	-1.3438	***	-2.0204	***	-2.4703	***
	(0.000)		(0.000)		(0.000)		(0.000)	
PhD Directors	0.5478	***	0.5273	***	-0.1651		-0.2210	
	(0.001)		(0.001)		(0.591)		(0.459)	
Instrumented Female	-3.4387	**	-3.2393	*	2.1976		2.7809	
*Directors*PhD Directors*	(0.038)		(0.051)		(0.505)		(0.386)	
CEO Duality	-0.0066		0.0587		-0.0320		0.0265	
	(0.885)		(0.379)		(0.431)		(0.714)	
*CEO Duality*Instrumented*			-1.7087				0.8909	
Female CEO			(0.362)				(0.681)	
Firm Size	0.5865	***	0.5647	***	-0.3143	**	-0.4149	***
	(0.000)		(0.000)		(0.016)		(0.002)	
Leverage	-0.3248	**	-0.3226	**	0.3121	*	0.3212	*
	(0.018)		(0.019)		(0.085)		(0.077)	
Tangibility	-0.4057	***	-0.5372	***	-0.8106	**	-0.9274	**
	(0.004)		(0.001)		(0.041)		(0.022)	
FCFAT	-0.9961	***	-0.9808	***	-0.0383		-0.2814	
	(0.000)		(0.000)		(0.871)		(0.311)	
Sale Growth	0.9279	***	0.9161	***	0.2801	***	0.2824	***
	(0.000)		(0.000)		(0.001)		(0.001)	
Firm Risk	1.4132	***	1.5987	***	0.9022		1.3318	
	(0.004)		(0.002)		(0.330)		(0.149)	
Business Segments	0.0053		0.0008		0.0381	***	0.0344	***
	(0.520)		(0.930)		(0.003)		(0.008)	
Intercept	-3.0744	***	-2.9749	***	1.5273	***	1.7204	***
	(0.000)		(0.000)		(0.007)		(0.003)	
Industry Dummies	Yes		Yes		No		No	
Year Dummies	Yes		Yes		Yes		Yes	
Firm Fixed Effects	No		No		Yes		Yes	
N	13483		13480		13483		13480	
F Statistic	76.670	***	72.400	***	32.920	***	30.470	***

***, **, * Significant at the 1, 5, and 10 percent levels, respectively.

Table 10 Investment Decisions

This table presents the results of the second stage from 2SLS regression analysis of investment decisions. The dependent variables are acquisitions and capital expenditures. All the independent variables are lagged by one year. The definition of each independent variable is listed in Table 2. The specifications in Model (1) and (2) include industry dummies. The specifications in Model (3) and (4) include firm fixed effects. All specifications include year dummies. All models are corrected for heteroskedasticity. P-values are reported in parentheses.

Panel A: Acquisition

	Model (1)		**Model (2)**		**Model (3)**		**Model (4)**	
Instrumented Female Directors	-1.4434	***	-1.6436	***	0.4098		5.9872	**
	(0.000)		(0.000)		(0.873)		(0.040)	
Instrumented Female CEO			0.6122				-3.4444	***
			(0.215)				(0.000)	
Board Size	0.0003		-0.0006		-0.0014		-0.0018	
	(0.871)		(0.757)		(0.687)		(0.597)	
Independent Directors	0.0559		0.0589		-0.0617		-0.2690	**
	(0.192)		(0.170)		(0.538)		(0.020)	
PhD Directors	-0.0654	***	-0.0623	***	-0.0830		-0.1089	**
	(0.002)		(0.003)		(0.105)		(0.036)	
Instrumented Female	0.4969	***	0.4649	***	0.8064		1.0786	**
*Directors*PhD Directors*	(0.003)		(0.007)		(0.101)		(0.030)	
CEO Duality	0.0070		-0.0064		0.0209	***	0.0409	***
	(0.367)		(0.543)		(0.010)		(0.001)	
*CEO Duality*Instrumented Female*			0.4122				0.5850	
CEO			(0.170)				(0.103)	
Firm Size	0.0103	**	0.0134	***	-0.0726	***	-0.1184	***
	(0.014)		(0.003)		(0.005)		(0.000)	
Leverage	0.0324		0.0319		-0.3171	***	-0.3112	***
	(0.112)		(0.116)		(0.000)		(0.000)	
Tangibility	-0.3969	***	-0.3792	***	-0.1672	***	-0.2232	***
	(0.000)		(0.000)		(0.000)		(0.000)	
FCFAT	0.1967	***	0.1948	***	0.1830	***	0.0757	*
	(0.000)		(0.000)		(0.000)		(0.057)	
Sale Growth	0.0441	***	0.0456	***	-0.0017		0.0001	
	(0.001)		(0.001)		(0.912)		(0.993)	
Firm Risk	-0.4077	***	-0.4328	***	-0.1791		0.0135	
	(0.000)		(0.000)		(0.303)		(0.940)	
Business Segments	-0.0017		-0.0011		0.0048	*	0.0034	
	(0.187)		(0.412)		(0.096)		(0.240)	
Intercept	0.3060	***	0.2932	***	0.7804	***	0.8692	***
	(0.000)		(0.000)		(0.000)		(0.000)	
Industry Dummies	Yes		Yes		No		No	
Year Dummies	Yes		Yes		Yes		Yes	
Firm Fixed Effects	No		No		Yes		Yes	
N	13483		13480		13483		13480	
F Statistic	17.880	***	17.000	***	9.360	***	8.910	***

Table 10 Investment Decisions (Continued)

Panel B: CAPEX								
	Model (1)		**Model (2)**		**Model (3)**		**Model (4)**	
Instrumented Female Directors	0.2315	***	0.2445	***	0.1526		0.3200	
	(0.000)		(0.000)		(0.548)		(0.256)	
Instrumented Female CEO			-0.0410				-0.0668	
			(0.529)				(0.407)	
Board Size	-0.0008	***	-0.0007	***	0.0002		0.0001	
	(0.001)		(0.006)		(0.650)		(0.737)	
Independent Directors	-0.0200	***	-0.0202	***	-0.0049		-0.0111	
	(0.000)		(0.000)		(0.618)		(0.301)	
PhD Directors	0.0001		-0.0001		-0.0058		-0.0068	
	(0.970)		(0.972)		(0.233)		(0.169)	
Instrumented Female	-0.0218		-0.0197		0.0402		0.0508	
*Directors*PhD Directors*	(0.353)		(0.402)		(0.388)		(0.277)	
CEO Duality	-0.0006		0.0002		-0.0001		0.0016	
	(0.515)		(0.897)		(0.888)		(0.251)	
*CEO Duality*Instrumented Female*			-0.0251				-0.0300	
CEO			(0.545)				(0.378)	
Firm Size	-0.0030	***	-0.0032	***	-0.0064	***	-0.0078	***
	(0.000)		(0.000)		(0.008)		(0.003)	
Leverage	-0.0193	***	-0.0193	***	-0.0348	***	-0.0347	***
	(0.000)		(0.000)		(0.000)		(0.000)	
Tangibility	0.1326	***	0.1314	***	-0.0545	***	-0.0564	***
	(0.000)		(0.000)		(0.000)		(0.000)	
FCFAT	0.0373	***	0.0375	***	0.0217	***	0.0188	***
	(0.000)		(0.000)		(0.000)		(0.000)	
Sale Growth	0.0155	***	0.0154	***	0.0049	***	0.0050	***
	(0.000)		(0.000)		(0.007)		(0.005)	
Firm Risk	0.0511	***	0.0528	***	-0.0116		-0.0053	
	(0.000)		(0.000)		(0.517)		(0.772)	
Business Segments	-0.0001		-0.0002		0.0001		0.0001	
	(0.528)		(0.427)		(0.690)		(0.788)	
Intercept	0.0361	***	0.0369	***	0.1005	***	0.1023	***
	(0.000)		(0.000)		(0.000)		(0.000)	
Industry Dummies	Yes		Yes		No		No	
Year Dummies	Yes		Yes		Yes		Yes	
Firm Fixed Effects	No		No		Yes		Yes	
N	13465		13462		13465		13462	
F Statistic	75.070	***	71.910	***	27.300	***	25.750	***

***, **, * Significant at the 1, 5, and 10 percent levels, respectively.

Table 11 Payout Policy

This table presents the results of the second stage from 2SLS regression analysis of payout policy. The dependent variable is dividend. All the independent variables are lagged by one year. The definition of each independent variable is listed in Table 2. The specifications in Model (1) and (2) include industry dummies. The specifications in Model (3) and (4) include firm fixed effects. All specifications include year dummies. All models are corrected for heteroskedasticity. P-values are reported in parentheses.

	Model (1)		**Model (2)**		**Model (3)**		**Model (4)**	
Instrumented Female Directors	0.2523	***	0.2795	***	0.1575		0.3107	**
	(0.000)		(0.000)		(0.159)		(0.015)	
Instrumented Female CEO			-0.1080	**			-0.1012	***
			(0.017)				(0.005)	
Board Size	-0.0005	***	-0.0004	**	-0.0005	**	-0.0005	**
	(0.001)		(0.017)		(0.012)		(0.011)	
Independent Directors	-0.0165	***	-0.0168	***	-0.0019		-0.0076	
	(0.000)		(0.000)		(0.678)		(0.143)	
PhD Directors	-0.0032	*	-0.0036	*	-0.0021		-0.0028	
	(0.089)		(0.057)		(0.313)		(0.190)	
Instrumented Female	0.0121		0.0157		0.0159		0.0228	
*Directors*PhD Directors*	(0.548)		(0.435)		(0.476)		(0.311)	
CEO Duality	-0.0001		0.0008		0.0001		0.0002	
	(0.888)		(0.324)		(0.831)		(0.664)	
*CEO Duality*Instrumented*			-0.0191				0.0305	**
Female CEO			(0.450)				(0.047)	
Firm Size	-0.0015	***	-0.0020	***	-0.0018	*	-0.0031	***
	(0.000)		(0.000)		(0.057)		(0.005)	
Leverage	-0.0064	***	-0.0062	***	-0.0024		-0.0022	
	(0.004)		(0.005)		(0.389)		(0.428)	
Tangibility	0.0025		-0.0002		-0.0147	***	-0.0164	***
	(0.193)		(0.923)		(0.001)		(0.000)	
FCFAT	-0.0049	**	-0.0045	**	0.0030		0.0000	
	(0.023)		(0.034)		(0.191)		(0.985)	
Sale Growth	0.0004		0.0001		-0.0004		-0.0003	
	(0.658)		(0.871)		(0.626)		(0.676)	
Firm Risk	-0.0629	***	-0.0594	***	-0.0148		-0.0096	
	(0.000)		(0.000)		(0.175)		(0.383)	
Business Segments	0.0001		0.0000		0.0000		-0.0001	
	(0.414)		(0.957)		(0.893)		(0.646)	
Intercept	0.0313	***	0.0335	***	0.0260	***	0.0286	***
	(0.000)		(0.000)		(0.000)		(0.000)	
Industry Dummies	Yes		Yes		No		No	
Year Dummies	Yes		Yes		Yes		Yes	
Firm Fixed Effects	No		No		Yes		Yes	
N	13408		13405		13408		13405	
F Statistic	19.650	***	18.710	***	7.820	***	7.330	***

***, **, * Significant at the 1, 5, and 10 percent levels, respectively.