Three Essays on Ethical Corporate Behavior

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Abstract

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The first essay extends the literature on how social and organizational discrimination in the form of glass ceiling, interact with managerial traits in shaping observed leadership effectiveness[1]. We show that when the population of CEOs is stratified by ethnicity and gender, the colored female CEO emerges as the best performing while the white male CEO is consigned among the worst performers. Additionally, the transition from male to female CEOs seems to follow corporate downturn and precede an upturn. Furthermore, the upswing is strongest following a transition from white male to colored female CEO. We attribute these observed differences between the groups to the existence of the glass ceiling. Discriminatory selection and promotion process potentially imposes much higher demands on candidates belonging to the discriminated group. Thus, the level of ability of the successful average colored female is much higher than those of the average white male CEO. These results potentially have important implications for both policy and research.

The second essay examines whether gender discrimination after women are elevated to positions of power impacts financial reporting quality[2]. Specifically, we extend the literature by using role congruity theory and glass cliff hypothesis to examine the earnings management behavior of female chief executive officers (CEOs) conditional on the power they hold. We find that female CEOs do not necessarily reduce earnings management. For CEOs holding less power, women CEOs demonstrate lower earnings management relative to their male counterparts. However with increased power, we find women and male CEOs to exhibit similar earnings management behaviors. Thus, the earnings management behaviors of women CEOs are not solely dictated by their risk-taking and ethical attitudes, but by the existence of glass cliffs which imposes high demands on women CEOs to conform to their gender roles.

[1] Based on paper with Rahul Ravi, Sandra Betton and Gillian Leithman
[2] Based on paper with Rahul Ravi

The final essay examines the stock price changes to the firm's strategic choice towards symbolic and substantive CSR[3]. Our results indicate that stock prices react differently to symbolic and substantive CSR. Symbolic CSR is used as a means to repair reputational damage following a corporate controversy and attracts a positive stock price change consistent with stakeholder wealth maximization theory. In contrast, substantive CSR, undertaken to conform long-term commitment towards CSR is perceived as over-investment by managers in the manifestation of agency leading to a negative stock return-substantive CSR relation. However, no such negative relation between stock returns and substantive CSR is found for a subset of family firms, where the controlling families have a personal interest in the long-term performance of the firm. Overall, the results indicate that the stock market responds to the nature of CSR activities.

[3]Based on the paper with Rahul Ravi and Nilanjan Basu

Dedication

To my parents for their inspiration,
To my siblings for being my best companions,
To my husband for his constant and amazing support.

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Chapter 1

Introduction

Glass ceiling is a metaphor for hard-to-see informal barriers that keep women and minorities to rise to the upper rungs of the corporate sector irrespective of their qualifications and achievements. The representation of women at top executive positions is steadily increasing. The existing empirical literature increasingly explores the differential impact of gender on various corporate outcomes. However, an important question underlying the effect of women leadership is whether fundamental differences in genders drives firm outcomes. The prior literature compares male and female leaders, assuming their career trajectories are the same, disregarding the real obstacles women face on their route to the top. This thesis addresses how social and racial discrimination in the form of glass ceiling shape managerial traits and impacts firm performance, corporate social responsibility and earnings management in two separate studies presented in Chapters 2 and 3 respectively. We further extend the corporate social responsibility (CSR) literature by examining the relationship between a firm's stock returns and CSR based on intent or motive behind CSR initiations presented in Chapter 4.

In Chapter 2 (Essay 1), we examine whether glass ceiling faced by women and minorities on their route to top executive positions impact firm performance and corporate social responsibility. Evolving gender and demographic diversity within C-suites have led finance researchers to study how gender differences result in the superior performance of female leaders in comparison to their male counterparts (Adams and Ferreira 2009; Gul, Srinidhi, and Ng 2011; Kim and Starks 2016; Faccio, Marchica, and Mura 2016). However, the existing studies comparing male and female leaders assume that their career trajectories are the same, disregarding the discriminatory glass ceiling women and minorities face on the route to the top. Glass ceilings act as discriminatory filters which permit only above average women to occupy top executive roles. Comparing them to their male counterparts, who have not had to go through discriminatory filters, is unlikely to yield comparable results. We find that when the population of CEOs is stratified by ethnicity and gender, the colored female CEO emerges as the best performing while the white male CEO is consigned

among the worst performers.

In this study, we argue that empirical, comparative gender research suffers from a joint hypothesis problem. The better performance of female leaders could be the result of superiority of one gender over the other or it may be the result of discriminatory filters that permit only above average women and minorities to occupy leadership positions. In the first hypothesis, we therefore surmise that based on glass ceiling hypothesis, average female or ethnic minority who makes it to the top CEO position has had to go through relatively higher levels of scrutiny and accountability, vis-à-vis others and is more likely to possesses superior qualifications and/or abilities in comparison to other CEOs and hence demonstrate superior performance measured by ROA and Tobin's Q. In addition to discriminatory barriers preventing the advancement of women and minorities, the glass cliff hypothesis (Ryan and Haslam 2007) asserts that occupational minorities are more likely to accept CEO positions in organizations that are struggling, in crisis or at risk of failing. In the second hypothesis, we posit that occupational minorities are more likely to be hired as CEOs for organizations in crisis, but because they possess superior leadership abilities, the average firm performance post their appointment improves. We show that when the population of CEOs is stratified by ethnicity and gender, the colored female CEO emerges as the best performing while the white male CEO is consigned among the worst performers. Additionally, the transition from male to female CEO seems to follow corporate downturn and precede an upturn. Furthermore, the upswing is strongest following a transition from white male to a colored female CEO. We attribute these observed differences between the groups to the existence of the glass ceiling. Discriminatory selection and promotion process potentially imposes much higher demands on candidates belonging to the discriminated group. Thus, the level of ability of the successful average colored female is much higher than those of the average white male CEO.

We further show the role of glass ceiling in shaping CSR initiations by CEOs. Researchers commonly distinguish between substantive and symbolic CSR strategies (Oliver 1991; Okhmatovskiy and David 2012). Substantive CSR strategies involve complete CSR implementation. The firm's underlying systems and processes are altered in a holistic attempt to improve the status quo of a particular societal or environmental context. In contrast, symbolic CSR allows firms to attend to stakeholder demands without making substantive changes to their systems and operations, allowing firms to maintain legitimacy without significant strategic change (Myers, Myers, and Skinner 2007). In the third and fourth hypotheses, we surmise that occupational minority CEOs initiate higher symbolic and substantive CSR. CSR can be strategically used by minorities to strengthen relations with stakeholders, attain job security and reduce CEO turnover. To deal with inherent endogeneity and causal inferences, we follow the prior literature and estimate the results using propensity score matched sample and find the results to persist.

We believe that this study contributes positively to the discussion on gender and equality in

the workplace in at least two ways. First: it highlights the problem of discrimination against occupational minorities rather than just gender. Our results show that over the last decade, the proportion of women in corporate leadership has increased. However, almost all the increase seems to be coming from a simultaneous decrease in the proportion of non-white men CEOs. This is one diversity replacing another. Second: Psychology research seems to suggest that once the social stereotypes and expectations are removed from the equation, the male and the female gender tend to be more alike than different. However when the bulk of the research is attempting to find differences between the genders, this can potentially orient society and organizations towards finding differences while downplaying the similarities. If so, they can be sometimes used to support prejudicial beliefs and discriminatory actions against one-group vs another.

In Chapter 3 (Essay 2), we examine whether gender discrimination after women have elevated to positions of power impacts financial reporting quality. An increasing number of women have successfully shackled the glass ceiling by reaching the upper echelons of the corporate sectors. Several studies examine the potential barriers women face on their way to the top as well as the role of women in shaping corporate outcomes (Cook and Glass 2014; Adams and Ferreira 2009; Kim and Starks 2016). Recently, scholarly attention has also shifted towards understanding the potential barriers women face in the form of glass cliffs after attaining senior corporate roles (Bowles 2012; Glass and Cook 2016). Role congruity theory (Eagly, Wood, and Diekman 2000) suggests that individuals are judged for congruence between their characteristics dictated by their gender stereotypes and the requirements of the job that they occupy.

In this essay, we examine whether differences in discrimination men and women CEOs face impact their earnings management behaviors. Specifically, we extend the literature by using role congruity theory and glass cliff hypothesis to examine the earnings management behavior of female chief executive officers (CEOs) conditional on the power they hold. Based on the above arguments, our paper aims to examine two key research questions. Firstly, we examine the impact of CEO gender on earnings management. Although previous studies have examined the effect of gender diverse boards on earnings management, the impact of CEO gender on earnings management is still debatable given the mixed evidence in the literature (Gul, Srinidhi, and Ng 2011; Cumming, Leung, and Rui 2015; Ye, Zhang, and Rezaee 2010; Yu et al. 2010).

Secondly, we consider if discrimination in the form of glass cliffs shape earnings management behavior of women CEOs. Prior studies document the success of CEOs in manipulating performance critically depends on their power to influence decisions (Morck, Shleifer, and Vishny 1988; Adams, Almeida, and Ferreira 2005). Powerful CEOs are found to pressurize CFOs to report biased earnings and are subject to weaker board monitoring, reduced scrutiny and a higher incentive to withhold information from the shareholders (Fracassi and Tate 2012). Given that power can act as a stimulus that can shift managers' focus, we hypothesize that CEO gender and earnings

management relationship distorts with increased CEO power. That is, in a powerful CEO setting, women CEOs are subject to less scrutiny and have an opportunity to influence the decision-making process. We find women CEOs do not necessarily reduce earnings management. For CEOs holding less power, women CEOs demonstrate lower earnings management relative to their male counterparts. However with increased power, we find women and male CEOs to exhibit similar earnings management behaviors. Thus, the earnings management behaviors of women CEOs are not solely dictated by their risk-taking and ethical attitudes, but by the existence of glass cliffs which imposes high demands on women CEOs to conform to their gender roles.

Consistent with prior gender studies, our study faces the challenges of small female CEO sample size, selection bias and omitted variable concerns. To address these endogeneity concerns, we rely on methodological techniques accepted in the literature, including propensity score matching, instrumental variable approach and difference-in-difference analysis. Our results are robust to these techniques and support our hypotheses.

Our study has important practical implications. Its main contribution is to the literature on corporate gender diversity as we provide additional evidence of how behavioral aspects of women CEOs can affect corporate policies. Our study identifies a previously unexplored factor: "glass cliff", as an important factor dictating earnings management behavior of women CEOs. We also add to the growing line of research on the impact of managerial characteristics on corporate outcomes. Finally, our study is also related to the literature on the economic consequences of powerful CEOs on earnings management. Consistent with (Fracassi and Tate 2012), we find powerful CEOs are subject to weaker board monitoring, can influence decisions and exert pressure to report biased performance measures.

In Chapter 4 (Essay 3), we examine the relation between stock price changes and firm's strategic choice towards symbolic and substantive CSR. Corporate social responsibility (CSR) has continued to gain importance in managerial practice over the last several decades. And yet, despite years of research, the relationship between the market valuation of a firm and its CSR activities remains unclear (Margolis and Walsh 2003; McWilliams, Siegel, and Wright 2006). While early studies treated CSR as an obligation on businesses to pursue policies that are desirable in terms of the objectives and values of society, subsequent ones contend that CSR is 'fundamentally subversive' of the true responsibilities of business.

Prior literature provides two opposing views of CSR that influences the relation between CSR and market value of firms. Stakeholder value maximization theory (Friedman 1970) proposes that the aim of the corporation is stakeholder wealth maximization and management should consider the effects of their actions on customers, suppliers, employees and other stakeholders. This line of study advocates that investment in CSR to balance social goals along with shareholder wealth maximization will lead to a positive market reaction. In contract, the over-investment theory (Barnea

and Rubin 2010) suggests that shareholders associate investment in CSR as a means by management to extract private benefits from the firm and build their personal reputation. Based on agency theory, insiders over-invest in CSR to be entrenched as socially responsible managers at the expense of shareholders and lead to negative market reaction.

This paper provides a new perspective by focusing directly on the relationship between a firm's stock price performance and CSR based on intent or motive behind CSR initiations. Firms strategically utilize symbolic and substantive CSR to either repair reputational damage following negative societal events or undertake actions intended to integrate CSR in the overall business objectives.

We find that the market responds positively to symbolic CSR while negatively to substantive CSR. Media attention towards negative firm events puts a corporation's reputation at risk and the firm's engagement in symbolic CSR acts as a quick response from the firm to show that it is doing something to 'fix the problem'. Substantive CSR, on the other hand often requires subsequent changes in operations, systems and processes. The cost of implementing substantive CSR may be higher than the benefits in the short-term and leads shareholders' to view it as a manifestation of agency conflict. Further, we shed light on shareholders' sensitivity to changes in symbolic and substantive CSR over the sample period. Consistent with (Flammer 2012), we find that the intensity of stock market reaction to negative events and CSR initiations is different. With increased external pressure to conform to societal objectives, initiation in symbolic CSR is rewarded less by the stock market over time, but firms are punished more for negative events.

Our findings have several interesting implications for the literature on CSR activity. First, we find that crucial differences underlying CSR activities impact subsequent stock returns. Second, and perhaps more interestingly, we provide a detailed description of how the stock market reacts to CSR based on the intent or motivation behind CSR activities. Our results indicate that there is a conflict of interest between shareholders and managers towards the optimal level of CSR activity. Third, we also fill the gap in the existing CSR firm value relation literature. The existing empirical literature studying the impact of CSR on firm value yields mixed evidence with some evidence pointing towards a positive impact of CSR on firm value while some finding negative or no market value CSR relationship. We extend the literature by showing that the stock market reaction to CSR depends on the motve behind specific CSR initiations.

The last piece of work in the thesis, Chapter 5 provides the concluding remarks.

Chapter 2

Breaking through Glass Ceiling: Occupational minority CEOs and firm performance

2.1. Introduction

As of late there has been much discussion in the finance literature about gender differences in the C-suite and the superior performance of female leaders in comparison to their male counterparts. The mere comparison of female and male leaders, however, assumes that their career trajectories are the same, disregarding the real obstacles women face on route to the top. A term that is often used to describe this phenomenon is known as the glass ceiling effect. The Federal Glass Ceiling Commission (1995) defines the glass ceiling as "artificial barriers to the advancement of women and minorities." The Commission further asserts, “The glass ceiling is the "unseen, yet unbreachable barrier that keeps minorities and women from rising to the upper rungs of the corporate ladder, regardless of their qualifications or achievements". (Wright, Baxter, and Birkelund 1995) maintains, "the glass ceiling hypothesis is not simply a claim about the existence of discrimination within hierarchies; it claims that such discrimination increases as one moves up the hierarchy". Thus, if aspiring women and minorities manage to break through the barriers imposed upon them as they work their way up the chain of command, then comparing them to their male counterparts, who have not had to face the same challenges and obstacles, is unlikely to yield comparable differences.

According to (Wellington, Kropf, and Gerkovich 2003), the glass ceiling metaphor implies that the only career barriers women face are those that prevent their advancement. However, these researchers maintain, glass walls and lateral barriers exist at almost every organizational level, limiting women’s career opportunities from the very beginning. Under such conditions women

who aspire and attain corporate leadership positions may be very different from those who do not. This study attempts to shed light on the influence of the glass ceiling and its effect on the performance of corporate leaders.

A growing body of empirical research explores the differential impact of gender in various corporate settings. For example, (Adams and Ferreira 2009; Gul, Srinidhi, and Ng 2011; Kim and Starks 2016) findings indicate that gender diversity among top management teams and boards of directors positively affects firm performance.[1] (Cumming, Leung, and Rui 2015) results indicate that the presence of women on a board of directors reduces corporate misconduct. Their findings also suggest that women are more effective in reducing the frequency and severity of fraud in male-dominated industries. Similarly,(Gul, Srinidhi, and Ng 2011; Francis et al. 2015) find that gender diversity among top management teams and the board of directors improves a firm's accounting policies. According to (Levi, Li, and Zhang 2014) results, each additional female director is associated with 7.6% fewer bids, and each additional female director on a bidder board reduces the bid premium paid by 15.4%. Their findings support the notion that female directors help create shareholder value through their influence on acquisition decisions.

In addition, research examining the relationship between top corporate executives and corporate decisions, indicates that women make more sound investment decisions. For example, according to (Faccio, Marchica, and Mura 2016) firms run by female CEOs have lower leverage, less volatile earnings, and a higher chance of survival than otherwise similar firms run by male CEOs. The authors attribute this finding to lower risk-taking tendencies of the female leadership.(Huang and Kisgen 2013) reveals that female CEOs make fewer acquisitions.

In contrast to the above stream of research, a growing body of psychological research suggests that there are no significant differences between men and women. Findings from a review of 46 meta-analytic studies investigating gender differences reveal that there are few psychological differences between the genders. In fact, the author argues and cites evidence in favor of the gender similarities hypothesis (Hyde 2005), that is men and women, boys and girls, are more similar than they are different. A few notable exceptions include motor performance (i.e., throwing velocity and throwing distance) and physical aggression. Males tend to display superior motor performance skills and are moderately more aggressive than are females. Of course one must bear in mind that context matters. In fact, one of the most important findings to emerge from Hyde's analysis deserving of mention is that gender differences can and do emerge under varying conditions, however, they can also disappear and be reversed. For example, in a study conducted by (Spencer, Steele, and Quinn 1999), female college students who excelled at math performed worse than their male colleagues on a challenging math test when told gender differences existed on the assessment.

[1]Gender Diversity is defined as the representation of gender differences on board of directors and among the top management team

Yet, this finding disappeared when both groups were told there were no gender differences on the test. Similar results have been found in experiments conducted on gender norms and aggression (Lightdale and Prentice 1994), helping behaviors (Eagly and Crowley 1986), conversational interruption (Anderson and Leaper 1998), smiling behavior (LaFrance, Hecht, and Paluck 2003) and most recently athletic performance (Hively and El-Alayli 2014).

In addition to context, one must also be mindful that gender differences can and do change with age, getting smaller or larger across the lifespan (Hyde 2005). Accordingly, (Halpern 2014) maintains, "Even when differences are found, we cannot conclude that they are immutable because the continuous interplay of biological and environmental influences can change the size and direction of the effects sometime in the future."

These two bodies of research, with their diametrically opposing assertions, present something akin to a gender puzzle. If men and women are indeed quite similar, why does the growing body of empirical business research find so many significant differences? We suspect that the women who attain corporate leadership positions, despite of discriminatory business practices, are quite different from the women who choose alternate career paths. As such, we argue that the empirical, comparative gender research suffers from a joint hypothesis problem. One hypothesis is gender. The other is the glass ceiling. The superior performance of female executives or board members may indeed represent the superiority of one gender over the other in such roles, or it may be the result of discriminatory filters which permit only above average women to reach these positions.

According to (Eagly 2007), gender differences result from social prejudices and work-life balance demands. These researchers argue that a more comprehensive understanding of such differences is better portrayed by the concept of a labyrinth rather than a ceiling because the issue is indeed multi-dimensional.(Baxter and Wright 2000) maintain that because of the glass ceiling, women face more obstacles when trying to move up the organizational hierarchy, and face even greater challenges at the executive and board levels. Empirically this would suggest that a woman in a leadership position has overcome several rounds of discriminatory filtering before arriving in a position of power, and thus likely more qualified than her male equivalent. We therefore argue that gender comparisons at the CEO level, without controlling for the glass ceiling effect, is potentially flawed.

This study expands its scope beyond gender and includes racial minorities in its design. We find that in a sample consisting of the largest corporations in the United States, the proportion of female CEOs increased from 2.05% in 1998 to 6.6% in 2013 (Table 2.1), whereas during the same time, non-white CEOs in the sample witnessed a minor increase from 9.11% in 1998 to 10.6% in 2013. If we exclude CEOs with one year or less of tenure (we define them as interim), the percentage of non-white CEOs merely increased by 1% over the sample period. The proportion of white-male CEOs declined from 89.12% in 1998 to 87% in 2013, still occupying a majority share

of CEO positions. We refer to the female and non-white-male CEOs as occupational minorities.[2]

Extant research suggests that glass-ceiling effects exist for all occupational minorities – white women, and men and women of color. Decision-makers tend to view women and minorities as less competent and capable of leading organizations compared to white men (Carton and Rosette 2011; Rosette, Leonardelli, and Phillips 2008). Our findings indicate that on average, the relative performance and firm value of firms led by women of color (two levels of adverse discrimination – gender and ethnicity) are among the best (as measured by ROA and Tobin's Q respectively), followed by firms run by white females and non-white men. The performance of firms led by white-men (no adverse discrimination) are the worst among the four groups. In this sample, firms led by white female CEOs display marginally better performance compared to those led by colored male CEOs.

The significant difference between the performance of white and the non-white male CEOs, and those between white and non-white female CEOs, is consistent with the Glass-Ceiling hypothesis. The potential existence of racial discrimination favors above-average non-white aspirants to reach the top. Similarly, gender discrimination may result in the superior performance of female CEOs in comparison to their male counterparts. For example, the on average performance of non-white female CEOs being the best and the white male CEOs being the worst, suggests that gender and race discriminatory practices have cumulative effects on the groups subjected to them. We find that white-female CEOs tend to demonstrate marginally superior performance relative to non-white male CEOs. These findings have two plausible interpretations. First, it is evidence in support of female gender superiority in the role of corporate leadership, or, second, it is evidence that gender discrimination is relatively more severe than ethnic discrimination.

The Glass-cliff theory proposed by (Ryan and Haslam 2007) suggests that occupational minorities are more likely to accept positions of leadership in organizations that are struggling, in crisis, or at risk to fail. They attribute this to the aspirant's fear that they will lack better opportunities in the future. Consistent with this hypothesis (Cook and Glass 2014) find that occupational minorities—defined as white women and men and women of color—are more likely than white men to be promoted to CEO of weakly performing firms. We contribute to this literature by studying firm performance after the CEO transition. We find that on average, firm-performance tends to improve when a female CEO replaces a male CEO. The same is observed when a non-white CEO replaces a white-CEO. This result is consistent with our assertion that in the presence of discriminatory filters (Glass-Ceiling), occupational minorities making it to leadership positions are likely to possess superior qualifications. We find that improvement in firm performance is greater when the transition is from male to female CEO, suggesting that discrimination based on gender is potentially greater than that based on ethnicity. (Ryan, Haslam, et al. 2011) argue that in the presence of the

[2](Taylor 2010) defines occupational minority, as a worker who is a numerical rarity in his or her occupation

glass-cliff, in times of crisis, the dominant narrative of *"think manager–think male"* (Schein 1973) could change to "think Crisis–think female". Our study suggests that a more accurate response is *"Think Crisis-Think occupational minority"*.

The remainder of this paper is organized as follows. Section 2 reviews the theoretical background and develops the hypotheses. Section 3 describes the data and the methodology. Section 4 presents the empirical results and their discussion. Section 5 reviews several robustness tests and Section 6 offers concluding remarks.

2.2. Theory: Occupational minority and Glass ceilings

An occupation tends to take the dominant narrative of the occupational majority (Schein 1973). The phrase occupational majority is a play on (Taylor 2010) definition of occupational minority – as a worker who is a numerical rarity in his or her occupation. (Ryan, Haslam, et al. 2011) suggests that the "think manager – think male" narrative uncovered by (Schein 1973) underlies many gender inequalities in the workplace. Arguably, the cultural ideals associated with the dominant majority are likely to affect the occupational minority (Taylor 2010). Moreover, these dominant group effects can negatively influence the perception of the occupational minority's abilities, interaction with and support of the group itself. The result manifests in what is popularly referred to as the glass ceiling effect. Thus, we maintain that in the presence of discrimination, the average female or ethnic minority executive who makes it to the position of CEO, has had to go through relatively higher levels of scrutiny and accountability, vis-à-vis others. Therefore, the average female or ethnic minority CEO is likely to possess superior qualifications and/or abilities vis-à-vis other CEOs.

2.2.1. Occupational minority and financial performance

According to (Ragins, Townsend, and Mattis 1998),99 percent of the female executives in their study reported "consistently exceeding performance expectations" as critical or fairly important. These women felt they needed to repeatedly prove their abilities and over-perform to counter negative assumptions. (Klenke 2003) finds that as women move into higher positions, they become more visible and feel increasing pressure to outperform their male colleagues. (Davidson and Cooper 1992) suggests that these women are often seen as test cases for future female leaders. Meaning, if they do not turn around the company quickly, the probability that future female executives will be hired significantly decreases. We argue that such stressors drive these women to publicly prove their capabilities, as evidenced by firm performance. Additionally, we believe that the same discriminatory barriers that hold women back extend to all occupational minorities. We, therefore surmise that the average female or ethnic minority executive who makes it to the

position of CEO has had to go through relatively higher levels of scrutiny and accountability, vis-à-vis others. Thus, it is likely that the average female or ethnic minority CEO possesses superior qualifications and/or abilities in comparison to other CEOs.

H1: Firms run by Occupational Minority CEOs demonstrate superior performance as measured by Tobin's Q and ROA.

2.2.2. Occupational minority and leadership in time of change

(Ryan and Haslam 2007) predicts that occupational minorities are more likely to accept leadership positions in organizations that are struggling, in crisis, or at risk of failing because the occupational minority candidate fears that he/she might not find a better offer. Consistent with this assertion, (Cook and Glass 2013) find that in times of crisis, occupational minorities are more likely to be appointed CEO. As such, we propose that if these CEOs possess superior leadership abilities then, we should expect firm performance to improve.

H2: Occupational minorities are more likely to be appointed CEO in struggling firms. Post their appointment, on average the firm performance improves.

2.2.3. Occupational minority and Corporate social responsibility

Barnett (Barnett 2007) defined CSR as "a discretionary allocation of corporate resources toward improving social welfare that serves as a means of enhancing relationships with key stakeholders." According to (Dahlsrud 2008), Corporate Social Responsibility (CSR) includes strategies businesses undertake that have voluntary social, environmental, and stakeholder dimensions that exhibit a positive impact on the community, society, and/or planet. While CSR strategies were initially viewed as "do-good" activities that distract organizations from their financial goals (Karnani 2010), they are increasingly deployed to support financial goals (Freeman, Wicks, and Parmar 2004; Schaefer 2008) and enhance organizational legitimacy and survival (Chiu and Sharfman 2011; Scott and Lane 2000).

Researchers commonly distinguish between substantive and symbolic CSR strategies (Okhmatovskiy and David 2012; Oliver 1991). Substantive CSR strategies involve complete CSR implementation. The firm's underlying systems and processes are altered in a holistic attempt to improve the status quo of a particular societal or environmental context such as closing the production loop by re-using manufacturing waste as a production input. Substantive CSR is more likely when stakeholders can monitor a firm's activities and easily exposes strategies that are only symbolic in nature (Campbell 2007). Symbolic CSR allows firms to attend to stakeholder demands without making substantive changes to their systems and operations, allowing firms to maintain legitimacy without significant strategic change (Meyer and Rowan 1977; Oliver 1991). Firms often deploy

symbolic CSR initiatives after an incident of socially irresponsible behavior is publicly exposed, or as a way to decrease CSR pressure that requires few internal changes (Krawiec 2003). We consider both types of CSR as valuable resources that can positively affect firm performance (Bansal 2005; Hart 1995; Russo and Fouts 1997; Sharma and Vredenburg 1998). Substantive CSR is employed to preserve a firm's reputation over the long run, whereas symbolic CSR helps mitigate the short-term consequences of a firm's socially irresponsible actions.

Seeing how symbolic CSR can achieve short term results, it can be leveraged to attain job security. (Barnea and Rubin 2010) argue that top management tends to over-invest in CSR activities to build their personal reputation as good global citizens. Accordingly, (Cespa and Cestone 2007) maintains that incumbent CEOs strategically choose CSR activities to generate support from social and environmental activists to reduce the probability of CEO turnover in a future period. Arguably, CEOs belonging to the occupational minority group have a higher perception of threat to their positions and need to increase their job security. Therefore, they are more likely to invest in symbolic CSR than other CEOs.

H3: Occupational minority CEOs initiate more Symbolic CSR.

Alternatively, CEOs can use CSR as a strategic resource to differentiate their firm's product in the market by signaling superior quality (Fisman, Heal, and Nair 2005; Jensen 2001; Calton and Payne 2003; Scherer, Palazzo, and Baumann 2006) suggest that CSR can also be used as a strategic resource to mitigate the potential conflict of interest between the firm's investing, and non-investing stakeholders. The argument being reduced agency problems among various stakeholders' should result in higher financial performance for the firm. This is a long-term perspective and therefore is more likely to be related to substantive CSR. Various studies looking into the moral and ethical compass of female vs male managers claim that women tend to have stronger moral standards than men (Eagly and Carli 2003). Therefore, we would expect female CEOs to invest more in substantive CSR. Studies relating board diversity and CSR suggest that the presence of females and ethnic minority directors is positively related to corporate philanthropy (Coffey and Wang 1998; Webb 2004; Williams 2003; Siciliano 1996). These studies indicate that women and minority directors are more interested in the welfare of various stakeholders. If this is indeed the case, we expect to find a positive relationship between occupational minority CEO and substantive CSR programs.

H4: Occupational minority CEOs initiate more Substantive CSR.

2.3. Data and Methodology

Our empirical analysis focuses on large US publicly traded companies. We obtain our data set from different sources. CEO and board related variables are from Institutional Shareholder Ser-

vices (ISS) database (contains data on S&P 1500 firms). Variables relating to corporate social responsibility (CSR) are formulated using MSCI KLD database (covers the largest 3000 US public firms). Further, firm performance variables and other control variables are from COMPUSTAT. After merging data from all these sources, our final sample consists of 11,605 firm-year observations for the period from 1998 to 2013.

2.3.1. CEO gender and ethnicity

We identify CEO gender and ethnicity, based on indicator variables available in ISS database. ISS provides biographical information, skills, affiliations, memberships, ownership and positions held pertaining to various directors on firm board for S&P 1500 firms. We form a gender indicator variable CEO female *(CEO Fem)* that takes the value of 1 if the CEO is a female, zero otherwise. Information on ethnicity classifies each officer into African-American, Asian, Caucasian, Hispanic, Middle-Eastern, Native American and Unknown. We remove all observations where the CEO's ethnicity is 'Unknown' to avoid incorrect identification. We collapse these categories into two broad ethnic groups: Caucasian *(CEO White)* and non-Caucasian. *(CEO Non-white)*. All non-white CEOs are identified as those belonging to the ethnic minority group. We categorize all female CEOs and non-white male CEOs as occupational minorities.(Cook and Glass 2014)

Table 2.1 provides the distribution of CEOs categorized on gender and ethnicity. Panel A of Table 2.1 shows that there has been an increase in women CEOs as well as ethnic minority CEOs over the sample period. For instance, non-white female CEOs witnessed a significant increase from 0.29% in 1998 to 4.06% in 2013 while the proportion of white female CEOs increased from 1.76% in 1998, peaked at 3.21% in 2006 and declining to 2.50% in 2013. (Ballinger and Marcel 2010) suggests that many firms are unable to smoothly transition to a new CEO frequently resorting to interim CEOs. We follow (Ballinger and Marcel 2010; Faccio, Marchica, and Mura 2016) to define an interim CEO as the one who holds the title of a CEO for less than two years. Panel A of 2.1 also reports the distribution of CEOs excluding interim CEOs. We find occupational minorities to hold more interim CEO positions relative to white male CEOs. For example, the proportion of female non-white CEOs decreased from 4.06% in 2013 to 3.56% excluding interim CEOs. However, the overall proportion of white male CEOs remains unchanged after excluding interim CEOs.

Panel B of Table 2.1 presents the statistics across 10 Fama-French Industries (Financial Industry and Utilities excluded). There is notable difference across industries in terms of occupational minority leadership. Specifically, more women CEOs are employed in the Wholesale industry (3.25%) followed by Consumer Non-Durables and Healthcare. The distribution of firm-year observations with non-white CEOs also varies across industries ranging from 0.75% in Consumer Durables to 3.11% in Telephone and Television Transmission Industries.

2.3.2. Corporate social responsibility

Our CSR data stems from the MSCI Kinder, Lydenberg, and Domini (KLD) database, which has been extensively used in prior research (Jayachandran, Kalaignanam, and Eilert 2013; Krüger 2015; Waddock and Graves 1997). The KLD data is well suited for CSR research because it is based upon multiple aspects of CSR (Waddock and Graves 1997). Firms are rated based upon their strengths and concerns in seven major categories – environment, community, human rights, employee relations, diversity, product, and governance. Thus, the KLD dataset collects CSR data for a total of fourteen indicators (please refer to Appendix D for an overview). We do not include strengths and concerns related to corporate governance because previous research has shown that KLD's corporate governance category differs from all other categories and is not directly associated with CSR (Krüger 2015), leaving 12 indicators of strengths or concerns across six categories.

Although many studies have offered important insights by adding the 12 KLD indicators into one overall CSR index (Borghesi, Houston, and Naranjo 2014; Ullmann 1985; Hull and Rothenberg 2008; Waddock and Graves 1997), information is lost when distinct and uncorrelated elements are summed into a formative scale (Carroll, Primo, and Richter 2016). We thus use principal component factor analysis to combine the 12 KLD factors to represent the same underlying latent construct (Prakash, Ravi, and Zhao 2017). Principal components analysis identifies (PCA) factors that maximize the explanatory power within a set of related variables. Although PCA is potentially sensitive to the units in which the underlying variables are measured, measurement units are not a concern here because the CSR ratings are simply the total number of concerns and strengths in each of the indicator variables. However, the number of areas of strengths and concerns varies from one category of CSR to another and, occasionally, from one year to another. Therefore, to facilitate aggregation of information across the categories and, more importantly, to facilitate comparison across years, we standardize the ratings within each year by calculating z-scores. Using eigenvalue one condition we find that exactly two principal components fit the criteria.

Based on PCA, we extract two complementary components that emerge for each firm-year and from the twelve transformed variables. Appendix F describes the PCA factor loadings and communalities across the CSR categories. These two components explain about 33% of all the variability across the twelve categories. The first principal component quantifies the commonality across the CSR strengths and CSR concerns (it loads positively on all strengths and concerns, except diversity concerns). We label this the first component Symbolic CSR *(Sym CSR)*, because it may be interpreted to include those firm practices that address the current concerns caused by a firm's activities especially in response to some socially irresponsible behavior. In other words, symbolic CSR strategies represent the immediate organizational responses to stakeholder concerns after an incident of socially irresponsible behavior is publicly exposed. The second component quantifies the contrasts across the CSR strengths and CSR concerns. It loads positively on all

CSR concerns and negatively on all CSR strengths. We label the additive inverse of the second component Substantive CSR *(Sub CSR)*, because it may be interpreted to include a broad array of CSR practices that are independent of current concerns in a firm while contributing to a firm's unique CSR strengths over time. In this context,substantive CSR is the inverse of the second component from PCA.

2.3.3. Firm Performance and Firm Value

We use two measures of firm performance and firm value. We use return on assets *(ROA)*, to measure the accounting performance of the firm. Consistent with (Adams and Ferreira 2009; Brockman, Rui, and Zou 2013), ROA is computed as the ratio of earnings before interest, taxes, depreciation and amortization to book value of assets. Following prior finance literature we use Tobin's Q to measure firm value. (Fang, Noe, and Tice 2009; Basu, Paeglis, and Rahnamaei 2016). Tobin's Q *(TobinsQ)* is computed as the ratio of market value of a firm to its book value. Market value is calculated as the book value of assets minus the book value of equity plus the market value of equity (See Appendix A for detailed description of variables used in the paper).

2.3.4. Control variables

We account for several board and firm characteristics that may impact the firm performance. We use log of total assets as a measure of size of a firm *(Ln Assets)* and Leverage *(Leverage)*, defined as total debt of a firm divided by market value of equity to measure the value of debt. Firm age *(Firm Age)* is the natural logarithm of firm age. Following (Ferreira and Laux 2007), we estimate firm age from each firm's first CRSP listing date. It accounts for the difference in life cycle of a firm. Standard deviation of ROA *(StDevROA)* is a standard proxy for the riskiness of investment decisions defined as the volatility of a firm's operating return on assets. We also control for Sales growth *(Sales Growth)*, the average growth in sales volume for a firm, Tangibility defined as the ratio of fixed assets to total assets and Capital expenditure *(CapEx)* scaled by total assets. Board characteristics proxy for managerial discretion in decision making and impact firm performance. We use log of total number of board directors to control for the size of the board *(board size)*. As research documents a positive relationship between corporate transparency and independent directors (Ferreira, Ferreira, and Raposo 2011), we expect independent directors to affect managerial decision-making process and control for fraction of independent directors *(Pct of ind dir)*. In addition, we also control for fraction of female directors *(Pct of fem dir)* as the presence of two or more women on the board have been found to be positively related to firm performance (Bennouri et al. 2018).

Table 2.2 provides summary statistics on firm performance and firm value variables, CSR variables and other key CEO, board and firm characteristics. To minimize the impact of extreme outliers, we winsorize all continuous variables at top and bottom 1%. The gender indicator variable *(CEO Fem)* has a mean of 0.0194 and the ethnicity indicator variable *(CEO Non-white)* has a mean of 0.107. The findings show that for the sample period, female CEOs represent only 1.94% of firm-year observations and non-white CEOs represent 10.7% of the firm-year observations. This is consistent with (Bugeja, Matolcsy, and Spiropoulos 2012), as they find female CEOs to represent 1.97% for their sample of S&P 1500 firms for the period 1998-2010. The two CSR variables, symbolic and substantive CSR have a mean of 0.721 and 0.056 respectively. The average ROA of firms is 13.3% and the average Tobin's Q is 1.896.

2.4. Results

2.4.1. Univariate Results

Table 2.3 provides the Univariate test results. It compares the firms headed by female CEOs to those with male CEOs. It also compares the firms headed by non-white CEOs to those with white CEOs. The mean difference in ROA between firms headed by women CEOs and male CEOs is 0.010, significant at 1% level. We also find firms headed by women CEOs to have a significantly higher firm value and significantly higher investment in symbolic and substantive CSR. The mean difference in ROA between firms headed by non-white CEOs and white CEOs is 0.006, significant at 10% level. Non-white CEOs also tend to invest significantly higher in symbolic and substantive CSR. The results are consistent with (McGuinness, Vieito, and Wang 2017), who find the presence of female and foreign national directors to be associated with higher CSR investment. We also find occupational minorities to occupy CEO positions of larger and younger firms relative to white-male CEOs. Further, firms headed by occupational minority CEOs have bigger boards and a higher percentage of independent and female directors.

2.4.2. Regression Analysis

In this section, we jointly test the effect of CEO gender and ethnicity on firm performance and firm value in a multivariate setting by controlling for firm and board characteristics. The dependent variables are firm performance *(ROA)* and firm value *(Tobin's Q)*. The main variables of interest are gender indicator variable *(CEO Fem)* and ethnicity indicator variable *(CEO non-white)*. We start by running the following OLS model:

$$ROA/Tobin'sQ_{it} = \beta_0 + \beta_1 CEOFem_{it} + \beta_2 CEONonwhite_{it} + \sum \beta_3 ControlVariables_{it} + \varepsilon_{it} \tag{2.1}$$

$$SymCSR/SubCSR_{it} = \delta_0 + \delta_1 CEOFem_{it} + \delta_2 CEONonwhite_{it} + \sum \delta_3 ControlVariables_{it} + \varepsilon_{it} \tag{2.2}$$

We include Fama-French 12 industry, year and firm fixed effects to control for variations in economic operations for our sample firms across years, firms and industries. We report test statistics and significance levels based on standard errors clustered by firm and year levels (Petersen 2009).

Table 2.4 and Table 2.5 presents the regression results from equation 2.1 and 2.2 respectively which tests our hypotheses. Return on assets *(ROA)* and *Tobin's Q* are the dependent variables for Table 2.4 and Symbolic *(Sym CSR)* and Substantive CSR *(Sub CSR)* are the dependent variables for Table 2.5. In Table 2.4, column (1), the coefficient of *CEO Fem* is positive and significant (0.021) at 1% level. We also find the coefficient of *CEO Fem* in column (4) to be positive and significant (0.444) at 1% level. The finding supports our first hypothesis that firms headed by women CEOs have higher firm performance and firm value. The difference in firm performance and firm value could be because of the fundamental difference between genders in terms of risk-taking attitudes, leadership styles, incentive structures and ethical considerations (Marianne 2011; Güner, Malmendier, and Tate 2008). However, it could also be attributed to differences in leadership emergence between male and female CEOs. Consistent with glass ceiling hypothesis, the potential existence of racial discrimination favors only the above-average women aspirants to reach the top. Hence, gender discrimination may result in the superior performance of female CEOs in comparison to their male counterparts. In columns (2) and (5), we control for ethnicity indicator variable *(CEO non-white)*. We find the coefficient of *CEO non-white* to be positive but insignificant, suggesting that CEO ethnicity does not have a significant impact on firm performance and firm value. This is consistent with (Carter, Simkins, and Simpson 2003). Moreover, there is a positive and significant coefficient on the interaction term *(CEO Fem*non-white)* shown in columns (3) and (6). The results indicate that firms headed by women CEOs from ethnic minority backgrounds have a higher tendency to perform better and have higher firm value. This is consistent with our first hypothesis. We further find that larger and younger firms in their growth stage have a higher ROA and Tobin's Q, consistent with (Faccio, Marchica, and Mura 2016). Further firms with low leverage, high sales growth and a higher percentage of women CEOs are found to be associated with better performance (Bugeja, Matolcsy, and Spiropoulos 2012). A higher board size is negatively related to firm value (Adams and Ferreira 2009).

Table 2.5 presents the results of the joint impact of CEO gender and ethnicity on corporate social responsibility. The dependent variables are symbolic CSR *(Sym CSR)* and substantive CSR *(Sub CSR)*. In columns (1) and (4), the coefficient of *CEO Fem* is positive and significant at 1% level. We also find the coefficient of CEO non-white in columns (2) and (5) to be positive and significant at 1% level and 10% level respectively. The results provide evidence that firms headed by occupational minority CEOs engage in higher CSR. This is consistent with our third and fourth hypotheses. Investment in symbolic CSR can help managers to build their personal reputation as good global citizens and attain job security (Barnea and Rubin 2010). CEOs belonging to the occupational minority group have a higher perception of threat to their positions and need to increase their job security. Hence they are more likely to invest in symbolic CSR. Consistent with prior studies relating to board diversity and CSR, we find the presence of females and ethnic minority directors is positively related to corporate philanthropy (Coffey and Wang 1998; Webb 2004; Williams 2003; Siciliano 1996). These studies indicate that women and minority directors are more interested in the welfare of various stakeholders. We further find larger and old firms to invest more in CSR. Firms with bigger boards and greater gender diversity also tend to engage in higher CSR. The results are consistent with (Prakash, Ravi, and Zhao 2017).

Overall, our results are consistent with our hypotheses underlying that CEOs from occupational minority groups perform better than their white male counterparts. We also find firms headed by women and non-white CEOs to have higher firm value measured by Tobin's Q. This is consistent with glass ceiling hypothesis. The discrimination faced by women and ethnic minorities while climbing the corporate hierarchical ladder acts as a filtration process and only the above-average can achieve CEO positions. The above-average ability and qualifications of minority CEOs thus result in better firm performance and firm value. Further, CEOs belonging to occupational minority groups have a greater threat to their position (Cook and Glass 2014) and are more likely to invest in CSR to build their personal reputation and enhance the welfare of the stakeholders.

2.4.3. Additional Model Specifications

Thus far, we have shown that CEO gender and ethnicity have a significant influence on firm performance, firm value and CSR investments by firms. In this section we use an alternate model to examine the impact of gender difference on firm performance, firm value and CSR. The analysis of covariance (ANCOVA) is a statistical procedure for looking at group effects on the outcome variable controlling for continuous explanatory variables. Developed and popularized by Sir Ronald Fisher (Fisher 1954), ANCOVA generates prediction equations for various levels of the categorical variable of interest and is widely used in biological clinical experiments to evaluate the difference in treatment effect between treated and non-treated groups. (Rosenbaum and Rubin 1984; Miller and Chapman 2001). Hence, in addition to the OLS model, we also run the ANCOVA model to

compare the differences in firm performance and CSR practices by male and female CEOs moderated by ethnicity. We generate a categorical variable *(CEOGenEthn)*, which takes the value of one if the CEO is female *(CEO Fem=1)* and is non-white *(CEO non-white=1)*, two if the CEO is female *(CEO Fem=1)* but is white *(CEO non-white=0)* and three if the CEO is male *(CEO Fem=0)* and non-white *(CEO non-white=1)*. The ANCOVA model is a conditional model that will test the differences for each of the three groups of the categorical variable *(CEOGenEthn)* with the base category, white male CEOs. The ANCOVA model is described as

$$ROA/Tobin'sQ = \beta_0 + \beta_1 G_{it} + \sum \beta_2 ControlVariables + \varepsilon_{it} \tag{2.3}$$

$$SymCSR/SubCSR = \delta_0 + \delta_1 S_{it} + \sum \delta_2 ControlVariables + \varepsilon_{it} \tag{2.4}$$

where G_{it} captures the different categories of *CEOGenEthn* and coefficient captures the impact of the difference in CEO gender and ethnicity on outcome variable. Specifically, it captures the average change in outcome variable dependent on the difference in female and male CEOs and white and non-white CEOs relative to the base category: white male CEOs.

Table 2.6 provides the results for the ANCOVA model. The coefficient of *CEO non-white female* in column (1) is positive and significant (0.065) at 1% level. Further, the coefficient of *CEO white female* and *CEO non-white male* is also positive but significant at 5% and 10% level respectively. The result confirms that firms headed by occupational minority CEOs are more likely to perform better than their white male counterparts. The difference in ROA for firms headed by non-white female CEOs and white male CEOs is the highest, followed by white female CEOs and non-white male CEOs. This is consistent with glass ceiling hypothesis. The average female executive from ethnic minority backgrounds who makes it to the position of CEO has had to go through relatively higher levels of scrutiny and accountability, vis-à-vis white female CEOs. The higher discriminatory filters make it hardest for ethnic minority women to reach CEO positions Those who reach the top are the best of the best amongst the group and hence perform the best. Column (2) confirms that firms headed by occupational minority CEOs have higher firm value relative to their male counterparts. The columns (3) and (4) affirms our hypotheses that CEOs from occupational minority groups engage in higher symbolic and substantive CSR relative to their white male counterparts.

2.5. Endogeneity Concerns

Our results suggest that firms headed by CEOs from occupational minority backgrounds have better performance, higher firm value and greater CSR contributions. However, concerns in the

prior literature suggest a self-selection bias in the CEO hiring process violating the randomization assumption. Women leaders may choose to work in certain types of firms or certain boards could be more inclined to hire women leaders (Huang and Kisgen 2013; Adams and Ferreira 2009). Further, our results could be driven by omitted firm characteristics that affect CEO gender, firm performance and CSR variables. In this section we adopt a propensity matched sample approach and a difference-in-differences analysis with CEO turnovers to rule out any potential endogeneity concerns.

2.5.1. Evidence from Matched Samples

To address biased estimation because of large gender disparity and ethnic disparity among CEO firm-year observations and potential omitted variables concern, we analyze differences in firm performance, firm value and CSR for each of the occupational minority subgroup CEOs and white male CEOs using a propensity matched sample approach. Following (Huang and Kisgen 2013), firm years with white female CEOs, non-white female CEOs and non-white male CEOs are matched with white male CEOs, based on observable firm, board and CEO characteristics. Specifically, to employ propensity score matching, we start by running a logit model that regresses the CEO gender and ethnicity variable *(CEO non-white female, CEO white female, CEO non-white male)* on a set of characteristics including total assets *(Ln (Assets))*, Leverage *(Leverage)*, sales growth *(sales Growth)* and Board size *(Board size)*, year and industry dummies. We then use propensity score to perform a nearest neighbor match without replacement. We compare each of the subgroups of occupational minority CEO firm-year observations with white-male CEO firm-year observations to re-examine the joint impact of CEO gender and ethnicity on firm performance, firm value and CSR investments.

Table 2.7 provides the results of the regressions on matched samples. Panel A of Table 2.7 reports the regression results of firm performance and firm value on each of the occupational minority subgroups relative to white-male CEOs. We consistently find that occupational minority CEOs perform better than their white-male counterparts. The coefficient of *CEO non-white female* is positive and significant (0.084) significant at 1% level. The evidence based on matched samples of non-white female CEOs and white-male CEOs in columns (1) and (4) shows that firms headed by non-white female CEOs perform significantly better and have higher firm value relative to white-male CEOs. In columns (2) and (5), the coefficient of *CEO white female* is also positive and significant (0.019 and 0.231) at 5% level. Consistent with prior results we find firms headed by white female CEOs have higher ROA and Tobin's Q relative to firms headed by white male CEOs. Comparing matched samples of non-white male CEOs and white male CEOs in columns (3) and (6), we consistently find that firms headed by non-white CEOs have higher firm performance and firm value relative to firms headed by white male CEOs.

Overall, the results confirm the glass ceiling hypothesis. The superior performance of executives from occupational minority group indeed shows that superiority of one gender over the other is not driving the results, but it is the result of discriminatory filters which permits only above average women and non-white male CEOs to reach these positions. Further, the average performance of non-white female CEOs emerges out to be the best followed by white female CEOs and non-white male CEOs. This shows that gender and race discriminatory practices have cumulative effects on the leadership emergence process. The finding that white-female CEOs demonstrate marginally superior performance relative to non-white male CEOs also suggests that gender discrimination is more intense relative to racial discrimination.

Panel B of Table 2.7 provides the regression results of symbolic and substantive CSR on each of the occupational minority subgroups relative to white-male CEOs. Consistently, we find occupational minority CEOs to outperform white male CEOs in symbolic and substantive CSR investments. In columns (1), (2) and (3), we find the coefficient of *CEO non-white female, CEO white female and CEO non-white male* to be positive and significant. This provides evidence that occupational minority CEOs initiate more symbolic CSR relative to their white male counterparts. (Ryan and Haslam 2007) suggests that occupational minority CEOs have a higher threat of job security as they are evaluated negatively. Hence, CEOs belonging to occupational minority groups initiate higher symbolic CSR to build their personal reputation and enhance their job security. (Barnea and Rubin 2010)

Panel B of Table 2.7 also provides evidence that occupational minority CEOs initiate higher substantive CSR. The coefficient of *CEO non-white female, CEO white female and CEO non-white male* is positive and significant confirming the higher initiation of substantive CSR by occupational minority CEOs relative to white-male CEOs. Consistent with (Coffey and Wang 1998; Webb 2004) we find occupational minority CEOs are more interested in the long-term welfare of the stakeholders.

2.5.2. Evidence from CEO turnovers

In addition to propensity score matching to address the endogenous concern, we examine CEO turnovers and the associated changes in firm performance and CSR investments. This analysis compares the differences in firm performance and CSR for the same firm due to changes in CEOs. Therefore, if any trends followed by the firms prior to a change in CEO impact the results, this difference-in-difference analysis using CEO turnovers should alleviate the bias.

We begin the analysis by running a logit regression to estimate the probability of hiring a CEO from occupational minority groups. (Ryan and Haslam 2007; Cook and Glass 2013) find that occupational minority CEOs are more likely to accept leadership positions in organizations that are struggling, in crisis, or at risk of failing because, the occupational minority candidate

fears that he/she might not find a better offer. The dependent variable in the logit regression is *CEO-Min* which takes the value of one if the CEO in firm-year observations is either a non-white female, white female or a non-white male, zero otherwise[3]. The main variable of interest is the change in firm performance prior to the transition to occupational minority CEOs. We calculate average ROA two years before the transition as well as three years before the transition. We also consider the change in ROA two years as well as three years prior to transition. We control for firm and board characteristics. Table 2.8 provides the results of the logistic regression results. The coefficient of *Avg ROA* and *Alt Avg ROA* is negative and significant at 5% level. Consistent with (Ryan and Haslam 2007), we find there is a higher likelihood of struggling firms to hire occupational minority CEOs. We further find larger firms with lower sales growth are more likely to hire occupational minority CEOs. The result supports our second hypothesis suggesting that CEOs from occupational minority groups are more likely to accept CEO positions at struggling firms.

We then run the regression results for the CEO turnover sample to re-examine the impact transition to occupational minority CEOs have on firm performance, firm value and CSR investments. Panel A of Table 2.9 reports the descriptive statistics for the sample of executive turnovers. Our CEO transitions sample contains 138 male-to-female transitions, 70 female-to-male transitions, 649 white to non-white transitions and 328 non-white to white transitions for the sample period 1998-2013. We find when firms transition to occupational minority CEOs, they experience a positive and significant increase in firm performance, firm value and CSR investments. The increase in firm performance and firm value is largest when the incoming CEO is a female. However, when the incoming CEO is a white-male, we find the coefficient to be negative but insignificant. This again shows that firms headed by occupational minority CEOs perform better, have higher firm value and initiate higher CSR relative to white male CEOs.

Panel B and Panel C of Table 2.9 provides the regression results for the CEO turnover sample. We calculate the change in firm performance *(change in ROA)* as the difference between ROA two years after transition (t+2) and one year prior to transition (t-1), where t is the year of CEO transition. We also calculate the change in firm value *(change in Tobin's Q)* and change in CSR as the difference between these variables two years after transition (t+2) and one year before transition (t-1). In Panel B of Table 2.9, we find the coefficient on *Male-to-female* is positive and significant at 1% level. This suggests that firms experience a significant increase in firm performance and firm value post-transition to female CEOs. Firms also experience a significant increase in firm performance and firm value following a white to non-white CEO transition. However, the coefficient on *female-to male* and *non-white to white* is negative and insignificant, which provides evidence for a decline in firm performance and value post-transition to a white-male CEO. Panel C of Table 2.9

[3]CEO Min represents Occupational Minority CEOs, adapted from (Taylor 2010)

consistently finds that firms transitioning to CEOs from occupational minority groups initiate more symbolic and substantive CSR. However, the coefficient of *female-to-male* and *non-white to white* is negative but insignificant. The results consistently show that CEO gender and ethnicity impacts CSR investments.

Overall, the results are consistent with glass ceiling hypothesis. The superior performance after transitioning to occupational minority CEOs shows that discriminatory filters which permit only above average women and non-white male CEOs to reach these positions resulting in better decision making. This is reflected in better firm performance, firm value and higher CSR investments.

2.6. Conclusion

Extant research in business research finds the presence of female gender in the C-suit seems to impact the corporation's performance and functioning in a positive and desirable manner. For example, (Faccio, Marchica, and Mura 2016) found that firms run by female CEOs have lower leverage, less volatile earnings, and a higher chance of survival than otherwise similar firms run by male CEOs. (Huang and Kisgen 2013) document that the propensity to make acquisitions is lower in companies with female CFOs. They attribute these results to lower risk-taking tendency of the female leadership. While this is definitely possible, we propose an alternate hypothesis. The existence of Glass-ceiling in organizational hierarchies potentially subjects women candidates to high levels of discrimination, vis-a-vis their male counterparts. This potentially prevents a disproportionately large number of female candidates from making it to the top. Those who do make it are of potentially of higher caliber than their average male counterparts in that position. Being of superior performance, these women demonstrate on average superior leadership abilities. Therefore, arguably, the glass-ceiling manifests in the form of superior performance of the average women in position of leadership.

An obvious implication of our glass-ceiling hypothesis is that, we should see similar performance and attributes among all occupational minorities who are subjected to the glass ceiling type discrimination. Our results do show that if we divide the sample of CEOs by gender (male vs. female) and ethnicity (white vs. non-white), we find that the average non-white female CEOs (two levels of discrimination: gender and ethnicity) are among the best performers while the average white-male CEO (no glass ceiling discrimination) is among the worst performer. We find that the white female CEOs (gender discrimination) demonstrate marginally superior performance vis-a-vis the average non-white male CEO (ethnic discrimination). A possible explanation for this could be that the gender based discrimination is potentially severer than the ethnic discrimination.

We believe that this study contributes positively to the discussion on gender and equality in workplace in at least two ways. First: it highlights the problem of discrimination against occu-

pational minorities rather than just gender. To the extent that all discriminations are morally and ethically wrong, recognizing the full scope of the problem is important. As our results show, over the last decade, the proportion of women in corporate leadership has increased. However, almost all the increase seems to be coming from simultaneous decrease in the proportion of non-white men CEOs. This is one diversity replacing another. The problem of workplace discrimination against occupational minorities seems to have only changed in nature not necessarily in severity. Second: Psychology research seems to suggest that once the social stereotypes and expectations are removed from the equation, the male and the female gender tend to be more alike than different. However when the bulk of the research is attempting to find differences between the genders, this can potentially orient society and organizations towards finding differences while downplaying the similarities. If so, they can be sometimes used to support prejudicial beliefs and discriminatory actions against one-group vs another.

A rather ominous prediction by (Schein 1973), "The strongly held attitude of "think manager-think male" among decision makers who are men will keep women confined to middle-level jobs."(Ryan, Haslam, et al. 2011) looked into CEO transition in time of crisis (firm performance declining). They found that men CEOs are more likely to turn down appointments in firms facing crisis. However, women CEOs are less likely to turn down the offer due to the fear of forgoing potentially the chance of a lifetime. A play on (Schein 1973), they coined the phrase "Think Crisis–Think Female". In this study, we have shown that behavior is not limited only to women CEOs. The same is witnessed of any occupational minority candidate. Thus, we hope this study will help tilt the above narrative to *"Think Crisis–Think occupational minority"*. By doing so, we hope that the ongoing debate in business research which has focused almost entirely around gender will open up to include more discussion around "glass-ceiling" and discrimination.

Table 2.1: Frequency Distribution of CEOs categorized by gender and ethnicity

The Table provides frequency distribution of sample CEOs. Panel A provides the frequency distribution of CEOs based on gender and ethnicity for the entire sample and excluding interim CEOs. Panel B provides the distribution of female and non-white led CEOs by industry

Panel A: Frequency Distribution on female and Non-white CEO led firms

	All					Excluding Interim				
	# firm-year obs	White (% of CEOs)		Non-White (% of CEOs		# firm-year obs	White (% of CEOs)		Non-white (% of CEOs)	
		Male	Female	Male	Female		Male	Female	Male	Female
1998	340	89.13	1.75	8.82	0.29	335	89.12	1.77	8.82	0.29
1999	395	89.12	1.78	8.35	0.75	391	89.25	1.77	8.21	0.76
2000	344	88.38	1.45	9.30	0.87	339	88.70	1.44	8.98	0.88
2001	590	87.64	1.36	10.16	0.84	582	87.89	1.38	9.88	0.85
2002	553	87.53	1.81	9.76	0.90	546	87.88	1.82	9.39	0.91
2003	914	88.19	1.85	8.97	0.99	907	88.33	1.88	8.77	1.01
2004	923	88.09	1.95	8.77	1.19	906	88.14	1.99	8.65	1.22
2005	794	88.29	2.91	7.55	1.25	783	88.32	2.93	7.47	1.28
2006	779	87.82	3.21	7.31	1.66	770	87.90	3.20	7.20	1.69
2007	592	89.09	2.13	6.08	2.70	584	88.84	2.16	6.24	2.76
2008	793	87.93	2.50	7.18	2.39	782	88.01	2.45	7.13	2.40
2009	845	87.34	1.78	8.40	2.48	836	87.51	1.74	8.29	2.46
2010	853	88.53	1.29	6.79	3.39	843	88.69	1.24	6.70	3.37
2011	963	86.72	2.29	7.26	3.63	950	86.70	2.30	7.21	3.78
2012	968	87.10	2.89	6.50	3.51	961	86.99	2.92	6.53	3.56
2013	959	86.88	2.50	6.56	3.51	951				
Total	11,605					11,466				

Panel B: frequency Distribution of Firms, Female and Non-white CEOs by Industry

Industry (2 digit SIC)	# of Firm-year observations	% of Female CEOs	% of Non-white CEOs
Consumer Non-Durables	869	2.18	1.95
Consumer Durables	407	0.73	0.75
Manufacturing	2234	1.45	1.27
Oil, Gas and Coal Extraction and Products	545	1.46	1.83
Business Equipment	2423	1.36	1.93
Telephone and Television Transmission	257	1.94	3.11
Wholesale and Retail services	1568	3.25	1.51
Healthcare	920	2.06	1.52
Utilities	787	1.77	1.65
Others	1595	1.56	0.81

Table 2.2: Sample Summary Statistics

The Table provides sample statistics for CEO gender, ethnicity and other firm and board characteristics. *CEO Fem* is CEO gender indicator variable that takes the value of 1 if CEO is a female, 0 otherwise. *CEO non-white* is a CEO ethnicity indicator that takes the value of 1 if CEO is non-white, 0 otherwise. *ROA* and *Tobin's Q* are measures of firm performance and firm value. Corporate social responsibility is captured by symbolic (*Sym CSR*) and substantive CSR (*Sub CSR*).

Variables	No of obs	Mean	Median	St Dev	25th Pctl	75th Pctl
Main Variables of Interest						
CEO Fem	11,605	0.0194	0	0.086	0	0
CEO Non-white	11,605	0.107	0	0.309	0	0
ROA	11,466	0.133	0.126	0.097	0.080	0.179
Tobin's Q	11,541	1.896	1.496	1.241	1.157	2.149
Sym CSR	10,740	0.721	0.065	2.318	-0.909	1.462
Sub CSR	10,740	0.056	0.046	1.387	-0.673	0.625
Firm Characteristics						
Ln Assets	11,605	8.440	8.319	1.576	7.294	9.448
Leverage	11,605	0.227	0.175	0.206	0.058	0.350
Ln (Firm Age)	11,099	2.522	2.639	0.515	2.302	2.890
Sales Growth	9,722	1.083	1.066	0.266	0.989	1.149
StDev ROA	10,881	0.039	0.028	0.040	0.0168	0.047
CapEx	10,877	0.071	0.034	0.146	0.018	0.067
Board Characteristics						
Board Size	11,466	5.783	8.00	0.768	4.00	10.00
Pct of Ind Dir	11,466	0.727	0.777	0.236	0.625	0.887
Pct of Fem Dir	11,466	0.104	0.090	0.135	0	0.166

Table 2.3: Univariate Analysis

The Table shows comparison of means of firm-level and board-level characteristics for for firm CEOs differentiated by gender and ethnicity.Panel A compares the means of firm performance, CSR and other firm and board level characteristics for firm-years headed by women CEOs to firm-years headed by male CEOs. Panel B compares the mean of firm performance, CSR and other firm and board level characteristics for firm-years headed by non-white CEOs to firm-years headed by white CEOs.Difference in means and their statistical significance is based on a t-test.The symbol ***,**,* indicate statistical significance at 1%, 5% and 10% level, respectively.

Variables	**Panel A: Univariate Analysis based on Gender**			**Panel B: Univariate Analysis based on Ethnicity**		
	Fem CEOs (1)	Male CEOs (2)	Difference (1)-(2)	Non-white CEOs (3)	White CEOs (4)	Difference (3)-(4)
ROA	0.143	0.133	0.010***	0.134	0.128	0.006*
Tobin's Q	2.173	1.892	0.281***	1.899	1.883	0.015*
Sym CSR	1.352	0.720	0.631***	1.363	0.653	0.709***
Sub CSR	0.176	0.055	0.120**	0.319	0.025	0.294***
Ln Assets	8.795	8.439	0.365***	8.804	8.401	0.402***
Leverage	0.217	0.227	-0.009	0.238	0.225	0.013**
Ln (Firm Age)	2.434	2.522	-0.088	2.490	2.525	-0.034
Sales Growth	1.085	1.082	0.002	1.087	1.082	0.005
StDev ROA	0.038	0.028	0.010*	0.0038	0.0039	-0.007
CapEx	0.068	0.071	-0.004*	0.059	0.073	-0.013***
Board Size	6.328	5.777	0.55**	6.141	5.748	0.392***
Pct of Ind Dir	0.777	0.727	0.050***	0.774	0.722	0.051***
Pct of Fem Dir	0.272	0.103	0.169***	0.129	0.103	0.025***

Table 2.4: Impact of CEO gender and ethnicity on Firm Performance and Firm Value: OLS Regression

We report panel data regression results on the joint impact of CEO gender and ethnicity on firm performance and firm value. ROA is the dependent variable for columns (1),(2) and (3) and Tobin's Q is the dependent variable for columns (4),(5) and (6). The main variables of interest are CEO Fem, CEO non-white and the interaction of *CEO Fem* and *CEO non-white*. We control for year, firm and industry fixed effects. The symbol ***,**,* indicate statistical significance at 1%, 5% and 10% level, respectively.

Dep Var	ROA			Tobin's Q		
	(1)	(2)	(3)	(4)	(5)	(6)
Intercept	0.044*	0.043*	0.043*	0.152	0.142	0.147
	(1.63)	(1.60)	(1.61)	(0.86)	(0.80)	(0.83)
CEO Fem	0.021***		0.011***	0.444***		0.358**
	(2.55)		(2.76)	(3.07)		(2.23)
CEO non-white		0.004	0.006		0.116	0.135**
		(0.73)	(1.01)		(1.98)	(2.27)
CEO Fem*non-white			0.053***			0.501***
			(3.54)			(3.37)
Ln Assets	0.013***	0.013***	0.013***	0.365***	0.368***	0.366***
	(3.26)	(2.73)	(8.66)	(3.46)	(3.66)	(3.55)
Leverage	-0.166***	-0.167***	-0.167***	-3.186***	-3.198***	-3.193***
	(3.68)	(2.73)	(3.73)	(3.01)	(3.10)	(3.08)
Ln (Firm Age)	-0.012***	-0.013***	-0.012***	-0.324***	-0.327***	-0.324***
	(3.10)	(3.15)	(3.09)	(7.54)	(7.61)	(7.55)
Sales Growth	0.050***	0.051***	0.051***	0.436***	0.439***	0.442***
	(7.62)	(7.64)	(7.66)	(6.17)	(6.20)	(6.24)
StDev ROA	-0.023	-0.021	-0.021	5.764***	5.821***	5.810***
	(0.61)	(0.55)	(0.57)	(4.30)	(4.41)	(4.41)
CapEx	0.064***	0.065***	0.065***	0.003	0.011	0.009
	(3.58)	(3.62)	(3.62)	(0.02)	(0.06)	(0.05)
Board Size	0.001	0.001	0.001	-0.204***	-0.205***	-0.207***
	(0.49)	(0.48)	(0.44)	(6.76)	(6.78)	(6.84)
Pct of Ind Dir	0.001	0.001	0.002	0.065	0.057	0.057
	(0.16)	(0.20)	(0.20)	(0.80)	(0.70)	(0.70)
Pct of Fem Dir	0.005***	0.003**	0.005**	-0.065	-0.024	-0.066
	(2.38)	(2.22)	(2.37)	(0.50)	(0.18)	(0.51)
No of obs	11,466	11,466	11,466	11,466	11,466	11,466
R-Squared	0.18	0.19	0.18	0.34	0.35	0.38
Firm/year/industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes

Table 2.5: Impact of CEO gender and ethnicity on symbolic and substantive CSR: OLS Regression

We report panel data regression results on the joint impact of CEO gender and ethnicity on CSR initiations.Symbolic CSR (*Sym CSR*) is the dependent variable for columns (1),(2) and (3) and Substantive CSR (*Sub CSR*) is the dependent variable for columns (4),(5) and (6). The main variables of interest are *CEO Fem, CEO non-white* and the interaction of CEO Fem and CEO non-white. We control for year, firm and industry fixed effects. The symbol ***,**,* indicate statistical significance at 1%, 5% and 10% level, respectively.

Dep Var	Sym CSR			Sub CSR		
	(1)	(2)	(3)	(4)	(5)	(6)
Intercept	-4.320***	-4.313***	-4.311***	-2.480***	-2.479***	0.147
	(7.54)	(7.58)	(7.57)	(2.57)	(2.57)	(0.83)
CEO Fem	0.112***		0.163	0.111***		0.316*
	(2.55)		(0.73)	(2.69)		(1.76)
CEO non-white		0.418***	0.429***		0.113*	0.141**
		(5.16)	(5.22)		(1.73)	(2.13)
CEO Fem*non-white			0.442***			1.110***
			(2.88)			(2.74)
Ln Assets	0.606***	0.601***	0.600***	0.254***	0.253***	0.253***
	(2.98)	(2.85)	(2.82)	(4.67)	(4.61)	(4.60)
Leverage	0.252*	0.258*	0.263*	-0.695***	-0.695***	-0.684***
	(1.71)	(1.76)	(1.79)	(5.88)	(5.89)	(5.80)
Ln (Firm Age)	0.057***	0.049***	0.050***	0.081*	0.083*	0.079
	(2.95)	(2.82)	(2.84)	(1.70)	(1.74)	(1.66)
Sales Growth	-0.801***	-0.819***	-0.819***	-0.041	-0.046	-0.046
	(8.13)	(8.35)	(8.35)	(0.51)	(0.58)	(0.58)
StDev ROA	1.196**	1.042*	1.040*	1.224***	1.185***	1.183***
	(2.14)	(1.87)	(1.87)	(2.74)	(2.65)	(2.65)
CapEx	-0.661**	-0.629**	-0.627**	0.116	0.124	0.129
	(2.46)	(2.35)	(2.34)	(0.54)	(0.57)	(0.60)
Board Size	0.221***	0.227***	0.228***	0.144***	0.146***	0.147***
	(5.25)	(5.42)	(5.43)	(4.26)	(4.32)	(4.36)
Pct of Ind Dir	0.358***	0.332***	0.332***	0.023	0.016	0.016
	(3.17)	(2.95)	(2.95)	(0.26)	(0.18)	(0.18)
Pct of Fem Dir	0.669***	0.688***	0.678***	0.901***	0.914***	0.900***
	(3.72)	(3.87)	(3.79)	(6.26)	(6.39)	(6.26)
No of obs	10,740	10,740	10,740	10,740	10,740	10,740
R-Squared	0.33	0.34	0.38	0.30	0.26	0.35
Firm/year/industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes

Table 2.6: Impact of CEO gender and ethnicity on firm performance, firm value and CSR: ANCOVA Regression

The Table reports panel data regression results on the joint impact of CEO gender and ethnicity on CSR initiations.Symbolic CSR (*Sym CSR*)is the dependent variable for columns (1),(2) and (3) and Substantive CSR (*Sub CSR*) is the dependent variable for columns (4), (5) and (6).The main variables of interest are *CEO Fem, CEO non-white* and the interaction of CEO Fem and CEO non-white. We control for year, firm and industry fixed effects. The symbol ***,**,* indicate statistical significance at 1%, 5% and 10% level, respectively.

Dep Var	ROA	Tobin's Q	Sym CSR	Sub CSR
	(1)	(2)	(3)	(4)
Intercept	0.064***	0.215	-3.916***	-2.293***
	(3.84)	(1.23)	(5.57)	(2.77)
CEO non-white Fem	0.065***	0.808***	0.130***	0.653***
	(3.06)	(3.44)	(3.27)	(2.77)
CEO white Fem	0.008**	0.396**	0.134***	0.331*
	(2.32)	(2.42)	(3.56)	(1.80)
CEO non-white Male	0.006*	0.125**	0.397***	0.194***
	(1.92)	(2.07)	(4.56)	(2.87)
Ln Assets	0.008***	0.341***	0.555***	0.263***
	(5.93)	(3.34)	(6.17)	(6.01)
Leverage	-0.175***	-3.417***	0.130***	-0.673***
	(7.94)	(3.56)	(2.89)	(5.90)
Ln (Firm Age)	-0.007	-0.296	0.041	0.010
	(1.68)	(1.22)	(0.69)	(0.23)
Sales Growth	0.048***	0.485***	-0.780***	-0.004**
	(7.27)	(6.98)	(7.76)	(2.05)
StDev ROA	-0.031	-5.670	1.073*	0.968**
	(0.82)	(1.32)	(1.88)	(2.19)
CapEx	-0.005	-0.325	-0.596***	-0.643***
	(0.32)	(0.08)	(2.63)	(3.67)
Board Size	0.003	0.143	0.056	0.084
	(1.28)	(1.52)	(1.50)	(0.89)
Pct of Ind Dir	-0.003	-0.100	0.309***	0.028**
	(0.35)	(1.24)	(2.65)	(2.31)
Pct of Fem Dir	0.005	0.022	0.747***	0.937***
	(0.37)	(0.17)	(3.98)	(6.44)
No of obs	11,466	11,466	10,740	10,740
R-Squared	0.12	0.13	0.24	0.12

Table 2.7: Joint impact of CEO gender and ethnicity on firm performance, firm value and CSR: Evidence from Matched Samples

The Table reports the estimation of the impact of CEO gender and ethnicity on firm performance and CSR using a propensity matched sample approach. Panel A of the Table provides regression results for the impact of CEO gender and ethnicity on firm performance and firm value while Panel B reports the impact of CEO gender and ethnicity on symbolic and substantive CSR. The symbol ***,**,* indicate statistical significance at 1%, 5% and 10% level, respectively.

Panel A: Joint impact of CEO gender and ethnicity on firm performance and firm value

Dep Var	ROA			Tobin's Q		
	(1)	(2)	(3)	(4)	(5)	(6)
Intercept	0.785***	-0.039	0.055	-3.470	-2.692	0.284
	(3.34)	(0.43)	(1.68)	(0.43)	(1.53)	(0.86)
CEO non-white Fem	0.084***			0.724***		
	(3.19)			(2.81)		
CEO white Fem		0.019**			0.231**	
		(2.06)			(2.25)	
CEO non-white Male			0.006*			0.068*
			(1.83)			(1.89)
Ln Assets	0.028	0.005	0.011	0.123	0.571	0.352
	(1.00)	(0.81)	(0.82)	(0.26)	(0.99)	(1.07)
Leverage	-0.217	-0.160	-0.175	-3.826	-4.502	-3.424
	(1.51)	(1.54)	(1.34)	(1.30)	(1.06)	(1.13)
Ln (Firm Age)	-0.001	-0.039	-0.002	-1.778	-0.346	-0.183
	(0.04)	(1.87)	(0.25)	(1.66)	(0.85)	(1.29)
Sales Growth	0.324**	0.058**	0.019**	5.155	1.477	0.212
	(2.08)	(2.19)	(2.09)	(0.97)	(1.55)	(1.36)
StDev ROA	1.274	0.923	0.200	7.785	7.610	6.624
	(1.11)	(1.05)	(1.26)	(0.92)	(1.53)	(1.38)
CapEx	0.421**	0.023**	0.003**	6.621	0.049	0.013
	(2.76)	(2.29)	(2.11)	(1.27)	(0.03)	(0.04)
Board Size	-0.067**	-0.010*	-0.001	0.257	-0.339	-0.186
	(2.11)	(1.83)	(1.21)	(0.24)	(1.40)	(1.70)
Pct of Ind Dir	0.118	0.020	0.006	5.140	0.745	0.366
	(1.02)	(0.48)	(0.37)	(1.30)	(0.92)	(1.26)
Pct of Fem Dir	0.264***	0.023***	0.001**	2.125***	0.669***	0.176***
	(2.27)	(2.42)	(2.04)	(2.35)	(2.62)	(2.71)
No of obs	120	246	1,368	120	246	1,368
R-Squared	0.16	0.15	0.14	0.12	0.14	0.13
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes

Panel B: Joint impact of CEO gender and ethnicity on symbolic and substantive CSR

Dep Var	Sym CSR			Sub CSR		
	(1)	(2)	(3)	(4)	(5)	(6)
Intercept	-7.317	-1.972	-4.627	3.063	0.550	-3.015
	(0.98)	(1.15)	(0.80)	(0.60)	(0.28)	(0.24)
CEO non-white Fem	0.917***			1.155***		
	(3.11)			(3.03)		
CEO white Fem		0.027**			0.351***	
		(2.08)			(2.90)	
CEO non-white Male			0.381***			0.126***
			(2.81)			(2.32)
Ln Assets	1.285	0.609	0.596	0.116	0.294	0.352
	(0.92)	(0.28)	(1.38)	(0.39)	(0.25)	(0.57)
Leverage	-0.724	-0.787	-0.183	-3.158	-1.543	-1.151
	(0.27)	(0.91)	(0.48)	(1.69)	(1.58)	(1.30)
Ln (Firm Age)	-0.678	0.273	-0.005	0.417	-0.961	0.020
	(0.68)	(0.69)	(0.04)	(0.61)	(1.15)	(0.20)
Sales Growth	-5.383	-2.539*	-0.608*	-3.011*	-0.135*	-0.059*
	(1.09)	(1.74)	(1.79)	(1.89)	(1.83)	(1.82)
StDev ROA	-0.621	-0.627	-1.280	3.440	9.215*	3.256*
	(0.08)	(0.13)	(0.80)	(0.64)	(1.79)	(1.90)
CapEx	6.792	-1.628	-0.536	-0.068	-2.031	-0.355
	(1.41)	(1.09)	(0.98)	(0.02)	(1.20)	(0.93)
Board Size	0.978	0.012	0.105	1.111	0.135	0.209
	(0.98)	(0.05)	(1.17)	(1.62)	(0.50)	(1.31)
Pct of Ind Dir	8.695**	0.386**	0.662**	4.635*	0.105**	0.126*
	(2.38)	(2.49)	(2.29)	(1.85)	(2.12)	(1.72)
Pct of Fem Dir	0.254*	0.252**	0.836*	5.136*	1.157*	0.749**
	(1.81)	(2.24)	(1.89)	(1.82)	(1.98)	(2.42)
No of obs	116	232	1,352	116	232	1,352
R-Squared	0.13	0.13	0.11	0.10	0.13	0.11
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes

Table 2.8: Logistic regression results of CEO gender and ethnicity on firm performance

The Table reports the logistic regression results to test the likelihood of occupational minorities to occupy CEO positions.The dependent variable is average ROA computed as the average ROA two years and three years prior to CEO transition to occupational minority CEO. For robustness, we also use two-year and three-year change in ROA as the dependent variable. We control for firm-level and board-level characteristics.We also report the likelihood ratio.The symbol ***,**,* indicate statistical significance at 1%, 5% and 10% level, respectively.

Dep Var: CEO-Min				
Avg ROA	-0.326**			
	(2.28)			
Alt Avg ROA		-0.347**		
		(2.27)		
Change in ROA			-0.334*	
			(1.97)	
Alt Change in ROA				-0.029**
				(2.05)
Ln (Assets)	0.202**	0.190*	0.205*	0.192*
	(2.03)	(1.96)	(1.95)	(1.97)
Leverage	1.616	1.624	1.620	1.663
	(1.73)	(1.73)	(1.74)	(1.78)
Ln(Firm Age)	0.546	0.593	0.548	0.603
	(1.63)	(1.75)	(1.64)	(1.78)
Sales Growth	-0.531**	-0.521**	-0.531**	-0.510**
	(2.08)	(2.02)	(2.11)	(2.04)
CapEx	-0.499	-1.383	-0.425	-1.495
	(0.18)	(0.48)	(0.16)	(0.52)
Board size	-0.318**	-0.345**	-0.324**	-0.355**
	(2.38)	(2.56)	(2.43)	(2.64)
Pct of Ind Dir	0.048**	0.036**	0.051**	0.011**
	(2.12)	(2.09)	(2.13)	(2.03)
Pct of Fem Dir	1.333**	1.282*	1.349**	1.286*
	(2.00)	(1.92)	(2.02)	(1.92)
No of obs	7,832	7,832	7,641	7,635
Likelihood Ratio	24.06***	23.43***	22.74***	23.62***

Table 2.9: Joint impact of CEO gender and ethnicity on firm performance, firm value and CSR: Evidence from CEO turnovers

Panel A the Table reports descriptive statistics for CEO turnover sample over the sample period. We identify Male-to-Female, Female-to-Male, White-to-Non-white and Non-white-to-White CEO transitions and report one-year change in firm performance, firm value and CSR post CEO transitions. Panel B reports the regression results for impact of CEO transitions on change in firm performance and firm value. Change in firm performance and Change in firm value is calculated as difference in ROA and Tobin's Q one year after transition (t+2) and one year prior to transition (t-1). Panel C reports the regression results for impact on CEO transitions on change in symbolic and substantive CSR. Change in symbolic and substantive CSR is calculated as the difference in CSR two years post transition (t+2) and one year prior to transition (t-1).The symbol ***,**,* indicate statistical significance at 1%, 5% and 10% level, respectively.

Panel A: Descriptive Statistics

Variables	No of obs	Change in ROA	Change in Tobin's Q	Change in Sym CSR	Change in Sub CSR
Male-to-Female (M-F)	138	0.028***	0.397**	0.408*	0.222**
Female-to-Male (F-M)	70	-0.007	-0.397	-0.518**	-0.039*
White-to-Non-white (W-NW)	649	0.013*	0.251*	0.149*	0.100**
Non-white-to-White (NW-W)	328	0.005	-0.101	-0.109*	-0.050*

Panel B: Joint impact of CEO gender and ethnicity on change in firm performance and firm value: Regression Analysis

Dep Var:	Change in ROA				Change in Tobin's Q			
Intercept	0.072**	0.071**	0.071**	0.071**	0.072	0.850*	0.852	0.852
	(2.22)	(2.20)	(2.21)	(2.20)	(1.22)	(1.99)	(1.00)	(1.00)
Male-to-Female	0.351***				1.276***			
(M-F)	(3.18)				(2.88)			
Female-to-Male		-0.035*				-0.289*		
(F-M)		(1.85)				(1.89)		
White-to-Non-white			0.020**				0.148*	
(W-NW)			(2.46)				(1.87)	
Non-white-to-White				-0.016				-0.069
(NW-W)				(1.64)				(1.55)
Firm level Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Board Level Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-Squared	0.12	0.11	0.13	0.12	0.13	0.11	0.13	0.12

Panel C: Joint impact of CEO gender and ethnicity on symbolic and substantive CSR: Regression Analysis

Dep Var:	Change in Sym CSR				Change in Sub CSR			
Intercept	0.384	0.401	0.386	0.384	0.072	0.176	0.173	0.181
	(1.39)	(1.45)	(1.40)	(1.39)	(1.22)	(0.75)	(0.74)	(0.77)
Male-to-Female	1.083***				0.566***			
(M-F)	(2.73)				(2.68)			
Female-to-Male		-0.149*				-0.127***		
(F-M)		(1.88)				(2.58)		
White-to-Non-white			1.024**				0.241**	
(W-NW)			(2.18)				(2.17)	
Non-white-to-White				0.094				-0.152**
(NW-W)				(0.59)				(2.11)
Firm level Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Board Level Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-Squared	0.09	0.10	0.11	0.11	0.12	0.10	0.09	0.10

Chapter 3

Obstacles beyond Glass Ceiling: The impact of female leadership on Earnings Management

3.1. Introduction

An increasing number of women have successfully shackled the glass ceiling by reaching the upper echelons of the corporate sectors. With increased attention towards gender diversity in C-suits, several studies examine the potential barriers women face on their way to the top as well as the role of women in shaping corporate outcomes. (Cook and Glass 2013; Adams and Ferreira 2009; Kim and Starks 2016). Recently, scholarly attention has also shifted towards understanding the potential barriers women face after attaining senior corporate roles. Theoretical studies find that women leaders face significant constraints post-promotion to key leadership positions (Bowles 2012; Glass and Cook 2016). This form of discrimination is called 'glass cliff', whereby women are assigned to leadership positions riskier than men, experience heightened scrutiny and exaggerated stereotypes (Ryan and Haslam 2005; Ryan and Haslam 2007; Bruckmüller et al. 2014). The challenges women face after occupying top executive positions shape their leadership styles, attitudes and decision-making process. Whether gender differences in leadership emergence due to glass cliff impacts corporate outcomes is a fundamental question not yet answered in the finance literature. The question is particularly important considering the emerging worldwide trend towards gender equality. In this paper we advance the current finance research by examining the impact managerial power has on the relation between CEO gender and financial reporting quality.

A growing body of finance research concurs that female directors and managers have a significant impact on corporate decision making (Levi, Li, and Zhang 2014; Huang and Kisgen 2013; Francis et al. 2015). However, the literature does not show a clear consensus on whether women

at leadership positions benefit or detriment reporting quality. Prior Empirical evidence shows that female executives are more diligent monitors than their male counterparts enhancing financial reporting quality (Betz, O'Connell, and Shepard 1989; Gul, Fung, and Jaggi 2009; Krishnan and Parsons 2008). The Presence of women on corporate boards is also associated with reduced corporate scandals and frauds(Gul, Srinidhi, and Ng 2011; Cumming, Leung, and Rui 2015). In addition, women executives are found to be more cautious which helps improve the overall quality of board decisions (Luo, Xiang, and Huang 2017). The rationale offered for the above evidence is that women are fundamentally more ethical and risk averse than their male counterparts (Barua et al. 2010; Watson and McNaughton 2007).

In contrast, (Lakhal et al. 2015), using a sample of French-listed firms document that female CEOs and CFOs do not reduce earnings management in firms. A few studies suggest no evidence of CEO gender influences on earnings management (Ye, Zhang, and Rezaee 2010; Yu et al. 2010). In addition, (Harris, Karl, and Lawrence 2019) finds CEO gender differences in earning management behavior to vanish at high levels of equity-based compensation. This evidence is supported by a growing body of psychology and management literature that implies no manifestation of gender-based differences in ethical standards and risk-taking behaviors within corporate boardrooms (Hyde 2005; Cook and Glass 2013). (Adams and Ferreira 2009) finds that women who pursue leadership positions are rather like men to ensure survival in the predominantly male environment. The research further finds women executives to be more risk loving than their male counterparts.

Based on the above arguments, our paper aims to examine two key research questions. Firstly, we examine the impact of CEO gender on earnings management. Although previous studies have examined the effect of gender diverse boards on earnings management, the impact of CEO gender on earnings management is still debatable given the mixed evidence in the literature. Secondly, previous empirical studies mainly provide evidence on gender differences in ethical standards and risk aversion in shaping earnings management behavior of women CEOs. But to our knowledge, ours is the first study to consider discrimination and glass cliffs that women CEOs face, which might impact their earnings management behaviors.

Role congruity theory (Eagly and Karau 2002) suggests that individuals are judged with respect to the congruence between their characteristics dictated by their gender stereotypes and the requirements of the job that they occupy. Women CEOs engaging in earnings management creates incongruity between feminine stereotypes and masculine qualities of a leader. This leads to negative expectations and evaluations about the performance of women CEOs (Eagly and Johnson 1990; Eagly and Karau 2002; Powell, Butterfield, and Bartol 2008). To test the glass cliff hypothesis and role congruity theory, we examine if CEO power distorts the CEO gender and earnings management relationship. Prior studies document the success of CEOs in manipulating perfor-

mance critically depends on their power to influence decisions (Morck, Shleifer, and Vishny 1988; Adams, Almeida, and Ferreira 2005). Powerful CEOs are found to pressurize CFOs to report biased earnings performance (Friedman 2014; Feng et al. 2011). Further, powerful CEOs are subject to weaker board monitoring, reduced scrutiny and a higher incentive to withhold information from the shareholders (Fracassi and Tate 2012). Given that power can act as a stimulus that can shift managers' focus, we hypothesize that CEO gender and earnings management relationship distorts with increased CEO power. That is, in a powerful CEO setting, women CEOs are subject to less scrutiny and have an opportunity to influence the decision-making process.

To empirically answer our research questions, we employ a panel of over 1400 listed firms for the period 2000-2016. We collect demographic information on CEOs using ISS database and generate an indicator variable *CEO Fem* which takes the value of one if the CEO is a female, zero otherwise. Following prior literature, we use CEO duality and CEO pay slice to capture CEO power (Bebchuk, Cremers, and Peyer 2011; Grinstein and Hribar 2004). Further, we use real activities manipulations and absolute value of discretionary accruals as proxies of earnings management (Roychowdhury 2006; Jones 1991). We find that magnitude of earnings management is significantly lower for firms headed by women CEOs. We then jointly test the effect of CEO gender and power on earnings management. The results show that as the power with CEOs increases, no significant relation between CEO gender and earnings management exists. The impact of CEO power is economically important as the coefficient estimate for earnings management in the baseline model suggests the presence of women CEOs to be associated with a 0.448 percentage point decline in earnings management, but for powerful women CEOs, the coefficient estimate shows a 0.317 percentage point increase in earnings management. We further partition the sample based on CEO duality and find women CEOs to engage in less earnings management only in the absence of power. For the sub-sample of powerful CEOs, no significant difference in earnings management is found between male and female CEOs. This is consistent with the glass cliff hypothesis and role congruity theory whereby power in the hands of women executives gives them the opportunity to overcome the "second wave" of gender discrimination after glass ceiling and exert influence over the management decisions (Ryan and Haslam 2007).

Consistent with prior gender studies, our study faces the challenges of small female CEO sample size, selection bias and omitted variable concerns (Huang and Kisgen 2013; Adams and Ferreira 2009; Adhikari 2012). In order to address these endogeneity concerns, we rely on methodological techniques accepted in the literature, including propensity score matching, instrumental variable approach and difference-in-difference analysis. Our results are robust to these techniques and support our hypotheses. Our difference-in-difference analysis using CEO turnovers shows that a male-to-female CEO transition results in a significant decline in earnings management only if the incoming women CEO holds low managerial power. Considered in entirety, our results suggest

that glass cliffs and role incongruities play an important role in shaping the earnings management behavior of women CEOs.

Our study has important practical implications. Its main contribution is to the literature on CEO gender diversity as we provide additional evidence of how behavioral aspects of women CEOs can affect corporate policies. Prior studies document that increased gender diversity in corporate boardrooms is associated with positive corporate outcomes. One of the key elements of this relation is fundamental differences in genders. However, our study identifies a previously unexplored factor, glass cliff, as an important factor dictating earnings management behavior of women CEOs. Secondly, we add to the growing line of research studying the impact of managerial characteristics on corporate outcomes. Our study extends the recent literature that examines the role of CEO traits influencing corporate investments and financial policies (Malmendier and Tate 2005; Frye and Pham 2018; Jiang, Zhu, and Huang 2013). Thirdly, our study is also related to the literature examining the economic consequences of managerial power on various firm outcomes. Consistent with (Fracassi and Tate 2012), we find powerful CEOs are subject to weaker board monitoring, can influence decisions and exert pressure to report biased performance measures.

The remainder of the paper is organized as follows. We discuss the relevant literature and develop testable hypotheses in Section 2 and 3. Section 4 discusses the data, sample collection and the methodology used while Section 5 sets out the results. Section 6 presents the additional model specifications following by concluding remarks.

3.2. Theory, Literature and Hypothesis Development

3.2.1. Earnings Management Overview

Earnings management refers to the distortion of reported firm financial performance and is one of the salient self-serving behaviors. A large body of literature suggests that to pursue short term objectives, managers manipulate earnings that have a detrimental impact on shareholder wealth (Farooqi, Harris, and Ngo 2014; Graham, Harvey, and Rajgopal 2005). According to the long established stream of finance literature, agency conflict between managers and shareholders lead managers to extract private benefits at the cost of shareholder wealth. These managers, to keep their jobs, even if are no longer competent, inflate earnings to avoid their dismissal under poor performance. Consequently, such managerial self-serving behaviors mislead shareholders' about corporate performance and its outcomes (Cheng and Warfield 2005; Bergstresser and Philippon 2006). Extant literature documents the existence of earnings management to meet and beat short term targets and avoid documenting earning declines and losses (Degeorge, Patel, and Zeckhauser 1999; Brown and Higgins 2001; Burgstahler and Eames 2003; Daske, Gebhardt, and McLeay 2006; Myers, Myers, and Skinner 2007).

Many studies demonstrate that earnings management can be of two types, the opportunistic use of accruals to inflate earnings and real activities manipulation to increase current earnings (Schipper 1989; Healy and Wahlen 1999). Accrual based earnings management obscures the true financial performance by changing the accounting methods or estimates and have become easy to detect considering tighter regulations and accounting regimes (Jones 1991; Dechow and Dichev 2002). Real earnings management, on the other hand alters the execution of real business transitions. As the manipulation of real transactions (discretionary expenses and production costs) are harder to detect, more and more managers have a greater willingness to resort to real earnings management (Roychowdhury 2006; Cohen, Dey, and Lys 2008). (Graham, Harvey, and Rajgopal 2005) report 78% of the managers surveyed use real activities to manipulate earnings while only 7.9% state using accrual-based earnings management.

3.2.2. Behavioral biases beyond Glass Ceiling: Role Congruity Theory

Glass ceiling, concrete walls, sticky floors and career labyrinths are often used as metaphors to describe transparent barriers that prevent women from moving up the corporate ladder beyond a certain point (Morrison et al. 1987). While most of the academic research investigates the mechanisms by which gender diversity in boardroom adds corporate value, a relatively small body of work seeks to examine the challenges female leaders experience post-promotion to key executive roles. With reference to women leaders, role congruity theory finds that prejudice occurs based on incongruity between the leader roles and the female gender roles. (Eagly and Karau 2002; Heilman 2001). The incongruity presents challenges for female leaders in two forms. First, women are evaluated less favorable than men as potential leaders because leadership qualities are considered stereotypical of men (Schein 1973; Koenig et al. 2011; Gorman 2005). Corporate leadership positions are stereotyped as masculine work and opposed to women, cultural schemas associate only men to successfully fulfill leadership roles (Britton 2001; Schein 2001). Second, leadership behavior enacted by women is evaluated less favorably than equivalent behavior in men because it is perceived as a less desirable trait in women (Eagly and Karau 2002; Schock et al. 2019). These biases lead to negative evaluations for female leaders irrespective of their ability, qualifications and performance (Eagly 2007; Eagly and Karau 2002). Further, the animosity towards female leaders leads to excessive scrutiny of their performance (Kanter 1977). For instance, (Davies-Netzley 1998) finds that female leaders perceive themselves as "outsiders on the inside" and are under constant scrutiny to outperform their male peers. Women leaders are negatively evaluated for being voluble when in power, while men are appreciated for the same when in leadership positions (Brescoll et al. 2012). Shareholders reaction to the announcement of women CEO is significantly more negative to the announcement of male CEO appointment (Lee and James 2007). Indeed, unlike men, women face a threat of negative evaluations if they engage in authoritarian behav-

ior despite needed for effective leadership (Rudman 1998; Livingston, Rosette, and Washington 2012). In the corporate setting, role incongruity may create resistance for women CEOs in the form of intense board monitoring and increased board scrutiny (Hermalin and Weisbach 1998; Wintoki, Linck, and Netter 2012).

3.2.2.1. CEO Gender and Earnings Management

There has been increased pressure around the globe towards gender equality in C-suites (Ahern and Dittmar 2012). The issue of correctly reporting financial numbers is a monetary and ethical dilemma and the existing literature finds female representation in boards as an important factor. Recent finance literature finds gender-based ethical decision making has a positive impact on financial reporting. (Cumming, Leung, and Rui 2015) find that the presence of women on boards reduces corporate misconduct. Similarly, (Gul, Srinidhi, and Ng 2011; Francis et al. 2015) find women representation in management teams improves the firm's accounting policies. However, despite some prior literature documenting a positive association between gender diversity and various corporate outcomes, differences in gender characteristics at top leadership positions and otherwise lacks a theoretical framework in psychology as well as management literature. (Hyde 2005) did a meta-analysis of 46 studies and found few psychological differences between genders. Further, gender differences can and do emerge in varying conditions, but can be reversed with a change in circumstances or environment. Similar results were found in studies on gender differences in aggression, helping behaviors, conversation interruption as well as athletic performance (Lightdale and Prentice 1994; Eagly and Crowley 1986; Anderson and Leaper 1998; Hively and El-Alayli 2014). The management literature studying female leadership finds no significant gender differences at top executive levels. For instance, (Adams and Funk 2012) find female leaders to be slightly more risk loving than their male peers. Further, they are less traditional and security-oriented relative to their male counterparts.

Considered in entirety, the impact of women in C-suites and leadership positions on various financial outcomes is still an ongoing debate including the impact on earnings management. On one hand, (Srinidhi, Gul, and Tsui 2011) find female directors to reduce earnings management. Earnings quality is also found to be positively associated with female representation on board as women executives are found to follow more conservative financial reporting strategies (Krishnan and Parsons 2008). (Na and J. Hong 2017) find male CEOs to aggressively use discretionary accruals and real earnings manipulation to inflate current earnings, while female CEOs do not. On the other hand, (Lakhal et al. 2015) find female CEOs and CFOs do not affect earnings management. (Yu et al. 2010; Barua et al. 2010) report that female CFOs are associated with lower earnings management, but not female CEOs. Some studies further find no association of gender with earnings management (Ye, Zhang, and Rezaee 2010).

3.3. Hypothesis Development

As aforementioned, prior studies fail to take into consideration the challenges women leaders face post promotion to key executive roles, which impact their behavior and attitude towards earnings management. This oversight can help explain the conflicting results in the prior literature. With psychology and management literature attesting lack of significant difference between genders and based on the role congruity theory, unlike men, female leaders face intense scrutiny from insiders and stakeholders and are less likely to engage in earnings management. Importantly, not only because women leaders are perceived as less capable and qualified, but because it is not in line with their 'expected' gender roles. Women are expected to exhibit communion attributions associated with cooperation, welfare, honesty and sustainability (Bakan 1966; Wood and Eagly 2012; Eagly, Wood, and Diekman 2000). In other words, if women resort to earnings management, they will be viewed as less competent and capable to perform and also evaluated negatively as they fail to conform to their gender roles. As a result, decision makers will replace them for male leaders perceived to be more competent and capable. We therefore propose the following hypothesis:

Hypothesis 1: Firms headed by Female CEOs engage in less earnings management than firms headed by Male CEOs.

3.3.1. The moderating role of CEO power

The upper echelons literature has emphasized the role of CEOs in the firm strategy and decision-making process with mixed arguments pertaining to positive and negative repercussions of CEO power (Hambrick and Mason 1984; Sturm and Antonakis 2015). Being an architect of the firm's overall strategy, a powerful CEO can exert significant influence on the board and the decision-making process detrimental to firm performance. Extant literature suggests CEO power to negatively impact profitability and shareholder wealth (Daily and Johnson 1997). Based on an agency cost perspective, (Adams, Almeida, and Ferreira 2005) find that the powerful CEOs exert their will and influence financial reporting significantly more than less powerful CEOs. Powerful CEOs are also found to exert greater pressure on CFOs to involve in material accounting manipulations (Feng et al. 2011). Consistent with this notion, several studies report that greater CEO power leads to lower quality of earnings (Adams, Almeida, and Ferreira 2005; Efendi, Srivastava, and Swanson 2007). Managerial Power theory (Bebchuk, Fried, and Walker 2002; Bebchuk and Fried 2004; Ntim et al. 2019) contends that powerful CEOs exert their power over the board in the compensation setting process, which allows them to extract rents from the firm. Powerful CEOs are also found to have higher compensation and higher bonuses for mergers and acquisitions (Core, Holthausen, and Larcker 1999; Grinstein and Hribar 2004).

Therefore, while female CEOs may be less inclined towards earnings management, increased

CEO power is likely to have a mitigating effect on the relation. Increased CEO power can lead to reduced scrutiny and increased influence over decision making. Specifically, in the absence of power, CEO's ability to effective leadership may be hampered, especially if there is a conflict between the board and top management. On the other hand, increased CEO power provides a platform to align the firm's strategic vision with the board (Alexander, Fennell, and Halpern 1993; Anderson and Anthony 1986). Further, CEOs can influence the tone of earnings management by the appointment of CFO and other board members who share their preferences (Bishop, DeZoort, and Hermanson 2017; Carcello et al. 2011). This allows CEOs to exert pressure on reporting judgments and decisions. Previous studies provide evidence of increased earnings management as well as managers' preferences for reporting qualitative financial reporting with higher CEO stock-based compensation (Burns and Kedia 2006; Yermack 1997). Extending this line of research, higher CEO power is likely to induce a stronger incentive to portray an overly optimistic picture of the firm's earnings. In other words, CEO power will lead to reduced scrutiny and more decision-making capability for women CEOs. Hence, we theorize that while female CEOs engage in less earnings management than male CEOs, gender differences in earnings management to decline with increased CEO power. Thus, we hypothesize:

Hypothesis 2: Firms led by powerful Female CEOs exhibit similar earnings management as firms headed by powerful Male CEOs.

3.4. Data and Variable Construction

3.4.1. Data and sample selection

We begin constructing our sample using Institutional Shareholder Services (ISS) directors and ExecuComp database, which provides time series data for top executives in S&P 1500 firms. We define CEO in a given year as a person identified as CEO by the ISS database (Employment title-CEO), collect the name and gender of all CEOs, (Female and Director-Full Name) and board level variables from years 2000 to 2016. We refine the sample by eliminating firms in the financial services (SIC 6000-6999) and utilities industry (SIC 4900-4999) because of their regulatory requirements. We collect executive salaries and ownership using ExecuComp database. We obtain accounting data from Compustat to construct earnings management and control variables. (See Appendix B for definition of all variables used in the study). Our final sample contains 11,207 firm-year observations from 2000-2016, including 496 female CEOs firm-year observations. For each firm-year observation, we create an indicator variable *CEO Fem* that equals one if the firm is headed by a woman, and zero otherwise.

3.4.2. CEO Power

Prior studies have used a wide variety of measures for executive power (Adams, Almeida, and Ferreira 2005; Hill and Phan 1991). We use the two most relevant and comprehensive variables based on the construct of duality and centrality (Grinstein and Hribar 2004). For CEOs, duality is determined by whether the CEO is also the chairman of the board. Duality captures the CEO's ability to influence policy and decision making by having formal authority over the board and management. (Bebchuk, Cremers, and Peyer 2011) points out that CEO pay slice (CPS) is useful to measure the centrality of the CEO in the top management team. Centrality measures the relative importance (ability, contribution and power) of the CEO. Unlike other objective measures, CPS captures the dimensions of CEO's role beyond merely holding the position of chair. Also, because CPS is based on compensation information of executives in the same firms, it controls for any firm specific characteristics that affect the average level of power held by the CEO (Liu and Jiraporn 2010). Hence, for robustness, we followed (Bebchuk, Cremers, and Peyer 2011) and use CEO pay slice as the second measure of CEO power. CEO pay slice (CPS) calculated as "the ratio of CEO total compensation (salary, bonus and equity-based, reported as *tdc1* in ExecuComp) to the combined total compensation of top five executives (including CEO) in a firm", represents the relative value assigned to the CEO by the board and the power of the CEO within the management team. (Choe, Tian, and Yin 2014; Baker et al. 2019).

We report the distribution of female CEO led firms and CEO power by year in Panel A of Table 3.1, and by Fama-French 12 industry classification in Panel B (Table 3.1). Table 3.1 shows the number and percentage of firm-year observations headed by women CEOs as well as the number and percentage of CEOs holding the dual position of CEO and chairman depicting CEO power. Panel A of Table 3.1 shows that no single year dominates the sample. Across the sample period, it is notable that the percentage of firms with female CEOs increases steadily from 3.34% in 2000 to 7.69% in 2004 followed by a decline during 2007-2009 crisis. For the latter part of the sample period, the percentage of firms headed by women CEOs increase from 3.55% in 2010 to 5.56% in 2016. In contrast, the percentage of CEO-duality firms has decreased over the sample period for both male and female CEOs. For instance, the percentage of CEO-duality firms headed by women CEOs weaken from 71.4% from 2000 to 57.7% in 2016, while those headed by male CEOs weaken from 63.45% in 2000 to 58.76% in 2016. The decline in CEO-duality firms over time is the result of stricter regulations and enhanced scrutiny especially post 2007-2009 financial crisis. Panel B (Table 3.1) presents the statistics across 10 Fama-French Industries (Financial Industry and Utilities excluded). There is notable difference across industries in terms of women leadership. Specifically, the percentage of firm-year observations with women CEOs ranges from a low of 0.035% in Consumer Durables to a high of 1.00% in Wholesale, Retail and some Services. The percentage of firm-year observations with women CEOs varies across industries, ranging from

0.62% in Business Equipment to 0.24% in Chemicals and Allied Products.

3.4.3. Earnings Management

Following previous literature, we estimate two earnings management practices as a proxy for earnings management: the opportunistic use of accruals, measured by current discretionary accruals and real activities manipulation. To calculate real earnings manipulation, we use abnormal production costs and abnormal discretionary expenses. (Farooqi, Harris, and Ngo 2014; Roychowdhury 2006) show that these two measures effectively capture real earnings manipulation. Myopic corporate managers may resort to cutting advertising expenses and R&D expenditures to boost short term earnings at the expense of long-term goals (Gupta, Pevzner, and Seethamraju 2010; Kothari, Mizik, and Roychowdhury 2016). Overproduction entails higher production leading to a decrease in per unit cost of the product and lowers the cost of sales. This improves the corporate gross profit margin and attain earning thresholds. Hence, following existing empirical evidence, abnormal discretionary expenses and production costs are measured using the following equations:

$$\frac{Dis_{it}}{Assets_{(it-1)}} = \beta_0 + \beta_1 \frac{1}{Assets_{(it-1)}} + \beta_2 \frac{S_{it}}{Assets_{(it-1)}} + \varepsilon_{(Dis)} \tag{3.1}$$

Where Dis_{it} is the discretionary expenditure, which is the sum of firm's advertising expenses and R&D expenses in year t. $Assets_{(it-1)}$ is the total assets in year t-1 and S_{it} denotes net sales for the firm in year t.

$$\frac{Prod_{it}}{Assets_{(it-1)}} = \gamma_0 + \gamma_1 \frac{1}{Assets_{(it-1)}} + \gamma_2 \frac{S_{it}}{Assets_{(it-1)}} + \gamma_3 \frac{\triangle S_{it}}{Assets_{(it-1)}} + \gamma_4 \frac{\triangle S_{(it-1)}}{Assets_{(it-1)}} + \varepsilon_{(Prod)} \tag{3.2}$$

Where $Prod_{it}$ is the sum of firm's cost of goods sold and change in inventory in year t. $Assets_{(it-1)}$ are the assets of the firm in year t-1, S_{it} are the net sales in year t. $\triangle S_{it}$ denotes the change in net sales from year t-1 to t and $\triangle S_{(it-1)}$ is the change in net sales from year t-2 to year t-1.

Abnormal discretionary expenses and production costs are the residuals from the aforementioned estimation models. Higher abnormal production expenses and lower abnormal discretionary expenses are consistent with income increasing real earnings manipulation. Hence, a proxy for real earnings management is computed by the sum of abnormal discretionary expenses (multiplied by -1) and abnormal production expenditures.

To estimate current discretionary accruals, we use a cross- sectional version of the modified Jones Model (Dechow, Sloan, and Sweeney 1995; Jones 1991) because of its superior classification and less restrictive data requirements (DeFond and Subramanyam 1998; Cai et al. 2019). The

following cross-sectional regression equation is used to estimate current accruals:

$$\frac{TA_{it}}{Assets_{(it-1)}} = \alpha_{0t} + \alpha_{1t}\frac{1}{Assets_{(it-1)}} + \alpha_{2t}\frac{\triangle S_{it}}{Assets_{(it-1)}} + \alpha_{3t}\frac{PPE_{it}}{Assets_{(it-1)}} + \varepsilon_{(it)} \qquad (3.3)$$

Where for firm i and year t, TA_{it} is total accruals of firm i in year t, which are equal to change in non-cash current assets minus change in current liabilities excluding the current portion of long-term debt, minus depreciation and amortization. $Assets_{(it-1)}$ are the total assets of the firm i in year t-1, $\triangle S_{it}$ is the change in net sales of firm i from year t-1 to t, PPE_{it} is the property, plant and equipment of firm i for year t.

According to (Jones 1991), total accruals can be categorized into discretionary and non-discretionary accruals. Non-Discretionary accruals are assumed to be affected by economic consequences and discretionary accruals are a result of the manager's perspective for reporting earnings (Hsieh et al. 2018). Equation 3.3 is estimated cross-sectional each year within the same industry (Fama-French 12 industry classification) to obtain the fitted value of accruals. The fitted value captures the non-discretionary accruals and the difference between the observed value and the fitted value that is the estimated residuals capture the current discretionary accruals, the absolute value of which is proxied for earnings management

3.4.4. Other Variables

The models employed in our analysis include a number of firm, board and CEO characteristics that have been found to influence earnings management. Following (Bergstresser and Philippon 2006), we use current ROA, measured as the ratio of income before extraordinary items to beginning total assets, to control for firm's current performance that can determine the current earnings management. Studies suggest that firms manipulate earnings to conceal poor performance (Chu et al. 2019). To account for firm's growth opportunities, we follow (Minton and Schrand 1999), and use market to book ratio, computed as the ratio of market value of a firm to its book value at the beginning of the year. We control for revenue growth from year t-1 to year t to account for actual sales growth. We also control for firm size, measured as logarithm of total assets, as larger firms face larger political costs (Watts and Zimmerman 1990) that can enhance earnings management but also face enhanced scrutiny that can limit earnings management. As a proxy for risk, we used standard deviation of operating cash flows scaled by beginning total assets and computed over a three-year rolling period. Riskier firms are expected to engage in higher earnings management to curb volatility. Altman's Z-score is used to proxy financial health (Zang 2012), while E-index (Entrenchment Index) is used as a proxy for corporate governance. We further control for a set of demographic information of CEO including age (Ln(CEO age)), tenure (Ln (CEO tenure)) as well as board characteristics to control for management quality. We control for board size (Ln (board

size)), percentage of independent directors as well as the percentage of female directors on board.

Panel A of Table 3.2 provides summary statistics on the earnings management variables, CEO power variables and other key CEO, board and firm characteristics. To minimize the impact of extreme outliers, we winsorize all continuous variables at top and bottom 1%. The variable absolute current discretionary accruals *(AbsDA)* has a mean value of 0.032. The findings indicate, on average a decline in earnings management using discretionary accruals. The previous study of (Cai et al. 2019) find the mean absolute current discretionary accruals of 0.062 for the sample period 2000-2010. Real earnings manipulation *(Real EM)* on the other hand has a mean and median of 0.438 and 0.316 consistent with (Z. F. Li and Thibodeau 2019). Approximately 4.47% of the CEOs in the sample are women and 60.6% of the CEOs hold the position of the chair in addition to CEO. The average *CEO pay slice* is 0.34. The average corporate board consists of 8 members of which nearly 75% are independent directors and 12% are female directors. On average, CEOs are 58.3 years old with 11.17 years of tenure at the CEO position.

Table 3.2, Panel B reports the Spearman correlation coefficients for main variables of interest. We find that women CEOs are negatively related to *Real EM* and *AbsDA* providing preliminary evidence that women CEOs engage in lesser earnings management. CEO duality and CEO pay slice are positively and significantly correlated to real earnings management.

3.5. Results

3.5.1. Univariate results

Table 3.3 provides the univariate test results. It compares the firms headed by female CEOs to those with male CEOs. It also compares the difference in firms headed by male and female CEOs based on CEO duality. The mean absolute value of *Real EM* is 0.441 for firms headed by male CEOs and 0.356 for firms led by female CEOs, the difference is significant at 5% level suggesting that firms headed by female CEOs engage in less earnings management. However, in Panel B of Table 3.3, the mean difference in *Real EM* between firms headed by male and female CEOs also serving the position of chairman *(CEO Dual)* is 0.048 and is no longer significant. This indicates that increase in CEO power reduces the gap in earnings management between male and female CEOs, which supports our second hypothesis. Similar results are obtained using *AbsDA* as a proxy for earnings management. Further, relative to male CEOs, female CEOs are younger, have shorter tenure and lesser compensation. The fraction of independent and female directors on boards is higher for female CEOs. Firms with female CEOs tend to be bigger, more profitable and are risker *(StdDev Sales)* compared to firms headed by male CEOs consistent with (Faccio, Marchica, and Mura 2016).

3.5.2. Regression Analysis

In this section, we jointly test the effect of CEO gender and power on earnings management in a multivariate setting by controlling for a set of firm and executive characteristics. The dependent variables are earnings management proxies measured by real activities manipulation *(Real EM)* and absolute value of current discretionary accruals *(AbsDA)* for each firm-year. The variables of interest are CEO gender and CEO power. The indicator variable, *CEO Fem*, equals one if the firm-year has a female CEO and zero otherwise. CEO power is measured by an indicator, *CEO Dual*, which equals to one if the CEO holds the position of chair for a firm-year, zero otherwise. We also use CEO pay slice *(CPS)* as a proxy of CEO power for robustness. We start by running the following OLS model:

$$RealEM_{it}/AbsDA_{it} = \left(\begin{array}{c} \beta_0 + \beta_1 CEOFem + \beta_2 CEOpower + \beta_3 CEOFem \times CEOpower \\ + \sum \beta_4 Firm\,level\,Controls + \sum \beta_5 Board\,level\,Controls \\ + \sum \beta_6 CEO\,level\,Controls + \varepsilon_{it} \end{array} \right) \tag{3.4}$$

We include Fama-French 12 industry, year and CEO fixed effects to control for variations in economic operations for our sample firms across industries, years and CEOs. We report test statistics and significance levels based on standard errors clustered by firm and year levels (Petersen 2009).

Table 3.4 and Table 3.5 presents the regression results from Equation 3.4, which tests our two hypotheses. Real Earnings Management *(Real EM)* is the dependent variable for Table 3.4 and absolute value of current discretionary accruals *(AbsDA)* is the dependent variable for Table 3.5. In Table 3.4 column (1), the coefficient of *CEO Fem* is negative and significant (-0.448) at 1% level. This finding provides support for the first hypothesis that female CEOs, ceteris paribus, are less likely to engage in earnings management relative to their male counterparts. This difference in earnings management could be the result of fundamental differences between genders in terms of risk-taking attitudes, overconfidence and ethical behaviors (Marianne 2011; Malmendier and Tate 2008). However, it could also be attributed to the differences in incentive structures, unemployment risk, as well as incongruity between the role of women in society and leadership roles (Akerlof and Kranton 2000; Booth and Nolen 2012; Guiso et al. 2008). In column (2) of Table 3.4, we control for CEO power measured by CEO duality. Consistent with (Feng et al. 2011), we find that the coefficient of *CEO Dual* is positive and significant at 5% level, suggesting that the existence of CEO who is also the chairman reduces board effectiveness in monitoring the quality of financial reporting (Kamarudin, Ismail, and Mustapha 2012). Moreover, there is a positive and significant coefficient on the interaction term between gender variable denoting female CEOs and CEO duality *(CEO Fem*Dual)* shown in column (3). This result indicates that with increased power, the propensity of female CEOs to engage in earnings management increases, consistent

with our second hypothesis. Similar results are obtained when CEO pay slice *(CPS)* is used as a proxy for CEO power in columns (6) and (7). In column (7), the coefficient of the interaction term *(CEO Fem*CPS)* is positive but is insignificant. This provides evidence that women CEOs engage in less earnings management only in the absence of power over the management team. In the presence of increased power, no significant relation between CEO gender and earnings management is found. The results also show that fundamental differences in risk-taking and ethical behaviors between genders do not drive the decision-making process at top leadership positions consistent with (Cook and Glass 2013).We further find that larger firms, more profitable firms, more volatile firms engage in higher earnings management consistent with prior literature on earnings management (Arun, Almahrog, and Aribi 2015; Harris, Karl, and Lawrence 2019). We also find the presence of female directors leads to reduced earnings management.

In columns (4) and (5) of Table 3.4, we partition the sample into two groups: firm-years with high CEO power *(CEO Dual = 1)* and firm-years with low CEO power *(CEO Dual= 0)*.The coefficient of CEO Fem is negative and statistically significant (-0.806) at 1% for firm-years with low CEO power *(CEO Dual=0)*, depicted in column (5). However, for the sample of firm years with high CEO power, the coefficient of CEO Fem is negative (-0.298) but loses significance relative to low CEO power sample significant at 10% level). This suggests that with increased power, there is no statistical difference in earnings management behavior between male and female CEOs exists, consistent with the previous result.

Table 3.5 presents the regression results of the joint impact of CEO gender and power on accruals-based earnings management. The dependent variable is absolute value of current discretionary accruals *(AbsDA)*. Consistent with previous results column (1) shows that women CEOs are less likely to engage in earnings management with a coefficient of -0.003, significant at 5% level. However, the coefficient on the interaction term *(CEO Fem*Dual)* in column (3) is negative but insignificant (-0.008). This suggests that in the presence of power, no significant relation between CEO gender and earnings management exists. Similar to Table 3.4, we also partition the sample based on CEO power and find the results to hold. For the firm-year observations with low CEO power *(CEO Dual=0)*, the coefficient of *CEO Fem* is negative and significant (-0.037) at 5% level depicted in column (5). However, column (4) shows that for the sample of high CEO power *(CEO Dual=1)* the coefficient of *CEO Fem* is negative but loses significance. This affirms that women CEOs engage in less earnings management relative to their male counterparts only when she has less power over the board and management.

Overall, the result is consistent with role congruity theory which underlines that women leaders engaging in earnings management are perceived as less capable and quickly replaced as engaging in earnings manipulations are not in line with their 'expected' gender roles associated with cooperation, welfare, honesty, and sustainability. Thus, increased scrutiny and fear of losing leadership

roles lead women CEOs to engage in significantly less earnings management relative to their male counterparts. However, increased CEO power moderates the relationship between CEO gender and earnings quality. The women CEO who is also the chairman has the freedom to manage the company and exert her will towards financial reporting. The above results show that in an increased power environment, gender differences towards earnings management are not significant.

3.6. Endogeneity Concerns

Our results suggest that lack of CEO power engenders the negative relation between female CEOs and earnings management. However, concerns in the prior literature suggest a self-selection bias in the CEO hiring process violating the randomization assumption. Women leaders may choose to work in certain types of firms or certain boards could be more inclined to hire women leaders (Huang and Kisgen 2013; Adams and Ferreira 2009). Further, our results could be driven by omitted firm characteristics that affect both earnings management and CEO gender. For example, (Adhikari 2012) finds that in firms with higher inherent risk, women are excluded from top executive positions. In this section we adopt a propensity matched sample approach, instrumental variable approach as well as a difference-in-differences analysis with CEO turnovers to rule out any potential endogeneity concerns.

3.6.1. Evidence from matched samples

To address biased estimation because of the large disparity in the number of male and female CEO firm-year observations and potential omitted variables concern, we analyze the difference in earnings management behavior for male and female CEOs using a propensity matched sample approach. Following (Huang and Kisgen 2013), firm-years with female CEOs are matched with those without, based on observable firm, board and CEO characteristics. Specifically, to employ propensity score matching, we start by running a logit model that regresses the CEO gender variable *(CEO Fem)* on a set of characteristics including total assets *(Ln (Assets))*, ROA *(ROA)*, Leverage *(Leverage)*, Market-to-book ratio *(MTB)*, revenue growth *(Rev Growth)*, Board size *(Board size)* and Logarithm of CEO age *(CEO age)*, year and industry dummies. We then use propensity score to perform a nearest neighbor match without replacement. We compare female CEO firm-year observations with their corresponding propensity score matched male CEO firm-year observations to re-examine the earnings management behavior of male and female CEOs, and the moderating role of CEO power in this relation. Panel A of Table 3.6 provides the descriptive statistics for the matched sample partitioned into firm years with high CEO power*(CEO Dual=1)* and low CEO power*(CEO Dual=0)*. We find that after propensity score matching, boards headed by female CEOs have a larger board size and a greater fraction of independent and female directors. Further,

male CEOs earn higher compensation than female CEOs. In the PSM sample, we continue to find that real earnings management and absolute value of discretionary accruals to be higher for female CEOs than male CEOs but are significant only for the low power CEOs *(CEO dual=1)*.

Panel B of Table 3.6 reports the regression results based on propensity score matched samples. We consistently find a negative coefficient on *CEO Fem* indicating that female CEOs engage in less earnings management. We also find a positive coefficient on the interaction term *(CEO Fem*Dual)* in column (3), significant at 10% level showing the moderating role of CEO power in the relation between CEO gender and earnings management. We also partition the PSM sample into firm-year observations based on CEO power. OLS regression results in columns (4) and (5) find that the coefficient of *CEO Fem* to be negative for both columns but is statistically significant only for firm-years with low CEO power. Overall, the results indicate that with increased power, there is no statistical difference between earnings management behavior of male and female CEOs, consistent with our two hypotheses.

3.6.2. Evidence from Instrumental Variable Approach

In order to further investigate the self-selection bias that might explain the above results, we re-examine the relation between CEO gender, CEO power and earnings management using instrumental variable approach. Pursuant to previous studies, our IV approach is based on the exogenous gender equality index developed by (Sugarman and Straus 1988). They constructed a gender equality index considering economic, political and legal policies towards women in each of the 50 U.S. states. The score of the overall gender-equality index ranges from 19.2 (Mississippi) to 59.9 (Oregon). The index has been widely used as an instrument in the prior finance, accounting, management and gender studies literature (Huang and Kisgen 2013; Baixauli-Soler, Belda-Ruiz, and Sanchez-Marin 2015; Frye and Pham 2018; Harris, Karl, and Lawrence 2019). However, post development of this index in 1988, progress, innovation and outlook towards women has immensely changed. Hence, for robustness, we also use the 2019 Bloomberg Gender-Equality Index (GEI) as the instrument variable[1]. The index developed by Bloomberg takes into consideration economic and legal policies towards gender equality including median pay ratio, female labor force participation health coverage for women and college degree attainment. The score of the gender-equality index ranges between 0 and 100, with Vermont attaining the highest score of 86.40 and Mississippi with the lowest score of 11.20. Following (Huang and Kisgen 2013), we posit that women are more likely to occupy CEO positions in the states friendly towards women's equality. We use the headquarter location of the firm, the information about which is obtained from Compustat and

[1]Bloomberg Gender-Equality Index (GEI) tracks the financial performance of companies committed towards gender equality. It also ranks the countries based on their adaptability to gender equality. The GEI for US states is obtained from Bloomberg terminal

assign a gender equality index to each state calculated by (Sugarman and Straus 1988) and by Bloomberg. We find the mean of (Sugarman and Straus 1988) gender equality index *(GenEqual Old)* to be 43.70 for our sample with a standard deviation of 8.04 while the mean of Bloomberg gender equality index *(GenEqual New)* is 51.66 with a standard deviation of 17.42.

Using a two-stage IV approach, we first regress the endogenous variable *CEO Fem* on each of the instrument variables *(GenEqual Old; GenEqual New)* and the set of firm characteristics (Ln(Assets), ROA, Leverage, Market-to-book ratio (MTB), cash, Z score, board size, fraction of independent directors and Ln(CEO age)). For the second stage regression, the predicted values of the endogenous variable from the first stage are used to study the relation between CEO gender, power and earnings management.

Table 3.7 provides the results for the first stage and second stage regressions. Panel A of Table 3.7 shows the pairwise correlation between two gender equality indices *(Gen Equality Old; Gen Equality New)*, CEO gender indicator variable *(CEO Fem)* and earnings management proxies *(Real EM; AbsDA)*. We find that two gender equality indices to be positively and significantly correlated to each other. We also find the CEO female dummy *(CEO Fem)* to be positively and significantly correlated to the instrument variables. This shows that women CEOs have a higher tendency to occupy executive roles in states that promote equal opportunity for women. The correlation between real earnings management proxies and the two instrument variables is low and insignificant. This validates the instrument variable as it induces changes in the explanatory variable *(CEO Fem)* but has no independent effect on the dependent variables *(Real EM and AbsDA)*

Panel B and Panel C of Table 3.7 shows the results from first-stage and second-stage regressions using (Sugarman and Straus 1988) gender equality index *(GenEqual Old)* and Bloomberg gender equality index *(GenEqual New)* as the instrument variables respectively. Consistent with (Huang and Kisgen 2013) and (Harris, Karl, and Lawrence 2019), we find the coefficient on the instrument variable in the first stage regression is positive and significant at 5%. This confirms the strong relation between gender equality index and having a women CEO. The F-statistic from the first stage regressions using instrument variables are 14.157 and 11.148, significant at 1% level. Further, female CEOs hired are young, have lower tenures and have a higher fraction of independent directors.

For the second stage regression, we use *Real EM* as the dependent variable[2]. Consistent with previous results, Panel B of Table 3.7 shows the coefficient of interaction variable *(CEO Fem*Dual)* is positive but insignificant suggesting that with increased power, the relation between female CEOs and earnings management is positive but insignificant. The coefficient of the interaction variable *(CEO Fem*CPS)* is negative but also insignificant. The propensity of female CEOs to engage in significantly less earnings management is only in the absence of CEO power as sug-

[2]Ran the regression using *AbsDA* as the dependent variable and obtained similar results.

gested by a negative and significant coefficient of CEO Fem in the sub-sample of firms with low CEO power. Thus, the results overall affirm that earnings management behavior of women CEOs is not driven by their risk-taking abilities or ethical attitudes but is governed by the discrimination they face after occupying top executive roles. Consistent results are found using Bloomberg gender equality index *(GenEqual New)* reported in Panel C of Table 3.7. This relationship affirms our previous finding that as the power increases, the propensity to engage in earnings management for women CEOs also increases. Further, significant differences in earnings management behavior is found between male and female CEOs only within low CEO power subgroup.

3.6.3. Evidence from CEO turnovers

In addition to propensity score matching and instrumental variable approach to address the endogenous concern, we examine CEO turnovers and the associated changes in earnings management. This analysis compares the difference in earnings management for the same firm due to changes in CEOs. Therefore, if any trends in earnings management followed by the firm prior to change in CEO impact the results, this difference-in-difference analysis using CEO turnovers should alleviate the bias.

In this analysis, we identify firm-year observations when a change in CEO appears in the ISS database. We differentiate CEO transitions into two types depending on the gender of incoming and outgoing CEOs: male-to-female (M-F) and female-to-male (F-M) CEO transitions. For comparison, we also consider male-to-male (M-M) CEO transitions. We construct a sample of CEO turnovers following (Huang and Kisgen 2013). Panel A of Table 3.8 reports the change in earnings management for the sample of executive turnovers. Our CEO transitions sample contains 142 male-to-female transitions, 192 female-to-male transitions and 796 male-to-male transitions for the sample period 2000-2016. We find that in around 87% of male-to-female transitions (124 transitions), firms experience a decline in earnings management when a woman CEO replaces a male CEO. However, the maximum change is experienced when the transition to women CEOs is also accompanied by a decline in CEO power, significant at 1% level. The decline in earnings management when the incoming women CEOs also resides over as chairman while the outgoing male CEOs have low power is only significant at 10% level. Female-to-male CEO transitions on the other hand experience an increase in earnings management following the transition. The increase is largest when the incoming male CEO also presides over as chairman while the outgoing women CEO had low power. This again shows that CEO power measured by duality impacts the relation between CEO gender and earnings management.

Panel B of Table 3.8 examines the change in earnings management around each of the CEO turnovers in terms of gender and power using regression analysis. We calculate the change in real Earnings Management *(Change in Real EM)* as the difference between the real earnings manage-

ment one year after the transition (t+1) and one year prior to the transition (t-1), where t is the year of CEO transition. To run the regression analysis, we partition the CEO transitions based on duality. As per our hypothesis, we expect CEO power to weaken the negative relation between CEO gender and earnings management. This is indeed what we find. In Model (2), we find that for CEO transitions from duality to non-duality, firms with women CEOs replacing male CEOs experience the largest decline, significant at 1% level, followed by male CEOs replacing female CEOs. Model (1) on the other hand, shows that a male CEO replacing a women CEO experience the greatest increase, significant at 1% level. The transition in male-to-male CEOs experience increase in earnings management but is not statistically significant.

Overall, the CEO turnover analysis affirms that women CEOs engage in lesser earnings management relative to male CEOs. However, CEO power acts as a moderator and weakens the relation between CEO gender and earnings. The decline in earnings management is not statistically significant when the incoming women CEOs hold power by occupying the dual position of CEO and chairman. The results also suggest that this relation is unlikely to be driven by endogeneity.

3.7. Additional Analysis

3.7.1. Alternate Model Specifications

Thus far, we have shown that power has a significant influence on the relation between CEO gender and earnings quality. In this section we use an alternate model specification to compare earnings management behavior of male and female CEOs in the presence of power. The analysis of covariance (ANCOVA) is a statistical procedure for looking at group effects on the outcome variable controlling for continuous explanatory variables. Developed and popularized by (Fisher 1954), ANCOVA generates prediction equations for various levels of the categorical variable of interest and is widely used in biological clinical experiments to evaluate the difference in treatment effect between treated and non-treated groups (Rosenbaum and Rubin 1984; Miller and Chapman 2001). Hence, in addition to the OLS model, we also run the ANCOVA model to compare the differences in earnings management practices by male and female CEOs moderated by power. We generate a categorical variable *(CEO Gen Power)*, which takes the value of one if the CEO is female *(CEO Fem=1)* and is also the chairman *(CEO Dual=1)*, two if the CEO is female (CEO Fem=1) but does not preside over the board as chairman *(CEO Dual=0)* and three if the CEO is male *(CEO Fem=0)* and does not occupy the position of chairman *(CEO Dual=0)*.The ANCOVA model is a conditional model that will test the differences for each of the three groups of the categorical variable *(CEO Gen Power)* with the base category. In this setting, we use the base category as the

male CEO who is also the chairman of the board. The ANCOVA model is described as:

$$RealEM_{it}/AbsDA_{it} = \alpha_0 + \alpha_1 G_{it} + \sum \alpha_3 ControlVariables_{it} + \varepsilon_{it} \quad (3.5)$$

Where G_{it} is the difference in CEO gender and power and coefficient captures the impact of difference in CEO gender and power on outcome variable *(Real EM and AbsDA)*. Specifically, it captures the average change in earnings management dependent on difference in female and male CEOs as well as power. One advantage of the ANCOVA model of relevance is, it allows to control for baseline differences, that is, differences in firms and management that can impact earnings management practices.

Table 3.9 provides the results for the ANCOVA models for the full sample and the matched samples. We use *Real EM* and *AbsDA* as the dependent variables. The coefficient on *CEO Dual Female*, which captures the difference in earnings management between powerful female and male CEOs *(CEO Gen Power=1 – CEO Gen power=0)* is positive but insignificant for the full sample as well as matched sample, depicted in columns (1) and (3). This confirms that in the presence of power, no significant difference in real earnings management behavior is found between male and female CEOs. However, for women CEOs without power, the coefficient on *CEO Non-Dual Female* in columns (1) and (3) (CEO Gen Power=2 – CEO Gen Power=0) is negative and significant at 1% level for full as well as matched samples. Hence, in the absence of power, women CEOs engage in significantly lower real earnings management than their male counterparts with power. Further, we find low-power male CEOs also engage in significantly lower earnings management as the coefficient on *CEO Non-Dual Male* is negative and significant at 1% for the full sample and 10% for the matched sample. Similar results are obtained using absolute discretionary accruals *(AbsDA)* as the dependent variable. These results bring out the moderating role of power in the relation between CEO gender and earnings management and support our principal argument that gender differences in earnings management do not remain robust given the power CEOs hold.

3.8. Conclusion

In recent years, research in the area of behavioral finance has stressed on the impact of personal traits like gender on various firm outcomes. This is attributed to the differences in risk aversion, ethical considerations and leadership styles between men and women. For example, (Croson and Gneezy 2009; Barber and Odean 2001) find gender differences lead to greater risk aversion in investment decisions for women. Similarly, (Farrell and Hersch 2005) observe a negative relation between firm risk and presence of female directors. Further, (Faccio, Marchica, and Mura 2016) find firms run by women CEOs to have lower leverage and less volatile earnings. However, some studies find opposite results. For example, (Adams and Funk 2012) suggest that women directors

successful in breaking the glass ceiling are more like men and find female directors to be more risk-loving than male directors. Similarly, (Berger, Kick, and Schaeck 2014) study the demographic characteristics of executive officers, including gender on portfolio risk and find a positive link between female representation on boards and bank risk.

Our study, therefore, seeks to extend the literature by considering the impact of CEO gender on earnings management. Our empirical analysis indicates that earnings management behavior of all CEOs irrespective of gender are influenced by the power they hold while in tenure. In particular, we find women CEOs engage in less earnings management only in the absence of power over the management team. Consistent with glass cliff hypothesis and role congruity theory, the results suggest that women CEOs diverge from conservative risk averse behaviors and ethical considerations once they can exert influence over the board and the decision-making process.

Our paper, provides a novel contribution to the gender and earnings management literature by showing the moderating role of power in the CEO gender and earnings management relationship. It suggests that gender discriminations in the form of glass cliffs and role incongruities are important factors that affect earnings reporting quality. The research provides additional avenues for future research to provide evidence on leadership emergence of women CEOs and its impact on various corporate outcomes.

Table 3.1: Sample Distribution

The Table provides distribution of female led CEOs and industry breakdown of the sample firms.Panel A provides distribution of female led CEOs and the number and percentage of high power and low power CEOs measured by CEO duality. Panel B provides distribution of sample firms and female led CEOs by industry.

Panel A: Firm year distribution by calendar year

Year	# of firm year obs	# of firm year with fem CEOs	# of firm year obs with Dual Female CEOs	# of firm year obs with Dual Male CEOs
2000	419	14 (3.34%)	10 (71.4%)	257 (63.45%)
2001	450	29 (6.44%)	17 (58.6%)	273 (64.84%)
2002	482	22 (4.56%)	14 (63.63%)	276 (60%)
2003	529	33 (6.23%)	21 (63.63%)	305 (61.49%)
2004	533	41 (7.69%)	25 (60.97%)	307 (62.39%)
2005	498	27(5.42%)	13 (48.14%)	280 (59.44%)
2006	521	22 (4.22%)	16 (72.72%)	291 (58.31%)
2007	388	12 (3.09%)	7 (58.33%)	220 (58.51%)
2008	549	12 (2.18%)	8 (66.66%)	328 (61.08%)
2009	618	24 (3.88%)	15 (62.5%)	362 (60.94%)
2010	647	23 (3.55%)	15 (65.21%)	373 (59.77%)
2011	933	34 (3.64%)	24 (70.58%)	547 (60.84%)
2012	950	33 (3.47%)	16 (48.48%)	536 (58.45%)
2013	956	41 (4.28%)	21 (51.12%)	578 (63.16%)
2014	969	42 (4.33%)	26 (61.9%)	536 (57.82%)
2015	956	42 (4.39%)	22 (52.38%)	585 (64%)
2016	809	45 (5.56%)	26 (57.7%)	449 (58.76%)

Panel B: Firm year distribution by industry

Fama French 12 Industry	# of firm year obs	% of firm year obs	% of female CEO led firms
Consumer Non-Durables	858	7.65%	0.51%
Consumer Durables	360	3.21%	0.035%
Manufacturing	1,933	17.24%	0.758%
Oil, Gas and Coal Extraction and Products	672	5.99%	0.124%
Chemicals and Allied Products	564	5.03%	0.24%
Business Equipment	2,363	21.08%	0.62%
Telephone and Television Transmission	271	2.41%	0.25%
Wholesale, Retail and Some Services	1,599	14.26%	1.00%
Healthcare, Medical Equipment, and Drugs	1,012	9.03%	0.23%
Other	1,575	14.05%	0.61%
Total	11,207	100%	

Table 3.2: Descriptive Statistics

The Table provides summary statistics and Pearson Correlation of the main variables of interest.Panel A provides Mean, Median, Standard Deviation, 25th Pctl and 75th Pctl of earnings management variables, CEO characteristics, board characteristics and firm characteristics. Panel B provides provides Pearson Correlation matrix for main variables of interest.Difference in means and their statistical significance is based on a t-test.The symbol * indicate statistical significance at 10% level and under.

Panel A: Summary Statistics

Variables	No of obs	Mean	Median	Std Dev	25th Pctl	75th Pctl
Main Variables of Interest						
Real Erng Mgt (Real EM)	9,860	0.4381	0.316	0.644	-0.028	0.665
Abs DA	9,000	0.0302	0.021	0.037	0.008	0.039
CEO_Fem	11,207	0.044	0	0.205	0	0
CEO_Dual	11,207	0.606	1	0.488	0	1
CEO Pay Slice (CPS)	8,161	0.350	0.342	0.107	0.240	0.432
CEO Characteristics						
CEO age	11,202	58.34	58	7.092	54	63
CEO Tenure	7,384	11.17	9.68	7.431	6.117	14.279
CEO Total Compensation (000's)	10,926	8,777.85	4,693.241	31,251.39	2,442.336	8,503.39
CEO equity Compensation (000's)	9,899	4,593.32	2,812.65	9,717.032	1,274.98	5,600.17
Board Characteristics						
Board Size	11,207	7.99	8	3.075	6	10
No of Independent Directors	11,207	6.13	6	2.881	4	8
No of Female Directors	11,207	1,09	1	1.055	0	2
Firm Characteristics						
Firm Size ($ millions)	11,207	10,731.94	2,320.155	35,886.42	855.338	7,167
Ln(Assets)	11,207	7.895	7.749	1.535	6.751	8.877
ROA	11,207	0.049	0.055	0.113	0.024	0.0921
Market-to-book ratio	11,193	3.988	2.454	6.778	1.597	3.901
Revenue Growth	8,983	6.655	5.632	21.33	-1.479	13.357
Cash	11,206	0.148	0.094	0.152	0.035	0.210
Std Dev Sales	7,868	0.284	0.247	0.251	0.146	0.367
Z-Score	10,911	4.744	3.668	4.573	2.451	5.496
E-index	10,338	3.33	3	1.288	3	4

Panel B: Pairwise Correlations

	Real EM	Abs DA	CEO_Fem	CEO_dual	CEO_Payslice
Real EM	1.00				
Abs DA	0.0347*	1.00			
CEO_Fem	-0.024*	-0.047*	1.00		
CEO_Dual	0.0504*	0.0074	-0.004	1.00	
CEO Pay Slice (CPS)	0.0136	0.0152*	-0.0159	-0.0148	1.00

Table 3.3: Univariate Analysis

The Table (Panel A) shows difference in means of earnings management variables, CEO, firm and board-level characteristics for male and female CEOs.Panel B provides difference in means of earnings management, CEO, firm and board characteristics for male and female CEOs differentiated by power measured by CEO duality.Difference in means and their statistical significance is based on a t-test.The symbol ^{3},^{2},^{1} indicate statistical significance at 1%, 5% and 10% level, respectively.

	Panel A: Univariate Analysis Based on gender			Panel B: Univariate Analysis Based on CEO Power measured by CEO Duality					
	Male CEOs	Fem CEOs	Difference	Dual CEOs			Non-Dual CEOs		
				Male CEOs	Fem CEOs	Difference	Male CEOs	Fem CEOs	Difference
Real EM	0.441	0.356	0.085^{2}	0.510	0.462	0.048	0.4106	0.132	0.278^{3}
Abs DA	0.0306	0.0221	0.008^{3}	0.0309	0.0214	0.009^{2}	0.0302	0.0230	0.007^{2}
CEO age	58.40	57.21	1.184^{2}	58.42	56.72	1.69^{2}	58.36	57.93	0.430
CEO tenure	11.260	9.457	1.802^{3}	11.341	9.366	1.975^{1}	11.131	9.589	1.545^{3}
Comp($ mil)	8.82	7.74	1.074^{3}	8.79	7.47	1.32^{2}	8.86	8.14	.72^{1}
Eq Comp	0.56	0.55	0.006^{3}	0.55	0.56	-0.015	0.56	0.55	0.016^{3}
Board Size	7.97	8.48	-0.510^{3}	7.959	8.408	-0.449^{2}	7.99	8.595	-0.599^{3}
# Fem Dir	1.04	2.13	-1.09^{3}	1.04	2.10	-1.05^{3}	1.03	2.19	-1.15^{3}
# Ind Dir	6.113	6.673	-0.559^{3}	6.103	6.618	-0.514^{3}	6.129	6.755	-0.625^{3}
Ln(Assets)	7.883	8.147	-0.263^{3}	7.884	8.105	-0.220^{1}	7.881	8.208	-0.327^{3}
ROA	0.049	0.057	-0.008^{3}	0.048	0.060	-0.011^{2}	0.049	0.052	-0.003^{3}
MTB	3.993	3.883	0.110	4.350	2.129	2.221	3.440	6.479	-3.038^{3}
StDev Sales	0.285	0.267	0.018^{2}	0.285	0.283	0.001	0.286	0.243	0.042^{2}

Table 3.4: CEO Gender, Power and Real Earnings Management: OLS regression

The Table reports the panel data regression results on the joint impact of CEO gender and power on Real Earnings Management *(Real EM)*. The table also reports the OLS regression results for the relation between CEO gender on earnings management for sub-samples formed based on CEO Duality. The symbol ***,**,* indicate statistical significance at 1%, 5% and 10% level, respectively.

Dep Var: Real EM	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	All	All	All	Duality=1	Duality=0	All	All
Intercept	0.579	0.514	0.274	-3.288*	6.616*	0.732	0.574
	(0.61)	(0.54)	(0.29)	(1.84)	(1.85)	(0.35)	(0.27)
CEO Fem	-0.448***		-0.257***	-0.298*	-0.806***		-0.463
	(3.09)		(3.61)	(1.87)	(3.20)		(1.69)
CEO Dual		0.259***	0.631***				
		(3.45)	(3.15)				
CEO Fem*Dual			0.317				
			(1.18)				
CEO Pay slice (CPS)						0.078	0.056
						(0.28)	(0.02)
CEO Fem*CPS							0.515
							(1.49)
CEO Age	0.031	0.036	0.056	1.041	-0.752	-0.194	-0.175
	(0.15)	(0.16)	(0.27)	(1.49)	(1.27)	(0.38)	(0.34)
CEO Tenure	0.043	0.048	0.041	0.061	0.043	0.053	0.059
	(1.25)	(1.35)	(1.21)	(1.03)	(0.31)	(1.16)	(1.28)
Ln (Assets)	0.028	0.050	0.028	0.045	0.273	0.048	0.059
	(0.65)	(1.13)	(0.65)	(0.58)	(1.17)	(0.82)	(1.01)
ROA	0.666**	0.648**	0.654**	0.551	0.297	-0.345	-0.351
	(2.74)	(2.53)	(2.72)	(1.19)	(0.51)	(0.93)	(0.95)
MTB	-0.001	-0.002	-0.005	-0.001	-0.003	0.004	0.006
	(1.38)	(1.14)	(1.31)	(0.84)	(0.18)	(0.31)	(0.20)
Rev Growth	-0.001**	-0.001**	-0.002*	-0.001	-0.005*	-0.002	-0.003
	(2.03)	(2.12)	(1.91)	(0.44)	(1.75)	(1.37)	(1.46)
StdDev Sales	0.163*	0.157	0.164*	0.315	0.609*	0.236	0.266
	(1.55)	(1.45)	(1.58)	(1.41)	(1.59)	(1.39)	(1.58)
Z score	0.006*	0.005*	0.004*	0.019	0.009	0.022**	0.020*
	(1.89)	(1.77)	(1.60)	(1.55)	(0.45)	(2.16)	(1.92)
Board Size	0.073	0.102*	0.074	0.069	0.192	0.011	0.016
	(1.25)	(1.67)	(1.27)	(0.68)	(0.92)	(0.15)	(0.22)
Frac of Ind Dir	-0.015	0.102*	0.021	0.351	-0.810*	0.205	0.192
	(0.10)	(1.67)	(0.14)	(1.29)	(1.62)	(1.13)	(1.06)
Frac of Fem Dir	-0.316	-0.476**	-0.282	-0.875**	0.211	-0.602**	-0.416***
	(1.39)	(2.04)	(1.25)	(2.15)	(0.25)	(2.03)	(2.38)
No of Obs	9,860	9,860	9,860	6,016	3,844	8,161	8,161
R-Squared	0.054	0.042	0.075	0.094	0.095	0.194	0.18
Year/Industry/ CEO fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 3.5: CEO Gender, Power and Discretionary Accruals: OLS regression

The Table reports the panel data regression results on the joint impact of CEO gender and power on Absolute value of discretionary accruals *(AbsDA)*. The table also reports the OLS regression results for the relation between CEO gender on earnings management for sub-samples formed based on CEO Duality. The symbol ***,**,* indicate statistical significance at 1%, 5% and 10% level, respectively.

Dep Var: AbsDA	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	All	All	All	Duality=1	Duality=0	All	All
Intercept	0.065	0.066	0.064	-0.144	0.138	0.098	0.092
	(0.58)	(0.59)	(0.57)	(0.63)	(0.21)	(0.62)	(0.58)
CEO Fem	-0.003***		-0.001*	-0.010	-0.037**		-0.026*
	(2.40)		(1.95)	(0.61)	(2.17)		(1.91)
CEO Dual		0.032**	0.022*				
		(2.31)	(1.92)				
CEO Fem*Dual			-0.008				
			(0.64)				
CEO Pay slice (CPS)						0.043**	0.010
						(2.18)	(0.46)
CEO Fem*CPS							0.099
							(1.26)
CEO Age	0.006	0.006	0.006	0.020	0.060	0.007	0.006
	(0.21)	(0.21)	(0.20)	(0.36)	(0.34)	(0.18)	(0.16)
CEO Tenure	0.034	0.021	0.041	0.012	0.015	0.023	0.013
	(0.46)	(0.48)	(0.44)	(0.07)	(1.00)	(0.94)	(0.98)
Ln (Assets)	0.213	0.371	0.221	0.319	0.311	0.297	0.286
	(1.30)	(1.32)	(1.30)	(1.64)	(1.12)	(1.53)	(1.40)
ROA	-0.038	-0.039	-0.038	-0.081	-0.036**	-0.031**	-0.033**
	(1.82)	(1.82)	(1.82)	(2.18)*	(2.36)	(2.15)	(2.24)
MTB	0.003	0.001	0.002	0.004	0.002	0.003	0.002
	(0.58)	(0.61)	(0.55)	(0.36)	(0.78)	(0.64)	(0.88)
Rev Growth	0.065	0.054	0.063	0.077	0.043	0.031	0.076
	(1.32)	(1.31)	(1.30)	(1.33)	(1.39)	(1.21)	(1.27)
StdDev Sales	-0.018**	-0.018**	-0.019**	-0.017	0.049	-0.019*	-0.020*
	(2.05)	(2.04)	(2.07)	(0.88)	(1.15)	(1.92)	(1.98)
Z score	0.001**	0.001**	0.002**	0.003*	0.006**	0.001*	0.001*
	(2.31)	(2.35)	(2.30)	(1.90)	(2.27)	(1.81)	(1.86)
Board Size	-0.003	-0.006	-0.003	-0.002	-0.036	-0.005	-0.005*
	(1.22)	(1.23)	(1.51)	(1.31)	(1.72)	(1.87)	(1.86)
Frac of Ind Dir	-0.001	-0.001	-0.001	0.008	-0.013	0.018	0.017
	(1.06)	(1.07)	(1.05)	(1.38)	(1.26)	(1.23)	(1.18)
Frac of Fem Dir	-0.007	-0.006	-0.006	0.015	-0.210**	0.025**	0.028**
	(1.37)	(1.31)	(1.35)	(0.39)	(2.23)	(2.08)	(2.21)
No of Obs	9,000	9,000	9,000	5,510	3,490	8,161	8,161
R-Squared	0.054	0.019	0.11	0.10	0.095	0.13	0.11
Year/Industry/ CEO fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 3.6: CEO gender and power on Earnings Management: Evidence using matched samples

The Table reports the joint impact of CEO gender and power on earnings management using a matched sample. Panel A reports the difference in means of earnings management, firm, board and CEO characteristics between male and female CEO firm-year observations segregated by CEO duality for the matched sample. Panel B reports presents the results of the regression of Real EM on *CEO Fem*, *CEO power* and the interaction variable *(CEOFem*Dual)*. The Table also reports the regression results for the impact of CEO gender on real earnings management for the matched sample segregated on CEO Duality.The symbol ***,**,* indicate statistical significance at 1%, 5% and 10% level, respectively.

Panel A: Descriptive Statistics on Matched Samples

	Duality=1			Duality=0		
	Male CEOs	Fem CEOs	Difference	Male CEOs	Fem CEOs	Difference
Real EM	0.543	0.513	0.030	0.392	-0.177	0.379***
AbsDA	0.028	0.021	0.006	0.032	0.014	0.018**
CEO age	57.53	56.62	0.836*	58.10	57.93	0.167
CEO tenure	10.97	9.37	1.60**	10.45	9.59	0.855
CEO Eq Comp	0.568	0.567	0.001	0.564	0.556	0.007
CEO Total Comp ($mil)	8.10	7.49	.613*	9.701	8.175	1.525*
Board Size	7.80	8.40	-0.606**	7.90	8.58	-0.683**
Frac of Ind Dir	5.898	6.613	-0.715***	5.954	6.743	-0.788***
Frac of Fem Dir	1.08	2.10	-1.021***	1.033	2.195	-1.16***
Ln(Assets)	7.815	8.108	-0.293**	7.866	8.213	-0.346*
ROA	0.059	0.060	-0.169	0.058	0.061	-0.003
Rev Growth	6.381	7.918	-1.536	6.311	8.086	-1.775
Cash	0.140	0.139	0.001	0.155	0.160	-0.004
StDev Sales	0.293	0.283	0.010	0.240	0.243	-0.003
E-Index	3.32	3.21	0.100	3.402	3.101	0.300**

Panel B: CEO Gender, Power and Earnings Management: Evidence from Matched Samples

Dep Var: Real EM	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	All	All	All	Duality=1	Duality=0	All	All
Intercept	-2.327	-1.052	-0.759	0.613	-3.024	-2.830	-2.571
	(1.56)	(0.68)	(0.49)	(0.27)	(1.42)	(1.68)	(1.52)
CEO Fem	-0.205**		-0.469***	-0.100	-0.440***		-0.062
	(2.12)		(3.41)	(0.72)	(3.34)		(0.24)
CEO Dual		0.291***	0.072				
		(3.23)	(0.57)				
CEO Fem*Dual			0.425				
			(2.54)*				
CEO Pay slice (CPS)						0.012	0.121
						(0.03)	(0.22)
CEO Fem*CPS							0.526
							(0.56)
CEO Age	0.528	0.198	0.174	-0.123	0.667	0.704	0.636
	(1.50)	(0.54)	(0.47)	(0.23)	(1.32)	(1.79)	(1.62)
CEO Tenure	-0.004	0.004	-0.009	-0.047	0.062	0.016	-0.002
	(0.07)	(0.06)	(0.14)	(0.60)	(0.60)	(0.21)	(0.03)
Ln (Assets)	0.021	0.009	0.010	-0.014	0.057	0.006	0.003
	(1.66)	(1.29)	(1.33)	(1.34)	(1.02)	(0.16)	(1.29)
ROA	-0.004	-0.031	-0.126	-0.063	-0.159	-0.209	-0.110
	(1.01)	(1.06)	(1.24)	(1.08)	(1.20)	(1.34)	(1.18)
MTB	0.004	0.003	0.001	0.002	0.003	0.005	0.003
	(1.39)	(1.65)	(1.68)	(1.71)	(1.34)	(1.76)	(1.56)
Rev Growth	-0.013	-0.045	-0.037	0.000	-0.000	-0.000	-0.000
	(1.10)	(1.03)	(1.13)	(1.04)	(1.08)	(1.05)	(1.12)
StdDev Sales	0.169**	0.185	0.186	0.281	0.060	0.132*	0.132*
	(1.95)	(1.05)	(1.07)	(1.20)	(1.22)	(1.67)	(1.67)
Cash	-0.326	-0.252	-0.197	-0.187	-0.155	-0.336	-0.330
	(1.06)	(1.82)	(1.65)	(1.44)	(1.34)	(1.85)	(1.84)
Z score	0.006	0.012	0.012	0.012	0.018	0.029	0.026
	(1.43)	(1.84)	(1.90)	(1.74)	(1.58)	(1.35)	(1.20)
Board Size	0.220**	0.206**	0.212**	0.365***	0.069**	0.271**	0.284**
	(2.35)	(2.22)	(2.31)	(2.69)	(2.53)	(2.46)	(2.58)
Frac of Ind Dir	-0.006	-0.090	-0.043	-0.142	-0.101	-0.051	-0.013
	(0.02)	(0.32)	(0.16)	(0.35)	(0.27)	(0.16)	(0.04)
Frac of Fem Dir	0.432	0.201	0.532	0.713	0.259	0.060	0.384
	(1.33)	(1.71)	(1.66)	(1.40)	(1.64)	(1.18)	(1.03)
E-Index	0.011	0.020	0.007	-0.016	0.024	0.035	0.007
	(1.33)	(1.64)	(1.21)	(1.36)	(1.49)	(1.26)	(1.20)
No of Obs	756	756	756	464	292	614	614
R-Squared	0.113	0.065	0.11	0.096	0.095	0.08	0.12
Year/Industry/ CEO fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 3.7: CEO Gender, Power and Earnings Management: Instrumental Variable Approach

The Table provides the estimation of the impact of CEO gender and power on earnings management using Instrumental Variable approach. Panel A provides the pairwise correlation between the two instrument variables *(Gen Equality Old;Gen Equality New)* and the CEO gender indicator variable *(CEO Fem)* and earning management variables *(Real EM; AbsDA)*. Panel B reports the first stage and second stage regression results.Model 1 reports the first stage regression of *Gen Equality Old* on *CEO Fem*. Model 2 provides the second stage regression results using the predicted values of *CEO Fem* from first stage to examine the impact of CEO gender and earnings management. Panel C reports the first stage regression of *Gen Equality New* on *CEO Fem*. Model 2 provides the second stage regression results using the predicted values of *CEO Fem* from first stage to examine the impact of CEO gender and earnings management.The symbol ***,**,* indicate statistical significance at 1%, 5% and 10% level, respectively.

Panel A: Pairwise Correlations between CEO gender, power and instrument variables

	Gen Equality Old	Gen Equality New	CEO Fem	Real EM	AbsDA
Gen Equality Old	1				
Gen Equality New	0.6122*	1			
CEO Fem	0.0411*	0.0512*	1		
Real EM	0.0036	0.0051	-0.0274*	1	
AbsDA	0.0076	0.0020	-0.0475*	0.0343*	1

Panel B: CEO gender, Power and Earnings Management: Regression using first Instrument Variable

Dep Var	CEO Fem	Real EM			
	Model 1: First stage Regression	Model 2: Second Stage Regression			
	All	All	All	Duality=1	Duality=0
Intercept	0.158** (2.36)	1.668** (2.20)	0.917** (2.15)	1.478** (2.16)	2.093** (2.59)
Gen Equality Old	0.004** (1.79)				
CEO Fem		-5.074** (1.99)	-1.72* (1.83)	-3.176 (1.01)	-6.215*** (2.70)
CEO Dual		-0.014 (0.20)			
CEO Fem*Dual		1.851 (1.17)			
CPS			0.243 (0.70)		
CEO Fem*CPS			-7.382 (-1.04)		
CEO age	-0.048** (2.08)	-0.389 (1.08)	-0.205 (1.05)	-0.343 (1.07)	-0.499 (1.55)
CEO Tenure	-0.009*** (2.72)	0.033* (1.99)	0.028* (1.82)	0.035** (2.41)	0.028 (1.61)
Ln (Assets)	0.641* (1.80)	0.006 (1.00)	0.002 (0.40)	0.004 (0.60)	0.009 (0.99)
ROA	0.392** (2.30)	0.762** (2.20)	-0.734** (2.12)	-0.735*** (2.55)	-0.829*** (2.59)
Leverage	0.002 (0.16)	0.003 (0.05)	0.004 (0.69)	0.062 (0.85)	-0.049 (0.74)
MTB	-0.003** (2.07)	-0.002 (0.44)	-0.003 (0.83)	-0.005 (0.47)	-0.003 (0.26)
Z-score	0.001 (1.07)	0.000 (0.22)	0.004 (0.38)	0.002 (0.55)	-0.001 (0.22)
E-index	0.011 (0.33)	0.014** (1.97)	0.012* (1.83)	0.012 (1.29)	0.017 (1.56)
Board size	-0.001 (0.14)	0.104** (2.26)	0.121** (2.45)	0.070*** (2.70)	0.153*** (4.93)
Frac of Ind Dir	0.045*** (3.86)	0.189 (1.62)	0.054 (1.70)	0.257 (1.65)	0.139 (0.77)
No of obs	10,787	9,860	9,860	5,966	3,894‘
R-Squared	0.07	0.14	0.135	0.15	0.13
F-Statistic	14.157***				
Firm/year fixed effects	Yes	Yes	Yes	Yes	Yes

Panel C: CEO gender, power and Earnings Management: Regression using second Instrument Variable

Dep Var	CEO Fem	Real EM			
	Model 1: First stage Regression	Model 2: Second Stage Regression			
	All	All	All	Duality=1	Duality=0
Intercept	0.188** (2.02)	1.206*** (3.30)	0.917** (2.15)	1.002** (2.08)	1.511** (2.67)
Gen Equality New	0.001 (3.39)**				
CEO Fem		-2.02* (1.87)	-0.008** (2.01)	-0.409 (0.81)	-0.2490*** (2.68)
CEO Dual		0.002 (0.04)			
CEO Fem*Dual		1.354 (1.59)			
CPS			0.280 (1.22)		
CEO Fem*CPS			-7.081 (1.57)		
CEO age	-0.046** (2.17)	-0.273 (1.16)	-0.252 (1.24)	-0.226 (1.15)	-0.344 (1.23)
CEO Tenure	-0.008*** (2.32)	0.022 (1.53)	0.021 (1.29)	0.031 (1.65)	0.015 (1.32)
Ln (Assets)	-0.000 (0.26)	0.003 (0.57)	0.004 (0.64)	0.002 (0.68)	0.005 (0.76)
ROA	0.042 (1.56)	0.713** (2.01)	0.806** (2.23)	0.672*** (2.61)	0.777*** (2.32)
Leverage	0.007 (0.45)	0.002 (0.03)	0.015 (0.77)	0.054 (0.85)	-0.045 (0.61)
MTB	-0.003 (1.41)	0.005 (1.07)	0.001 (1.23)	0.005 (0.54)	0.003 (0.26)
Z-score	0.001 (1.26)	-0.001 (0.26)	0.002 (0.76)	0.005 (0.98)	-0.002 (0.87)
E-index	0.005** (2.18)	0.009 (1.03)	0.008 (1.10)	0.011 (1.06)	0.015 (1.23)
Board size	-0.001 (0.23)	0.108*** (2.52)	0.120** (2.33)	0.073*** (2.73)	0.160*** (2.93)
Frac of Ind Dir	0.065*** (2.86)	0.094 (1.14)	0.120 (1.57)	0.143 (1.32)	0.156 (1.25)
No of obs	10,787	9,860	9,860	5,966	3,894‘
R-Squared	0.089	0.13	0.15	0.14	0.13
F-Statistic	11.148				
Firm/year fixed effects	Yes	Yes	Yes	Yes	Yes

Table 3.8: CEO gender, power and Earnings Management: Evidence from CEO turnovers

The Table reports the estimation of joint impact of CEO gender and power on earnings management using CEO transitions.Panel A provides descriptive statistics on change in real earnings management following Male-to-female (M-F) CEO transitions, Female-to-male (F-M) CEO transitions and Male-to-Male (M-M) CEO transitions further segregated on change in CEO power.Difference in means and their statistical significance is based on a t-test. Panel B reports the estimation of the impact of CEO transitions on earnings management for change in CEO power.The symbol ***,**,* indicate statistical significance at 1%, 5% and 10% level, respectively.

Panel A: Descriptive Analysis

CEO turnover	Male to Female (M-F)		Female to Male (F-M)		Male to Male (M-M)		Difference in Real EM
	No	Change in Real EM (1)	No	Change in Real EM (2)	No	Change in Real EM (3)	(1)- (2)
Non-dual to Dual	46	-0.214*	57	0.231***	181	0.0219	-0.445***
Dual to Non-dual	48	-0.292***	54	0.043	198	-0.045	-0.335*
Dual to Dual	18	0.0251	54	0.160	287	-0.003	-0.135
Non-dual to Non-dual	30	-0.176**	27	0.0345	130	-0.105	-0.215*

Panel B: Changes in Earnings Management around CEO turnovers: Regression Analysis

Dep Var Real EM(t+1)- Real EM(t-1)	Non-dual to Dual	Dual to Non-dual	Dual to Dual	Non-dual to Non-dual
	Model 1	Model 2	Model 3	Model 4
Intercept	0.021 (0.05)	-0.003 (0.01)	0.042 (0.10)	0.003 (0.01)
Male to Female (M-F)	-0.110 (0.84)	-0.348*** (3.07)	-0.023 (0.27)	-0.206** (2.37)
Female to Male (F-M)	0.265*** (3.31)	0.139 (1.22)	0.373 (1.29)	0.414* (1.83)
Male to Male (M-M)	0.045 (0.70)	-0.068 (1.17)	0.019 (0.36)	-0.052 (0.69)
Firm Level Controls	Yes	Yes	Yes	Yes
Board Level Controls	Yes	Yes	Yes	Yes
CEO level Controls	Yes	Yes	Yes	Yes
R-Squared	0.129	0.10	0.11	0.10
Year/Industry fixed effects	Yes	Yes	Yes	Yes

Table 3.9: CEO gender, power and Earnings Management: Alternate Model Specifications

The Table provides the ANCOVA regression results as an alternate model specification to estimate the joint impact of CEO gender and power on earnings management for the whole sample and matched sample.To run the ANCOVA model,generate a categorical variable *CEO Gen Power* that takes the value of 1 if *CEO Dual Female=1*, 2 if *CEO Non-Dual Fem=1* and 3 if*CEO Non-Dual Male=1*.We control for other firm, board and CEO characteristics.The symbol ***,**,* indicate statistical significance at 1%, 5% and 10% level, respectively.

	Full Sample		Matched Sample	
Dep Var	Real EM (1)	AbsDA (2)	Real EM (3)	AbsDA (4)
Intercept	1.337***	0.126***	-1.367	0.098
	(3.43)	(2.60)	(0.79)	(1.03)
CEO Dual Female	0.022	-0.003	0.043	0.004
	(0.36)	(0.95)	(0.38)	(0.64)
CEO Non-Dual Fem	-0.416***	-0.002***	-0.481***	-0.008**
	(5.46)	(2.37)	(3.87)	(2.18)
CEO Non-Dual Male	-0.066***	-0.001**	-0.112*	0.004*
	(3.05)	(2.05)	(1.97)	(1.95)
CEO Age	-0.184*	-0.020*	-0.460	-0.014
	(1.93)	(1.65)	(1.07)	(0.61)
CEO Tenure	0.006	-0.001	-0.074	-0.001
	(0.43)	(1.25)	(1.20)	(1.32)
Ln (Assets)	-0.004	-0.012	-0.019	-0.015
	(0.56)	(0.93)	(0.65)	(1.26)
ROA	0.986***	0.026***	1.209	0.033
	(3.49)	(3.75)	(1.38)	(1.06)
MTB	0.008	0.005	0.001	0.002
	(0.50)	(0.48)	(0.68)	(0.24)
Rev Growth	0.013	0.016	0.017	0.016
	(0.17)	(1.15)	(0.09)	(1.27)
StdDev Sales	0.116***	0.005**	0.106	0.003
	(2.75)	(2.04)	(0.55)	(0.29)
Z score	0.003	0.002	0.014	0.017
	(1.43)	(1.54)	(0.40)	(0.21)
E Index	0.024***	0.001*	0.007	0.009
	(2.96)	(1.86)	(1.22)	(1.36)
Board Size	0.073***	0.009***	0.032	0.004
	(2.79)	(2.89)	(1.28)	(1.56)
Frac of Ind Dir	0.241***	0.012***	0.157	0.164
	(3.39)	(2.97)	(1.52)	(1.01)
Frac of Fem Dir	-0.424***	-0.022***	0.803**	-0.053**
	(3.04)	(3.65)	(2.12)	(2.03)
No of Obs	9,860	9,000	756	748
R-Squared	0.1378	0.188	0.145	0.13

Chapter 4

Corporate Social Responsibility and Market Value of Firms

4.1. Introduction

Corporate social responsibility (CSR) has continued to gain importance in managerial practice over the last several decades (Knox and Maklan 2004) and an increasing number of Fortune 1000 companies now issue corporate social responsibility reports. Documenting this trend, the KPMG International Survey of Corporate Responsibility Reporting (2011) found that ninety-five percent of the 250 largest companies in the world (G250) now report their actions on corporate responsibility separately. This represents an increase of 14% since 2008. And yet, despite years of research, the relationship between the market valuation of a firm and its CSR activities remains unclear (Margolis and Walsh 2003; McWilliams, Siegel, and Wright 2006). While early studies treated CSR as an obligation on businesses to pursue policies that are desirable in terms of the objectives and values of society (Bowen 2013), subsequent ones contend that CSR is 'fundamentally subversive' of the true responsibilities of business and a barrier to enhancing profitability (Friedman 1970)

This paper provides a new perspective on this relationship by focusing directly on the relationship between a firm's stock price performance and CSR based on intent or motive behind CSR initiations. Firms strategically utilize symbolic and substantive CSR (Li et al. 2019) to either repair reputational damage following negative societal events or undertake actions intended to integrate CSR in the overall business objectives. In the past, controversies have arisen when firms have been found to indulge in negative events leading to severe reputational risks. In response to such controversies, firms engage in CSR activities to repair their lost damage and reputation. Such indulgence in CSR activities, called symbolic CSR is for the sole purpose to regain shareholder trust (Oliver 1991). The market reaction to symbolic CSR may be different be from substantive CSR

investments directed towards corporate philanthropy. In this paper, we examine the impact of CSR on stock returns based on firms' choice of symbolic or substantive CSR.

Following (Prakash, Ravi, and Zhao 2017; Ashforth and Gibbs 1990; Walker and Wan 2012), we start by classifying CSR activities into symbolic and substantive CSR. Symbolic CSR refers to CSR initiatives implemented in response to the adverse impact of negative events. Such actions are initiated to attend to stakeholder demands without making substantive changes to their systems and operations, allowing firms to maintain legitimacy without significant strategic change (Meyer and Rowan 1977; Oliver 1991). In contrast, substantive CSR involves complete CSR implementation. The firm's underlying systems and processes are altered in a holistic attempt to improve the status quo of a particular societal or environmental context such as closing the production loop by re-using manufacturing waste as a production input. We examine the link between each of the CSR activities and subsequent stock price performance of a firm.

Our findings indicate a strong connection between the stock price changes and CSR activity. In particular, we find that the market responds positively to symbolic CSR while negatively to substantive CSR. Media attention towards negative firm events puts a corporation's reputation at risk and firms engagement in symbolic CSR acts as a quick response from the firm to show that it is doing something to 'fix the problem' (Becker-Olsen, Cudmore, and Hill 2006). This results in a positive response from the market leading to a positive symbolic CSR-annual stock returns relationship. Substantive CSR, on the other hand often requires subsequent changes in operations, systems and processes. Such investments require a high level of coordination and integration. The cost of implementing substantive CSR may be higher than the benefits in the short-term and leads shareholders' to view it as a manifestation of agency conflict. Consistent with over-investment hypothesis (Barnea and Rubin 2010), substantive CSR is viewed as investments undertaken by managers to build their personal reputation at the cost of shareholder wealth maximization leading to a negative impact on annual returns.

We further explore the impact of CSR activity on the stock price by examining the subset of family firms in our sample. Since family firms are expected to have a long-term outlook with a deep interest in the eventual survival and performance of the firm (Anderson and Reeb 2003), we expect CSR activities, in particular substantive CSR activities, will not be perceived as an agency cost by stakeholders. Consistent with our conjecture we find that the negative association between substantive CSR and subsequent stock price performance is absent for family firms.

Our findings have several interesting implications for the literature on CSR activity. First, we extend the findings of (Prakash, Ravi, and Zhao 2017) and find that crucial differences underlying CSR activities impact subsequent stock returns. Second, and perhaps more interestingly, we provide a detailed description of how the stock market reacts to CSR based on the intent or motivation behind CSR activities. Our results indicate that there is a conflict of interest between shareholders

and managers with respect to the optimal level of CSR activity. In particular, substantive CSR activities elicit similar reactions from shareholders as do the consumption of perquisites in that they are valued higher by managers than external shareholders, consistent with over-investment hypothesis (Barnea and Rubin 2010). In contrast, the market has a more favorable reaction to symbolic CSR activity. Our results indicate that much like the large event study literature in finance, it is possible to glean a fair amount of information on the value relevance of CSR activity from the stock market's reaction to it. Third, we also fill the gap in the existing CSR firm value relation literature. The existing empirical literature studying the impact of CSR on firm value yields mixed evidence with some evidence pointing towards a positive impact of CSR on firm value while some depicting negative or no market value-CSR relationship (Krüger 2015; Jiao 2010; Di-Giuli and Kostovetsky 2014; Ferrell, Liang, and Renneboog 2016). Our research contributes to this equivocal question by examining the CSR-stock return relation moderated by the motive behind CSR initiations.

The remainder of this paper is organized as follows. Section 2 explores the prior literature and hypothesis development Section 3 describes our data and variable description. Section 4 and 5 provides our main empirical results and additional analysis Section 6 concludes.

4.2. Related Literature and Hypothesis Development

Corporate social responsibility (CSR) has attracted the attention of several academicians and researchers in the past three decades. Most of the prior literature centering on the relation between CSR and firm value finds that CSR affects firm value through different channels leading to contrasting results and implications. The empirical evidence on the relation between CSR and firm value is mixed and inconclusive, with many of the studies finding a positive impact of CSR on firm value, but some providing evidence for negative or no relation between the two (Margolis and Walsh 2003; Orlitzky, Schmidt, and Rynes 2003; Margolis, Elfenbein, and Walsh 2009). (Jo and Harjoto 2011) summarize several competing theories that explain why corporations engage in CSR and their impact on firm value.

In addition to the above conflicting arguments, the market reaction to CSR investments also yields mixed results (Kempf and Osthoff 2007; Hong and Kacperczyk 2009). Prior literature provides two opposing views of CSR that influence the relation between CSR and market value of firms. Stakeholder value maximization theory (Freeman 2010) proposes that the aim of a corporation is stakeholder wealth maximization and the management should consider the effects of their actions on customers, suppliers, employees and other stakeholders (Freeman, Wicks, and Parmar 2004; Lee 2008; Schaefer and Kerrigan 2008). This line of study advocates that investment in CSR to balance social goals along with shareholder wealth maximization will lead to positive market reaction (Baron 2007; Dhaliwal et al. 2014; Skarmeas and Leonidou 2013). For example, (Klassen

and McLaughlin 1996) find, for a sample of US firms initiating positive environmental activities result in significant positive returns. (Becchetti et al. 2012) find that US firms exiting from the KLD Domini 400 Social Index experience significantly negative abnormal returns.

However, in contract to the stakeholder value maximization theory, the over-investment theory (Barnea and Rubin 2010) suggests that shareholders associate investment in CSR as means by management to extract private benefits from the firm and build their personal reputation. Based on agency theory, insiders over-invest in CSR to be entrenched as socially responsible managers at the expense of shareholders (Griffin and Mahon 1997; Margolis and Walsh 2003; Schuler and Cording 2006). (Mathur and Mathur 2000) find that announcements related to green promotional efforts by firms led to significant abnormal returns for 20 days while announcements for green products did not result in significant stock price changes. Based on the sample of 780 announcements from the daily business press, (Jacobs, Singhal, and Subramanian 2010) also find insignificant stock market reaction to environmental initiations by firms.

This study contributes to the conflicting evidence on the stock market relation to CSR by classifying CSR based on the intent behind such activities. (Rangan, Chase, and Karim 2015) find that companies initiate multifaceted versions of CSR with intentions ranging from pure philanthropy, improving operational effectiveness to advertising propaganda. They further find that companies widely range in intentions behind CSR investments, whereby some companies embrace the broad vision of CSR while others seem less interested in integrating CSR with their business strategies and devise a cogent CSR program in lieu of pressures from regulators and underlying parties (Campbell 2007; Keys, Malnight, and Van Der Graaf 2009). (Aguilera et al. 2007) finds that CSR initiations are driven by normative views embedded in corporate values aimed at fulfilling the firm's moral responsibilities.

We address the gap in the CSR literature by exploring the impact of motives dictating social activities on the CSR-stock returns relationship. Prior studies suggest that firms can engage in CSR activities to mitigate the adverse impact of negative events or enhance firm reputation. (Prakash, Ravi, and Zhao 2017; Walker and Wan 2012). Symbolic CSR refers to social actions attributed to mitigate the risk of reputational damage following a negative CSR event (Klein and Dawar 2004). Symbolic CSR is intended to display conformity to the demands of external regulators without necessarily involving any meaningful change (Meyer and Rowan 1977; Oliver 1991). Substantive CSR on the other hand, involves strategies towards complete CSR implementation. The firm's underlying systems and processes are altered in a holistic attempt to improve the status quo of a particular societal or environmental context such as closing the production loop by re-using manufacturing waste as a production input.(Zott and Huy 2007)

The choice of the type of CSR initiated by firms (symbolic vs substantive) is influenced by relative costs and benefits associated with each type (Bowen 2013) as well as media attention

towards negative CSR events. (Li et al. 2019) suggests that firms choose symbolic CSR over substantive CSR for two reasons. First, media attention towards a negative CSR event requires a quick response from the firm to mitigate reputational damage. Thus, firms engage in symbolic CSR to regain legitimacy with stakeholders. Second, symbolic CSR is less expensive and is a lower cost alternative to substantive CSR and such investment can help managers build their personal reputation at the cost of shareholder wealth maximization.

The market reaction towards CSR based on the intent or motive behind CSR activities is an empirical question yet not considered in the finance literature. Allocation towards symbolic CSR resources are short-term actions initiated to regain the lost reputation resulting from negative environmental, social or legal events. Substantive CSR investment on the other is undertaken to encompass dual objectives of societal welfare and shareholder wealth organization. In this study, we examine whether the stock market reacts differently to the two types of CSR. We posit that as symbolic CSR is initiated as a response to rebuild the lost brand image and any initiation in symbolic CSR is viewed as management's efforts to "fix the problem" as soon as possible. This may result in a positive market reaction to symbolic CSR, consistent with shareholder value maximization theory. However, increased scrutiny as a result of increased media coverage may also lead to increased stakeholder monitoring. Symbolic CSR initiation undertaken may thus be viewed as short-cut resource allocation in lieu of pressures from regulators and stakeholders might lead to a negative relation between symbolic CSR and stock returns (over-investment hypothesis). The substantive CSR-stock returns relationship is also an empirical question. On one hand, investment in substantive CSR may receive positive stock market reaction as substantive investments are undertaken to balance the societal objectives with the firm's objectives. On the other hand, such initiation could be viewed as investments to extract private benefits and personal reputation at the expense of shareholder wealth maximization.

4.3. Data and Variable Construction

4.3.1. Data and Sample Selection

Our initial sample consists of all firms in the MSCI KLD database for the years 2000-2013. The MSCI database is the most widely used in CSR studies and covers companies in S&P 500 and Russell 3000 index. We begin our sample in 2000 as before the year, the coverage of firms' CSR activities in MSCI is incomplete. Our sample ends in 2013 as post that year, majority of the data is missing. We obtain stock price data from the CRSP monthly files. Information on firm financial and accounting characteristics is collected from COMPUSTAT database. After merging MSCI, CRSP and COMPUSTAT dataset, the final sample consists of 25,823 firm-year observations for the period 2000-2013.

4.3.2. Symbolic and Substantive CSR

MSCI organizes CSR into seven dimensions: environment, community, human rights, employee relations, diversity, product, and governance (See Appendix D for detailed description of KLD dimensions). Under each of these dimensions, CSR engagement is rated into two broad groups of strengths score and concerns score. MSCI assigns '+1' strength and '–1' for concern under each dimension. We drop 'corporate governance' dimension as previous research shows that corporate governance coverage is incomplete (Krüger 2015). Extant studies have typically aggregated the strengths and concerns in seven dimensions into an index, to proxy for the overall CSR of the firm (Ullmann 1985; Waddock and Graves 1997; Hull and Rothenberg 2008). However, (Prakash, Ravi, and Zhao 2017) points out that this can be potentially problematic, as strengths and concerns are ordinal in nature. For example, a score of +1 on environment is not precisely the same as +1 on community. Further, simple aggregation puts higher weight on the category with the most number of indicators. For example, strengths under employee relations has twelve indicators while strengths under human rights have only four indicators. Therefore, aggregating the categories by simply summing them up into an index (as is unfortunately common practice in the literature) could result in potentially erroneous representation of the firm's CSR activity. To mitigate these methodological challenges, we follow (Prakash, Ravi, and Zhao 2017) to extract two principal components as a proxy for symbolic and substantive CSR.

Principal components analysis (PCA) identifies factors that maximize explanatory power within a set of related variables (See Appendix E showing the correlations between strengths and concerns for CSR dimensions). To facilitate aggregation of information across the categories and, more importantly, to facilitate comparison across years, we standardize the ratings within each year by calculating z-scores. Using eigenvalue one condition we find that exactly two principal components fit the criteria. Based on PCA, we extract two complementary components that emerge for each firm-year and from the twelve transformed variables. Appendix F describes the PCA factor loadings and communalities across the CSR categories. These two components explain on average about 33% of all the variability across the twelve categories. The first principal component quantifies the commonality across the CSR strengths and CSR concerns (it loads positively on all strengths and concerns, except diversity concerns). We label the first component as Symbolic CSR *(Sym CSR)*, because it may be interpreted to include those firm practices that address the current concerns caused by a firm's activities specially in response to some socially irresponsible behavior. In other words, symbolic CSR strategies represent the immediate organizational responses to stakeholder concerns after an incident of socially irresponsible behavior is publicly exposed. The second component quantifies the contrasts across the CSR strengths and CSR concerns. It loads positively on all CSR concerns and negatively on all CSR strengths. We label the additive inverse of the second component as Substantive CSR *(Sub CSR)*, because it may be interpreted to include a

broad array of CSR practices that are independent of current concerns in a firm while contributing to a firm's unique CSR strengths over time. In this context, we need to note that substantive CSR is the inverse of the second component from PCA. Table 4.1 provides the sample distribution of firms and CSR initiation over the sample period. Table 4.1 shows that no single year dominates the sample. Across the sample period, it is notable that percentage of firms initiating symbolic CSR rapidly increases from 30.78% in 2000 to 36.45% in 2005 followed by a decline during the financial crisis. The percentage of firms initiating substantive CSR increases rapidly and also declines during the financial crisis. Post financial crisis, firms initiate both symbolic and substantive CSR given the rising trend and awareness towards CSR.

4.3.3. Stock Returns and Firm Variables

The information about monthly stock returns, shares outstanding and trading volume is obtained from CSRP and the financial statement data is obtained from COMPUSTAT. Annual stock return are computed by annualizing monthly stock returns with dividends and after adjusting for delisting. We include several firm-level controls in our analysis. We use return on assets *(ROA)* and *Tobin's Q* to proxy firm performance and firm value. As CSR investments may depress short term performance (Orlitzky and Benjamin 2001), Tobin's Q captures the long term benefits to firm value resulting from CSR activities. Following (Orlitzky and Benjamin 2001), Tobin's Q is calculated as the market value of assets to book value of assets. Return on assets (ratio of operating income before depreciation to total assets) captures the current performance. Firm leverage is an important factor to CSR initiation and impacts stock returns (Khan, Muttakin, and Siddiqui 2013). Leverage is calculated as the ratio of total debt to total assets. We control for firm size *(Ln(Total Assets))* as larger firms face a greater demand for communication and thus have more incentives to initiate CSR activities. Following (Padgett and Galan 2010), we control for R&D expenses (R&D expenses to sales) because it complements CSR in offering competitive advantage. We also control for firm age to control for the life cycle of firms. Further, we control for revenue growth, the average growth in sales volume and cash holding.

Table 4.2 provides the descriptive statistics. Panel A of Table 4.2 provides summary statistics on symbolic and substantive CSR, stock returns and other key firm characteristics. To minimize the impact of extreme outliers, we winsorize all continuous variables at top and bottom 1%. The variable symbolic CSR *(Sym CSR)* has a mean of 1.54 and median of 0.971. Substantive CSR *(Sub CSR)* has a mean of 0.618 and a median of 0.472. The findings indicate the firms engage in higher symbolic CSR than substantive CSR, consistent with (Li et al. 2019). The average annual returns *(Stock Returns)* of the sample firms is 11.54%. Our sample firms have an average age of around 20 years and earn 10.6% return on assets (ROA). The sample firms have an average firm value (Tobin's Q) of 3.406. This suggests that bigger, older and more profitable firms engage in

CSR activities consistent with (Prakash, Ravi, and Zhao 2017). Panel B of Table 4.2 reports the Spearman correlation coefficients for the main variables of interest. Symbolic CSR *(Sym CSR)* and Substantive CSR *(Sub CSR)* are complementary principal components and have a low correlation with other. We find that symbolic CSR is positively and significantly correlated to annual stock returns while substantive CSR-stock returns share a negative but insignificant correlation. This suggests that the stock market reacts positively to symbolic CSR.

4.4. Regression Results

4.4.1. Baseline Analysis

In this section we examine the impact of symbolic and substantive CSR on stock returns in a multivariate setting controlling for a set of firm characteristics. The dependent variable is Stock Returns *(Stock Returns)* for each-firm year. The main variable of interest is symbolic *(Sym CSR)* and Substantive CSR *(Sub CSR)* obtained as two principal components from principal component analysis on strengths and concerns of MSCI CSR categories. We start by running the following OLS regression model:

$$StockReturns_{it} = \beta_0 + \beta_1 SymCSR/SubCSR + \sum \beta_2 Z_{it} + \varepsilon_{it} \tag{4.1}$$

Where Z_{it} is a vector of control variables defined in the previous section. We include Fama-French 12 industry and year fixed effects to control for variations in economic operations for our sample firms across industries and years. We report test statistics and significance levels based on standard errors clustered by firm and year levels (Petersen 2009).

Table 4.3 provides the OLS regression results from equation 4.1. In column (1) of Table 4.3, the coefficient of symbolic CSR *(Sym CSR)* is positive and significant (0.010) at 10% level. However, the coefficient of substantive CSR *(Sub CSR)* in column (2) is negative and significant (-0.096) at 10% level. The findings suggest that difference in motive behind CSR activities impact market returns. Specifically, we find that symbolic CSR investments positively impact annual stock returns while substantive CSR is found to have a negative CSR-stock market relation, consistent with over-investment hypothesis. Investment in symbolic CSR includes firm practices that address the current concerns caused by a firm's activities especially in response to some socially irresponsible behavior. In other words, symbolic CSR strategies represent the immediate organizational responses to stakeholder concerns after an incident of socially irresponsible behavior is publicly exposed. As such investments are undertaken to regain the lost reputation due to negative events, it results in positive stock market reaction, consistent with stakeholder wealth maximization (Freeman, Wicks, and Parmar 2004). Substantive CSR, on the other hand, can be interpreted to include a

broad array of CSR practices that are independent of current concerns in a firm while contributing to a firm's unique CSR strengths over time. The negative substantive CSR stock return relation is consistent with over-investment hypothesis. Hence, substantive CSR initiation is viewed as investments to extract private benefits and personal reputation at the expense of shareholder wealth maximization (Barnea and Rubin 2010).

There has been a general trend towards higher societal and environmental consciousness over the past two decades.(Flammer 2012) suggests that with increased external pressure and institutional norm to go green, the shareholder rewards to initiate CSR investments by firms declines. In addition, the financial crisis immensely changed markets perspective towards CSR. Hence, we divide the sample in two time subgroups: One with the sample period from 2000-2006 and the other from 2009-2013. Table 4.3 also provides the regression results for the two sub samples. The CSR-stock return relationship has changed over the sample period. For the sample period 2000-2006 as shown in column (3), the coefficient of symbolic CSR *(Sym CSR)* is positive and significant (0.054) at 1% level while for the sample period 2009-2013, the coefficient of symbolic CSR *(Sym CSR)* in column (5) is positive but significant (0.005) only at 10% level. Consistent with (Flammer 2012), we find that the positive stock market reaction towards symbolic CSR initiation reduced significantly over time. Over the past two decades there has been an increased pressure for companies to accomplish the dual objectives of societal objectives and shareholder wealth maximization. Any initiation in CSR is thus viewed as expected and result in less significant stock market reaction. Columns (4) and (6) provides the regression results of substantive CSR-stock market relation for the two sub sample periods. The coefficient of substantive CSR in column (4) and (6) is negative and significant at 5% level for both sample periods. This suggests that investment in substantive CSR is viewed as manifestation of agency conflict and thus results in a negative stock market reaction consistent with over-investment hypothesis.

Overall, the results suggests that differences in motives behind CSR initiation impact the annual stock returns. Symbolic CSR initiation mainly to 'fix the problem' post media attention to negative CSR events is viewed positively and is more likely to result in positive stock returns. Substantive CSR investments are considered a manifestation of agency undertaken by managers to gain personal reputation at the expense of shareholder wealth maximization. As a result, investments in substantive CSR are negatively associated to annual stock returns. We also find changing perspectives of investors towards CSR investments. With increased external pressure to conform to societal objectives, initiation in symbolic CSR is rewarded less by stock market over time.

4.4.2. Change in CSR-Stock Return Analysis

(Cochran and Wood 1984) points out an issue with using yearly CSR level as the dependent variable. Based on one of the tenants of market efficiency hypothesis, even if CSR leads to enhanced

firm value, the market reacts to changes in firm's CSR ratings. To mitigate the above concern, we use change in CSR over the sample period as the dependent variable. For each of the firm year observation, we calculate change in symbolic CSR *(Change SymCSR)* as the difference in symbolic CSR for each firm-year observation in year t and year t-1. Change in substantive CSR *(Change SubCSR)* is calculated as the difference between the level of substantive CSR for each firm-year observation in year t and year t-1. We then estimate the OLS regression model as follows:

$$StockReturns_{it} = \gamma_0 + \gamma_1 /, ChangeSymCSR_{it} / ChangeSubCSR_{it} + \sum \gamma_2 Z_{it} + \varepsilon_{it} \tag{4.2}$$

Table 4.4 provides the regression results from equation (4.2). In column (1), the coefficient of *Change Sym CSR* is positive and significant (0.120) at 5% level. Consistent with the baseline regression, change in symbolic CSR positively impact annual stock returns. In column (2), the coefficient of *Change Sub CSR* is consistently negative and significant (-0.070) at 10% level. The results affirms that stock market reaction to CSR investments is moderated by the motive behind CSR initiation. Symbolic CSR include firm practices that addresses the current concerns caused by a firm's activities in response to some socially irresponsible behavior. The immediate organizational responses to stakeholder concerns after an incident of socially irresponsible behavior is publicly exposed and has a positive impact on stock returns. Substantive CSR on the other hand is interpreted to include a broad array of CSR practices that are independent of current concerns in a firm while contributing to a firm's unique CSR strengths over time. These practices attract a negative market response consistent with over-investment hypothesis. Such investments are considered as an attempt to over-invest in CSR to be entrenched as socially responsible managers at the expense of shareholders.

Columns (3), (4), (5) and (6) of Table 4.4 presents the changing CSR stock returns relationship over time. For the sample period 2000-2006, the coefficient of *Change sym CSR* in column (3) is positive and significant at 1% level. However, for the sample period 2009-2013, the coefficient of *Change Sym CSR* in column (5) is positive but is insignificant. Consistent with (Flammer 2012), with increased external pressure and institutional norm to go green in recent times, the shareholder rewards to initiate CSR investments by firms declines. Consistently, we also find the stock market reaction to change in substantive CSR becomes less negative with time.

4.4.3. CSR-Stock Market Relation: Dual Beta Model

(Lins, Servaes, and Tamayo 2017) posit that high CSR firms build trust between a firm and its shareholders, that results in stock returns four to seven percentage points higher during financial crisis relative to low CSR firms. They affirm that a firms' social capital helps build stakeholder trust and cooperation, which results in a higher payoff when being trustworthy is more valuable,

like 2007 financial crisis. (Flammer 2012) also asserts that rising external pressure to conform to CSR has led stock market to reward less for CSR initiations by firms and amplify shareholders' reaction to announcement of negative events.

The CSR stock market relation can suffer due to this rebalancing. With difference stock market reaction to increase and decrease in CSR, we re-examine the impact of change in CSR on annual stock returns using dual beta model (Bhardwaj and Brooks 1993). Dual-beta model was initially used as an extension to CAPM (Markowitz 1952; Sharpe 1964) to adjust for risk differences in bull and bear markets. As the loss aversion is more pronounced, (Estrada 2007) constructs downward beta which captures the sensitivity to the market when market returns are negative or below a threshold. Prior research further finds that use of downward beta better measures the risk sensitivity to the market changes (Galagedera 2009; Berkelaar, Kouwenberg, and Post 2004). As the intensity of stock market reaction to negative events and CSR initiations is different, we further examine the stock market reaction to increase and decrease in CSR initiations. To segregate the upward and downward change in CSR, we create indicator variables representing positive and negative change in symbolic and substantive CSR. Specifically, we create indicator variables *D+SymCSR* and *D-SymCSR* for positive and negative change in symbolic CSR. *D+SymCSR* takes the value of one if there is a positive change in symbolic CSR between year t-1 and year t, and zero otherwise. *D-SymCSR* on the other hand takes the value of one if there is a negative change in symbolic CSR between year t-1 and year t, zero otherwise. Similarly, we also create indicator variables for change in substantive CSR. We estimate the following dual beta model:

$$StockReturn_{it} = \begin{pmatrix} \alpha_0^+ D + \beta_1^+ PosChange\,SymCSR_{it}/PosChange\,SubCSR_{it} + \alpha_0^- D \\ +\beta_2^- NegChange\,SymCSR_{it}/NegChange\,SubCSR + \sum \beta_3 Z_{it} + \varepsilon_{it} \end{pmatrix} \quad (4.3)$$

Where *Pos Change SymCSR* is the positive change in symbolic CSR from year t-1 to year t, *Neg Change SymCSR* is the negative change in symbolic CSR from t-1 to year t. Similarly, we also segregate change in substantive CSR in *Pos Change SubCSR* and *Neg Change SubCSR*. We control for firm variables in the previous regressions.

Table 4.5 provides the results from the dual beta model. In column (1), the coefficient for the *Pos Change SymCSR* is positive and significant at 10% level while *Neg Change SymCSR* is negative and significant at 1% level. The findings show the differences in stock market reaction to increase and decrease in CSR activities. The different reactions to increase and decrease in symbolic CSR activities may be caused by the fact that symbolic CSR is viewed as expense to repair the firm's reputational damage. Shareholders consider symbolic CSR as a good strategy to distract media attention from corporate controversy and hence any reduction is symbolic CSR leads to negative stock returns. By contract, substantive CSR initiates larger changes in the firms and the associated costs may exceeds the benefits in the short term. In column (2) an increase in substantive CSR

thus is negatively related to stock returns. Consistent with (Flammer 2012), we also find change in investors' expectations and rewards to firms to initiate CSR investments. For the sample period 2009-2013, investment in symbolic CSR does not lead to a significant change in stock returns. This may be caused by rising pressure on corporations to engage in CSR activities. Any symbolic CSR investment is viewed as expected and the no additional rewards in the form of stock returns is found. In contract, a decline in substantive CSR, as shown in column (6) is negatively related to stock returns but is not significant. This suggests the increasing awareness among investors about CSR directed towards corporate philanthropy and thus no longer invites negative reaction from the stock market.

Overall, the results suggest that market reaction to symbolic and substantive CSR is different. Shareholders recognize the motive behind CSR activities and rewards based on their perception of the impact of CSR on firm value. Bad image that results from corporate controversies lead managers to indulge in symbolic CSR. Shareholders react positively on the firms' action to 'fix the problem' and hence a positive symbolic CSR stock return relationship is obtained. Substantive CSR on the other hand, initiates larger changes in the firms and the associated costs may exceed its benefits in the short run and are considered an over-investment by the managers to gain personal reputation at the cost of shareholder wealth maximization. This leads to a negative relation between substantive CSR and stock returns. Further, the results also show the changing perceptions of investors towards CSR over the decades. With increased external pressure, firms are rewarded less for positive CSR activities but are punished more for negative events.

4.4.4. Portfolio-Based Approach

In addition to the above results, we use the portfolio-based approach to analyze the impact of symbolic and substantive CSR on stock returns. We follow the methodology of (Gompers and Lerner 2003) based on grouping stocks with similar characteristics in portfolios. At the beginning of each year, we build value weighted portfolios containing stocks with firms initiating 20% highest and lowest symbolic and substantive CSR. Portfolio returns are subsequently calculated over the entire year. The portfolio is reformed and recalculated every year. We also create a self-financing strategy that is long on the portfolios of high symbolic and substantive CSR firms and short on portfolios of low symbolic and substantive CSR firms. We then use the four-factor model of (Carhart 1997) to analyze the performance of different portfolios. The four-factor model is an extension of the classical Fama-French three-factor model (Fama and French 1992) with an additional factor to capture the momentum effect (Jegadeesh and Titman 1993). The four-factor model is estimated as follows:

$$Return_{pt} = \alpha + \beta_{1p}(R_M - R_F)_t + \beta_{2p}(SMB)_t + \beta_{3p}(HML)_t + \beta_4(MOM)_t + \varepsilon_p t \tag{4.4}$$

Where $Return_{pt}$ is the return of portfolio p minus risk free rate in year t. $(R_M\text{-}R_F)_t$ is the expected market return minus the risk-free rate in year t. $(SMB)_t$ is the difference between the expected return in year t of a portfolio of small-cap stocks and large-cap stocks.$(HML)_t$ is the difference between the expected return in year t of a portfolio of stocks with high book-to-market and that of a portfolio of stocks with low book-to-market and $(MOM)_t$ is the difference between expected return in year t of a portfolio with stocks having outperformed the previous year and having underperformed the previous year. The data for R_M, R_f, SMB, HML and MOM are obtained from Kenneth French's (2015) web page. Alpha measures the abnormal return.

The results of the analysis for value-weighted portfolios are presented in Table 4.6. Panel A of Table 4.6 reports the results of a single factor model. We find that portfolio of firms initiating higher symbolic CSR display a positive and significant alpha of 1.76% per annum, while the portfolio of firms with higher substantive CSR yield a negative alpha of 1.08% per annum. Regarding the self-finance strategy of long high CSR portfolios and short low CSR portfolios, it yields positive and insignificant abnormal returns for symbolic CSR portfolio and negative but insignificant abnormal returns for substantive CSR portfolios.

Panel B of Table 4.6 reports the results of four factor model. Consistent to one factor model, we find the portfolio of firms initiating high symbolic CSR yields a positive and significant alpha of 1.8% after controlling for size, book-to-market and momentum responsible for generating excess returns. Firms with low symbolic CSR yields a negative and significant alpha of 0.86% per annum. For the portfolios of firms based on substantive CSR, we find portfolios initiating high substantive CSR displays a negative and significant alpha of 1.37% per annum.

The results are consistent with the previous results suggesting differential market reaction to symbolic and substantive CSR. Shareholders recognize the motive behind CSR activities and reward based on their perception of the impact of CSR on firm value. Bad image that results from corporate controversies lead managers to indulge in symbolic CSR. Shareholders react positively on the firms' action to 'fix the problem' and hence a positive symbolic CSR stock return relationship is obtained. Substantive CSR on the other hand, initiates larger changes in the firms and the associated costs may exceed its benefits in the short run and are considered an over-investment by the managers to gain personal reputation at the cost of shareholder wealth maximization. This leads to a negative relation between substantive CSR and stock returns.

4.5. Additional Analysis

The above results suggests that differential impact of symbolic and substantive CSR on stock returns is attributed to the motive behind CSR initiations. Symbolic CSR incurs less expenses, repairs the firm's reputational damage and receives a positive stock market reaction. Substantive CSR ini-

tiates larger changes in the firm associated with not just window-dressing but reflects activities to encompass societal objectives with other business objectives. Substantive CSR is perceived as over-investment by managers for their personal gain at the cost of shareholder's expense leading to negative substantive CSR-stock return relation.

In this section, we examine the impact of symbolic and substantive CSR on stock returns for family firms. Family firms are characterized by their ownership identity and favorable reputation, which shape their actions towards shareholders. Moving beyond agency theory, family firms are found to initiate higher level of CSR and ethical behavior to strengthen firm reputation for the long term (Dyer and Whetten 2006; McGuire, Dow, and Ibrahim 2012). To the extent that substantive CSR can be symptomatic of worsening agency problems or genuine corporate philanthropy, potentially driven by long term reputational goals, it is important to understand if the market is capable of differentiating between the two effects. We posit that family firms may capitalize on their stakeholders' positive perspective relative to non-family firms and any investment in both symbolic and substantive CSR will have a positive impact of stock returns.

(Anderson and Reeb 2003) suggest that controlling families are long term investors and often control senior management positions. Thus, management in such firms are more likely to have incentives to improve long-term value as well as the ability to influence firm decisions to that end. We investigate the impact of symbolic and substantive investments on stock returns of family firms.

Table 4.7 provides the sample statistics and regression results for the sub sample of family firms. Panel A of Table 4.7 shows the distribution of family firms over the sample period and the percentage of family firms initiating symbolic and substantive CSR. We find relative to the complete sample, family firms relatively engage in lower symbolic CSR and higher substantive CSR. Family firms seek out to build and maintain long-term relations with its stakeholders. Investment in substantive CSR allow family firms to build a positive image in collaboration and trust of key stakeholders consistent with (Cennamo et al. 2012; McGuire, Dow, and Ibrahim 2012). Panel B of Table 4.7 reports the OLS regression results. We find the coefficient of symbolic CSR *(Sym CSR)* in column (1) is negative but insignificant and the coefficient of substantive CSR *(Sub CSR)* in column (2) is positive and significant (0.023) at 5% level. The finding suggest that stock returns are positively related to substantive CSR for a subset of family firms consistent with our hypothesis. Family firms engage in CSR to build and maintain long-term relations with their stakeholders. Unlike non-family firms, investment in substantive CSR by family firms is not linked with over-investment by managers for private gains and thus are positively related to stock returns.

This result thus reinforces our starting premise that the market's reaction to CSR is conditioned on the perceived intent driving that action. Investments undertaken by managers with the view to enhance goodwill and transparency are deemed as value enhancing and a positive stock market reaction is observed.

4.6. Conclusion

This paper explores the stock market impact of CSR activities. Prior research investigating the factors underlying CSR activities and the impact on firm value yields mixed results creating scope for future search. Based on the sample of public US firms from 2000-2013, our results indicate that shareholders react based on firm's choice (symbolic and substantive) towards CSR activities. Following a negative controversy, firms are more likely to engage in symbolic CSR. Our findings indicate that a firm's symbolic engagement leads to positive market reaction. In contrast, substantive CSR is more likely to perceive as over-investment by managers to extract private benefits at the cost of shareholder wealth and is negatively associated with stock returns. In addition, our findings also indicate that for the subset of family firms, investment in symbolic CSR receives a positive response from the stock market. The findings indicate that for family firms, engagement in substantive CSR helps them to strengthen their long –term relations with stakeholders.

Although our findings improve on prior research, they are not without their own shortcomings. CSR activity in itself driven by the circumstances encountered by the firm. Therefore, there is clearly a need for a more complex model that can incorporate the endogeneity inherent in the firm's choice of its levels of CSR activity. We look forward to future research that can address this issue.

Table 4.1: Sample Distribution

The Table provides the firm-year distribution of our sample firms by calendar year. The Table also provides percentage of firms initiating symbolic and substantive CSR every year for the sample period.

Year	# firm-year obs	% of firm-year obs with SymCSR	% of firm-year obs with SubCSR
	(1)	(2)	(3)
2000	1,133	30.78%	45.67%
2001	1,123	31.12%	47.42%
2002	1,108	32.59%	50.64%
2003	2,013	34.37%	51.66%
2004	2,063	35.57%	52.36%
2005	2,062	36.45%	52.66%
2006	2,036	35.64%	52.60%
2007	2,033	30.79%	44.00%
2008	2,072	25.26%	40.14%
2009	2,083	31.20%	45.66%
2010	2,012	35.85%	49.30%
2011	2,102	36.49%	49.47%
2012	2,090	36.58%	55.98%
2013	1,893	37.52%	56.80%
Total	25,823		

Table 4.2: Descriptive Statistics

The Table reports the summary statistics of corporate social responsibility (CSR) and other firm-level characteristics. Panel A provides the mean, median, standard deviation, 25th percentile and 75th percentile for symbolic and substantive CSR and other firm-level characteristics. Panel B reports the pairwise correlation of the main variables.The symbol * indicate statistical significance at 10% and under.

Panel A: Summary Statistics

Variables	# of firm-year obs	Mean	Median	StDev	25th Pcnt	75th Pcnt
Sym CSR	25,823	1.54	0.971	1.734	0.991	1.238
Sub CSR	25,823	0.618	0.472	1.139	-0.461	0.445
Stock Returns	25,811	.1154	0.587	1.637	-0.178	0.299
Ln (Assets)	25,823	7.387	7.272	1.751	6.12	8.42
Leverage	25,823	0.221	0.180	0.225	0.038	0.332
ROA	25,823	0.106	0.116	0.186	0.063	0.172
Tobin's Q	25,823	3.406	2.203	6.466	1.418	3.610
Firm age	23,370	19.91	20	6.566	17	24
Sales Growth	17,938	0.448	0.081	28.07	-0.004	0.194
R&D Exp	16,197	0.684	0.031	10.352	0.034	0.134
Cash Flow to Assets	22,863	0.032	0.0431	0.152	0.003	0.089

Panel B: Pairwise Correlation

Variables	Sym CSR	Sub CSR	St Ret	Ln(Assets)	Leverage	ROA	Tobin's Q	Firm age
Sym CSR	1							
Sub CSR	-0.0010	1						
Stock Returns	0.409*	-0.0069	1					
Ln (Assets)	0.5640*	0.0380*	0.0412*	1				
Leverage	0.0627*	-0.0523*	0.0482*	0.2104*	1			
ROA	0.0858*	0.0185*	0.1474*	0.1567*	-0.0140*	1		
Tobin's Q	0.0019	0.0051	0.0068	0.0028	0.0066	0.0128*	1	
Firm age	0.1545*	0.0944*	-0.0342*	0.1720*	0.0179*	0.0904*	-0.0010	1

Table 4.3: Impact of Symbolic and Substantive CSR on Stock Returns: OLS Regression

The Table reports the OLS regression results estimating the impact of symbolic and substantive CSR on annual stock returns. Annualized stock return is the dependent variable and symbolic *(Sym CSR)* and substantive CSR *(Sub CSR)* are the main variables of interest.We control for other firm-level characteristics. The regression is run for the entire sample and for the two sub periods 2000-2006 and 2009-2013.The symbol ***,**,* indicate statistical significance at 1%, 5% and 10% level, respectively.

Dep Var Stock Returns	(1)	(2)	(3)	(4)	(5)	(6)
Sample	All	All	2000-2006	2000-2006	2009-2013	2009-2013
Intercept	1.688***	1.593***	6.921***	6.656***	0.834	0.813
	(3.15)	(3.10)	(2.86)	(2.75)	(1.20)	(1.23)
Sym CSR	0.010*		0.054***		0.005*	
	(1.98)		(2.73)		(1.87)	
Sub CSR		-0.096*		-0.122**		-0.113**
		(1.71)		(2.39)		(2.09)
Ln (Assets)	0.161***	0.150***	0.432**	0.391**	0.256***	0.253***
	(3.01)	(3.01)	(2.46)	(2.37)	(3.03)	(3.17)
Leverage	0.414*	0.385	1.238**	1.148**	0.723	0.720
	(1.67)	(1.56)	(2.36)	(2.14)	(1.74)	(1.73)
ROA	1.415***	1.467***	2.087***	1.968**	0.350**	0.350**
	(3.08)	(3.18)	(2.59)	(2.44)	(2.44)	(2.44)
Tobin's Q	0.009***	0.010***	0.014***	0.014***	0.002***	0.002***
	(3.49)	(3.56)	(3.25)	(3.32)	(2.60)	(2.60)
Firm age	-0.059	-0.044	-1.139***	-1.132***	-0.510	-0.511
	(0.37)	(0.27)	(3.62)	(3.59)	(1.61)	(1.61)
Sales Growth	0.002***	0.003***	0.002***	0.002***	0.001**	0.003**
	(3.03)	(3.01)	(3.54)	(2.69)	(2.27)	(2.37)
R&D	0.007*	0.007*	0.010	0.012	0.010*	0.011*
	(1.87)	(1.89)	(1.40)	(1.60)	(1.98)	(1.98)
Cash Flow to Assets	5.083***	5.138***	2.453***	2.545***	4.083**	4.082**
	(2.46)	(2.55)	(2.64)	(2.73)	(2.22)	(2.22)
No of obs	22,862	22,862	10,288	10,288	12,574	12,574
R-Squared	0.32	0.32	0.26	0.25	0.20	0.19
Industry/Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes

Table 4.4: Impact of change in symbolic and substantive CSR on stock returns: OLS Regression

The Table reports the panel regression results on the relation between the change in symbolic and substantive CSR on annual stock returns. Change in symbolic CSR *(Change Sym CSR)* is calculated as the difference between symbolic CSR in year t-1 and year t. Change in substantive CSR *(Change Sub CSR)* is also calculated as the difference between substantive CSR in year t-1 and year t .We control for other firm-level characteristics. The regression is run for the entire sample and for the two sub periods 2000-2006 and 2009-2013.The symbol ***,**,* indicate statistical significance at 1%, 5% and 10% level, respectively.

Dep Var Stock Returns	(1)	(2)	(3)	(4)	(5)	(6)
Sample	All	All	2000-2006	2000-2006	2009-2013	2009-2013
Intercept	0.020	0.006	1.042*	0.966*	1.630**	1.659**
	(1.04)	(1.01)	(1.95)	(1.88)	(2.29)	(2.33)
Change SymCSR	0.120**		0.150***		0.148	
	(2.41)		(3.18)		(1.30)	
Change SubCSR		-0.070*		-0.144**		-0.022
		(1.84)		(2.22)		(1.18)
Ln (Assets)	0.060**	0.063**	0.123***	0.121**	0.064***	0.070*
	(2.17)	(2.24)	(2.62)	(2.32)	(2.86)	(1.94)
Leverage	0.426*	0.435*	1.032***	1.051***	1.408***	1.420***
	(1.73)	(1.77)	(2.74)	(2.79)	(2.73)	(2.76)
ROA	0.253**	0.274***	1.755**	1.670*	2.229*	2.211*
	(2.49)	(2.53)	(2.08)	(1.98)	(1.90)	(1.87)
Tobin's Q	0.007***	0.007***	0.018***	0.017***	0.003*	0.005*
	(2.58)	(2.57)	(2.75)	(2.74)	(1.99)	(1.96)
Firm age	0.129*	0.138*	0.087	0.066	0.047	0.049
	(1.75)	(1.81)	(1.25)	(1.19)	(1.21)	(1.22)
Sales Growth	0.002***	0.003***	0.004**	0.003**	0.002***	0.003***
	(2.56)	(2.55)	(2.21)	(2.18)	(2.36)	(2.41)
R&D	0.011***	0.011***	0.007	0.008	0.022	0.022
	(3.15)	(3.15)	(1.15)	(1.16)	(1.31)	(1.31)
Cash Flow to Assets	5.540**	5.572**	3.235**	3.328**	6.927***	6.929***
	(2.15)	(2.20)	(2.31)	(2.40)	(2.63)	(2.63)
No of obs	16,787	16,787	7,554	7,554	9,232	9,232
R-Squared	0.36	0.30	0.22	0.21	0.23	0.22
Industry/Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes

Table 4.5: Impact of change in symbolic and substantive CSR on stock returns: Dual-Beta Model

The Table reports the Dual-beta model results to compare the impact of increase and decrease in symbolic and substantive CSR on annual stock returns. Change in symbolic and substantive CSR is segregated into positive change, if the level of symbolic and substantive CSR increases from year t-1 to t and negative change, if the level of symbolic and substantive CSR decreases from year t-1 to t.The Dual-beta model compares the market reaction to increase and decrease in CSR initiation by firms.The regression is run for the entire sample and for the two sub periods 2000-2006 and 2009-2013.The symbol ***,**,* indicate statistical significance at 1%, 5% and 10% level, respectively.

Dep Var Stock Returns	(1)	(2)	(3)	(4)	(5)	(6)
Sample	All	All	2000-2006	2000-2006	2009-2013	2009-2013
Intercept	1.854**	-0.914	1.902	2.611*	0.940	-0.407
	(2.13)	(1.00)	(0.88)	(1.96)	(0.95)	(0.30)
Pos changeSymCSR	0.136*		0.341***		0.046	
	(1.86)		(2.45)		(1.21)	
Neg changeSymCSR	-1.007***		-0.079**		-0.097**	
	(5.32)		(2.27)		(2.45)	
Pos changeSubCSR		-0.291**		-0.234**		-0.766*
		(2.08)		(2.07)		(1.87)
Neg chnageSubCSR		-0.692		0.809***		-0.261
		(1.71)		(3.15)		(1.13)
Ln (Assets)	0.242***	0.044***	0.315**	0.230**	0.099*	0.162**
	(2.85)	(2.54)	(2.23)	(2.40)	(1.95)	(2.11)
Leverage	1.700**	0.038**	1.382*	0.719*	2.189**	1.113**
	(2.04)	(2.10)	(1.93)	(1.94)	(2.39)	(2.48)
ROA	4.312***	0.309***	0.776**	2.800***	5.894***	3.818***
	(2.99)	(2.38)	(2.43)	(2.65)	(2.97)	(2.60)
Tobin's Q	0.004	0.010	0.003	0.017	0.016	0.015
	(1.88)	(1.18)	(1.25)	(1.12)	(1.09)	(1.21)
Firm age	0.151	0.380	0.144	0.390	0.335	1.411
	(0.56)	(1.33)	(1.21)	(0.91)	(1.11)	(1.37)
Sales Growth	0.002*	0.003*	0.004**	0.003**	0.003**	0.002**
	(1.92)	(1.98)	(2.11)	(2.15)	(2.38)	(2.06)
R&D	0.022***	0.006*	0.003**	0.014*	0.026**	0.017**
	(2.90)	(1.98)	(2.18)	(1.93)	(2.35)	(2.06)
Cash Flow to Assets	1.070***	3.815***	2.670**	1.945*	1.137***	2.380***
	(2.78)	(2.78)	(2.24)	(1.97)	(2.51)	(2.67)
No of obs	16,787	16,787	7,554	7,554	9,232	9,232
R-Squared	0.19	0.20	0.18	0.17	0.21	0.21
Industry/Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes

Table 4.6: Impact of Symbolic and Substantive CSR on Stock Returns: Portfolio Based Analysis

The Table shows the one-factor model and abnormal returns using (Carhart 1997) four-factor model for portfolios engaging in high CSR and low CSR. Panel A presents the results of one factor model. We first form the portfolio of stocks investing in high CSR (top 20%) and low CSR (bottom 20%). Portfolio performance is measured using annual stock returns Abnormal returns are computed using a single factor model.Rm-Rf is the difference between the market return and the risk-free rate. Alpha measures the abnormal returns for the portfolios. We also use a self-financing strategy of long high CSR portfolio and short low CSR portfolios to compute the difference in abnormal returns for the strategy. Panel B reports the result of four factor model. The factors Rm-Rf, SMB, HML and MOM are obtained from Kenneth French's (2015) website. The symbol ***,**,* indicate statistical significance at 1%, 5% and 10% level, respectively.

Panel A: One Factor Model

	High SymCSR -Risk Free	Low SymCSR -Risk Free	High SymCSR - Low SymCSR	High SubCSR -Risk Free	Low SubCSR -Risk Free	High SubCSR - LowSubCSR
	(1)	(2)	(3)	(4)	(5)	(6)
Alpha	0.0176***	0.00786	0.00410	-0.0108*	0.00476	-0.00147
	(2.60)	(1.39)	(1.84)	(1.87)	(1.25)	(3.88)
Rm-Rf	0.065***	0.087***	-0.023***	0.070***	0.063***	-0.007***
	(6.07)	(9.24)	(2.67)	(6.68)	(3.88)	(2.72)
No of obs	16	16	16	16	16	16
R-Squared	0.22	0.19	0.18	0.17	0.21	0.21
Industry/Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes

Panel B: Four-Factor Model

	High Sym CSR - Risk Free	Low Sym CSR - Risk Free	High Sym CSR- Low Sym CSR	High Sub CSR - Risk Free	Low Sub CSR - Risk Free	High Sub CSR - Low Sub CSR
	(1)	(2)	(1) -(2)	(3)	(4)	(3)-(4)
Alpha	0.018**	-0.0086**	0.0199*	-0.0137*	-0.024	0.033
	(2.34)	(2.12)	(1.83)	(1.98)	(1.65)	(1.07)
RM- Rf	0.068***	0.087***	-0.019***	0.070***	0.069***	0.002***
	(2.35)	(3.81)	(2.32)	(2.67)	(2.61)	(2.36)
SMB	-0.003***	0.031***	-0.034***	0.003	0.001	-0.001
	(2.67)	(3.40)	(2.84)	(1.00)	(0.90)	(1.91)
HML	-0.006***	-0.013***	0.006**	-0.008	-0.015	0.007**
	(2.86)	(3.37)	(2.07)	(1.58)	(1.40)	(2.15)
MOM	-0.001	0.002	-0.003	-0.005	0.001	-0.006
	(1.50)	(1.55)	(1.39)	(1.76)	(0.96)	(1.03)
Years	16	16	16	16	16	16
R-Squared	0.25	0.23	0.26	0.18	0.22	0.19

Table 4.7: Impact of Symbolic and Substantive CSR on stock returns: Evidence using family firms

The Table provides descriptive statistics and panel regression results examining the impact of CSR on stock returns using a sample of family firms. Panel A provides the frequency distribution of family firms by calendar year and the percentage of firm-year observations investing in symbolic and substantive CSR. Panel B provides the OLS regression results of the impact of symbolic and substantive CSR on annualized stock returns for sample of family firms. We control for firm-level characteristics.The symbol ***,**,* indicate statistical significance at 1%, 5% and 10% level, respectively.

Panel A: Summary Statistics

Year	# firm-year obs	% of family firms	% of family firm-year obs with SymCSR	% of family firm-year obs with SubCSR
	(1)	(2)	(3)	(4)
2000	1,133	10.15%	25.21%	47.89%
2001	1,123	11.25%	25.61%	48.65%
2002	1,108	13.56%	26.87%	49.12%
2003	2,013	12.98%	25.97%	52.14%
2004	2,063	13.45%	24.54%	54.41%
2005	2,062	13.19%	23.76%	55.14%
2006	2,036	14.06%	22.98%	56.14%
2007	2,033	14.65%	23.45%	55.61%
2008	2,072	13.87%	25.61%	52.12%
2009	2,083	13.45%	25.87%	56.14%
2010	2,012	14.14%	24.56%	58.12%
2011	2,102	14.09%	23.65%	60.13%
2012	2,090	14.76%	22.65%	61.15%
2013	1,893	15.45%	21.96%	63.74%
Total	25,823			

Panel B: Impact of Symbolic and Substantive CSR on Stock Returns: Regression Analysis

Dep Var: Stock Returns	(1)	(2)	(3)	(4)	(5)	(6)
Sample	All	All	2000-2006	2000-2006	2009-2013	2009-2013
Intercept	-0.400**	-0.387*	0.128*	0.134*	-1.320**	-1.465**
	(2.14)	(1.98)	(1.86)	(1.98)	(2.15)	(2.21)
Sym CSR	-0.025		0.134*		0.064	
	(1.22)		(1.98)		(0.90)	
Sub CSR		0.023**		0.054*		0.065**
		(2.38)		(1.98)		(2.12)
Ln(Assets)	0.037**	0.034**	0.029**	0.021**	0.032*	0.031*
	(2.34)	(2.21)	(2.05)	(2.12)	(1.98)	(1.98)
ROA	0.129	0.115	0.106*	0.110*	0.124**	0.126**
	(1.71)	(1.76)	(1.97)	(1.98)	(2.05)	(2.02)
Tobin's Q	0.092***	0.084***	0.086**	0.084**	0.091***	0.098***
	(2.85)	(2.56)	(2.36)	(2.35)	(2.85)	(2.53)
Firm age	0.043*	0.032**	0.034**	0.036**	0.041**	0.038**
	(1.90)	(2.12)	(2.02)	(2.21)	(2.18)	(2.14)
Sales Growth	0.002**	0.003***	0.001***	0.001***	0.002***	0.003***
	(2.31)	(2.54)	(2.53)	(2.56)	(3.14)	(3.12)
R&D	0.007***	0.004***	0.003***	0.004***	0.005***	0.005***
	(3.12)	(3.13)	(2.97)	(3.02)	(2.87)	(2.98)
Cash Flow to Assets	1.097	1.054	1.098	1.054	1.085	1.087
	(0.90)	(1.03)	(1.02)	(1.14)	(1.13)	(0.90)
No of obs	3,518	3,518	1,583	1,583	1,934	1,934
R-Squared	0.18	0.17	0.15	0.17	0.20	0.18
Industry/year Fixed effects	Yes	Yes	Yes	Yes	Yes	Yes

Chapter 5

Conclusion

This thesis advances scholarship on women and leadership by analyzing the challenges women and occupational minorities face during their career path to top leadership positions and also after attaining those positions. We examine whether the barriers that women CEOs face in the form of glass ceiling impact firm performance and corporate social responsibility. We also examine if the challenges women CEOs face in the form of glass cliff impact their earnings management practices.

Our first essay asks if the difference in obstacles men and women CEOs face on their route to top leadership positions results in the superior performance of firms led by women CEOs. The existence of glass-ceiling in organizational hierarchies potentially subjects women candidates to high levels of discrimination, vis-a-vis their male counterparts. This potentially prevents a disproportionately large number of female candidates from making it to the top. Those who do make it are of potentially higher caliber than their average male counterparts in that position. Therefore, arguably, the glass-ceiling manifests in the form of superior performance of the average women in the position of leadership. Our results show that if we divide the sample of CEOs by gender (male vs. female) and ethnicity (white vs. non-white), we find that the average non-white female CEOs (two levels of discrimination: gender and ethnicity) emerge as the best performers followed by white female CEOs and non-white male CEOs. In contrast, the average white-male CEO (no glass ceiling discrimination) depicts the worst performance. We also examine if the barriers occupational minority CEOs face on their route to the top shape their managerial traits in the form of CSR initiations. We find that because occupational minority CEOs face higher performance pressures, negative evaluations and lower job security than their white-male counterparts, they initiate higher symbolic and substantive CSR to increase their reputation and strengthen relations with stakeholders.

The second essay examines if gender discrimination after women are elevated to positions of power impacts financial reporting quality. Specifically, we extend the literature by using role con-

gruity theory and glass cliff hypothesis to examine the earnings management behavior of female chief executive officers (CEOs) conditional on the power they hold. Role congruity theory suggests that individuals are judged with respect to the congruence between their characteristics dictated by their gender stereotypes and the requirements of the job that they occupy. Women CEOs engaging in earnings management creates incongruity between feminine stereotypes and masculine qualities of a leader. This leads to negative expectations and evaluations about the performance of women CEOs. Prior studies find that power acts as a stimulus that can shift managers' focus, we therefore surmise that CEO gender and earnings management relationship distorts with increased CEO power. That is, in a powerful CEO setting, women CEOs are subject to less scrutiny and have an opportunity to influence the decision-making process.

Using propensity score matched sample, instrumental variable analysis and difference-in-difference analysis, we show that female CEOs do not necessarily reduce earnings management. For CEOs holding less power, women CEOs demonstrate lower earnings management relative to their male counterparts. However with increased power, we find women and male CEOs exhibit similar earnings management behaviors. We, therefore, add to the exiting gender-diversity literature by showing that earnings management behaviors of women CEOs are not solely dictated by their risk-taking and ethical attitudes, but by the existence of glass cliffs which imposes high demands on women CEOs to conform to their gender roles.

The third essay examines the stock price changes to the firm's strategic choice towards symbolic and substantive CSR. Corporate social responsibility (CSR) has continued to gain importance in managerial practice over the last several decades. While early studies treated CSR as an obligation on businesses to pursue policies that are desirable in terms of the objectives and values of society, subsequent ones contend that CSR is 'fundamentally subversive' of the true responsibilities of business. We examine the relationship between the firm's stock price performance and CSR based on intent or motive behind CSR initiations. Firms strategically utilize symbolic and substantive CSR to either repair reputational damage following negative societal events or undertake actions intended to integrate CSR in the overall business objectives. Our findings indicate that the market responds positively to symbolic CSR while negatively to substantive CSR. Media attention towards negative firm events puts a corporation's reputation at risk and firms engagement in symbolic CSR acts as a quick response from the firm to show that it is doing something to 'fix the problem'. This results in a positive response from the market leading to positive symbolic CSR-annual stock returns relationship. Substantive CSR, on the other hand often requires subsequent changes in operations, systems and processes. Such investments require a high level of coordination and integration. The cost of implementing substantive CSR may be higher than the benefits in the short-term and leads shareholders' to view it as a manifestation of agency. We further explore the impact of CSR activity on the stock price by examining the subset of family firms in our

sample. Since family firms are expected to have a long-term outlook with a deep interest in the eventual survival and performance of the firm, we expect CSR activities, in particular substantive CSR activities, are not perceived as agency costs. Consistent with our conjecture we find that the negative association between substantive CSR and subsequent stock price performance is absent for family firms.

Further, there has been a general trend towards higher societal and environmental consciousness over the past two decades because of increased external pressure and institutional norm to go green. Using a Dual-beta Model, we find that with rising pressure on corporations to engage in CSR activities, investment in symbolic CSR is rewarded less by the stock market over the sample period. In contrast, the negative relation between substantive CSR and stock returns diminishes over the sample period as the awareness among investors about CSR directed towards corporate philanthropy has increased over the sample period.

Our findings have several interesting implications for the literature on CSR activity. Firstly, we find that crucial differences underlying CSR activities impact subsequent stock returns. Second, we provide a detailed description of how the stock market reacts to CSR based on the intent or motivation behind CSR activities. Our results indicate that there is a conflict of interest between shareholders and managers with respect to the optimal level of CSR activity. Third, we also fill the gap in the existing CSR-firm value relation literature. The existing empirical literature studying the impact of CSR on firm value yields mixed evidence with some evidence pointing towards a positive impact of CSR on firm value while some finding a negative or no market value-CSR relationship. Our research contributes to this equivocal question by examining the CSR-stock return relation moderated by the motive behind CSR initiations.

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Appendices

A. Description of variables and their computation for Chapter 2

Variables	Description
Return on Assets (ROA)	Defined as the ratio of income before extraordinary items (data item ib in Compustat) divided by the book value of total assets (data item at in Compustat),
Tobin's Q	Defined as the ratio of market value of total assets to book value of total assets. The market value of assets is calculated as the book value of total assets (data item at in Compustat) minus the book value of common equity (ceq) plus the number of common shares outstanding (csho) times the stock price (prcc_f).
Symbolic CSR (Sym CSR)	The first principal component extracted from the twelve categories of CSR strengths and concerns, recorded in the MSCI KLD database
Substantive CSR (Sub CSR)	The additive inverse of the second principal component extracted from the twelve categories of CSR strengths and concerns, recorded in the MSCI KLD database
Ln(Assets)	Natural Logarithm of Total assets (data item at in Compustat)
Leverage	Defined as the sum of long-term debt(data item dltt in Compustat) plus debt in current liabilities (dlc) divided as market value of equity
Firm age	The number of years since a firm first appears in the CRSP or COMPUSTAT database.
Standard Dev of ROA	Computed as 3 year rolling standard deviation of return of assets (ROA) to measure the riskiness of firm's investment decisions
Sales Growth	Defined as the ratio of sales (data item sale in Compustat) in the current fiscal year to sales in the last year minus 1
Tangibility	Defined as the ratio of fixed assets to total assets
Capital Exp (CapEx)	Computed as the capital expenditure for a firm in a year (data item Capx in Compustat),divided by net sales for the year
Board Size	Natural logarithm of total number of directors serving on a corporate board
Fraction of ind directors	The number of directors indicated as independent directors by ISS database, divided by the total number of directors
Fraction of female directors	The number of female directors serving on a corporate board divided by the total number of directors.

B. Description of variables and their computation for Chapter 3

Variables	Description
CEO Duality	An indicator variable which takes the value of one in firm-years where the CEO is also chairing the board, zero otherwise
CEO Payslice	A measure of CEO power computed as the ratio of CEO pay (tdc1 in Execucomp)to the total pay awarded to top five executives including the CEO
Absolute Discretionary Accruals (AbsDA)	Discretionary accruals are computed based on the cross-sectional performance-adjusted modified Jones Model estimated using firms in the Fama French 17 industry and year
Real earnings management (Real EM)	Computed as the sum of abnormal discretionary expenses (multiplied by -1) and abnormal production costs(calculated as the estimated residuals using equations 3.1 and 3.2
CEO Female	An indicator variable that equals 1 if the CEO in the firm-year observation is female, zero otherwise
CEO age	Age of CEO in years as depicted by ISS database
CEO tenure	Computed as the number of years since the CEO's appointment
Board Size	Natural logarithm of total number of directors serving on Corporate board
Fraction of ind directors	Computed as the number of directors indicated as independent by the ISS database, divided by the total number of directors
Frac of female directors	Computed as the ratio of number of female directors serving the corporate board, divided by the total number of directors.
Standard Dev of Operating Cash Flow	Computed as 3 year rolling standard deviation of operating cash flow to measure the riskiness of firm's investment decisions
Z-Score	Measures the financial strength of the company. Computed as 1.2*(working capital/total assets)+1.4*(retained earnings/total assets)+ 3.3*(earnings before interest and taxes/total assets) +0.6*(Market value of equity/total liabilities) + 1*(Sales/total assets)
E-index	Entrenchment index based on six antitakeover provisions in the ISS governance database: Staggered board, poison pills, supermajority requirements for mergers, limits to shareholder bylaw amendments, limits to the charter bylaw amendments and golden parachutes.

C. Description of variables and their computation for Chapter 4

Variables	Description
Symbolic CSR (Sym CSR)	The first principal component extracted from the twelve categories of CSR strengths and concerns, recorded in the MSCI KLD database
Substantive CSR (Sub CSR)	The additive inverse of the second principal component extracted from the twelve categories of CSR strengths and concerns, recorded in the MSCI KLD database.
Change SymCSR	Calculated as the difference between symbolic CSR in the current fiscal year and the symbolic CSR last year
Change SubCSR	Calculated as the difference between substantive CSR in the current fiscal year and the substantive CSR last year
Annual Stock returns	Annualized Monthly returns computed as the geometric average of monthly returns obtained from CRSP database
Leverage	Defined as the sum of long term debt (data item dltt in Compustat) and debt in current liabilities (data item dlc in Compustat), divided by total book assets (data item at in Compustat)
Cash flow to Assets	Computed as the net operating cash flow (data item oancf in Compustat), divided by total assets (data item at in Compustat)
Family Firm	An indicator variable that takes the value of one if the firm-year observation is listed as family firm using Ron Anderson's webpage
Excess Return on Market	Market excess return is the market return in excess of risk-free rate in year t, obtained from Kenneth French's (2015) web page
Size Factor (SMB)	Size factor is the difference between the value-weighted return of a portfolio of small stocks and the value-weighted return of a portfolio of large stocks in the year t, obtained from Kenneth French's (2015) web page
Book-to Market Factor (HML)	Book-to-Market factor is the difference between the value-weighted return of a portfolio of high B/M stocks and the value-weighted return of a portfolio of low B/M stocks for the year t, obtained from Kenneth French's (2015) web page
Momentum Factor (MOM)	Momentum factor is the difference between the value-weighted return of a portfolio of stocks with high returns during year t-1 and the value-weighted return of a portfolio of stocks with high returns during year t-1, obtained from Kenneth French's (2015) web page

D. Description of strengths and concerns in the MSCI KLD database

Category	Strengths	Concerns
Corporate	Corruption & Political Instability	Accounting (2005 to 2009)
Governance	Financial System Instability	Business Ethics
	Limited Compensation (1991 to 2009)	Controversial Investments
	Ownership Strength (1991 to 2009)	Governance Structures (from 2010)
	Political Accountability (2005 to 2009)	High Compensation (1991 to 2009)
	Public Policy Strength (2007 to 2011)	Ownership (1991 to 2009)
	Reporting Quality (from 1996)	Political Accountability (2005 to 2007)
	Other Strengths (1991 to 2009)	Public Policy (2007 to 2011)
		Reporting Quality (from 2005)
		Other Concerns (from 1992)
Community	Charitable Giving (1991 to 2011)	Community Impact (from 1991)
	Community Engagement (from 2010)	Investment Controversies (1991 to 2009)
	Innovative Giving (from 1991)	Tax Disputes (1991 to 2009)
	Non-US Charitable Giving (1994 to 2009)	Other Concerns (1991 to 2009)
	Support for Education (1994 to 2009)	
	Support for Housing (1991 to 2009)	
	Volunteer Programs (2005 to 2009)	
	Other Strengths (1991 to 2011)	
Diversity	Board of Directors – Gender/Minorities (from 1991)	Board of Directors – Gender/Minorities (from 1991)
	CEO (1991 to 2009)	Non-Representation (1993 to 2011)
	Employment (Disabled) (1991 - 2009)	Workforce Diversity (from 1991)
	Employment of Underrepresented Groups (from 2010)	Other Concerns (1991 to 2009)
	Gay & Lesbian Policies (1995 to 2011)	
	Promotion (1991 to 2011)	
	Women and Minority Contracting (from 1991)	
	Work-Life Benefits (1991 to 2011)	
	Other Strengths (from 1991)	

Category	Strengths	Concerns
Employee relations	Cash Profit Sharing (from 1991)	Child Labor
	Compensation & Benefits	Employee Health & Safety (from 1991)
	Employee Health and Safety (from 2003)	Labor-Management Relations
	Employee Involvement (from 1991)	Retirement Benefits Concern (1992 to 2009)
	Employee Relations	Supply Chain (from 1998)
	Human Capital Management	Union Relations (from 1991)
	No-Layoff Policy (1991 to 1993)	Workforce Reductions (1991 to 2009)
	Professional Development	
	Retirement Benefits (1991 to 2009)	
	Supply Chain Labor Standards (from 2002)	
	Union Relations (from 1991)	
	Other Strength (1991 to 2011)	
Environment	Biodiversity & Land Use	Agriculture Chemicals (1991 to 2009)
	Climate Change (from 1991)	Biodiversity & Land Use (from 2010)
	Environmental Management Systems (from 2006)	Climate Change (from 1999)
	Environmental Opportunities (from 1991)	Hazardous Waste (1991 to 2009)
	Packaging Materials & Waste (from 1991)	Impact of Products & Services (from 2010)
	Property, Plant, Equipment (1991 to 1995)	Operational Waste (from 2010)
	Raw Material Sourcing	Ozone Depleting Chemicals (1991 to 2009)
	Waste Management (from 1991)	Regulatory Compliance (from 1991)
	Water Stress	Supply Chain Management
	Other Strengths (from 1991)	Toxic Spills & Releases (from 1991)
		Water Management
		Other Concerns (from 1991)
Human Rights	Human Rights Policies & Initiatives (from 1994)	Freedom of Expression & Censorship
	Indigenous Peoples Relations Strength (from 2000)	Human Rights Violations
	Labor Rights Strength (2002 to 2009)	Indigenous Peoples Relations Concern (2000 to 2009)
	Positive Record in S. Africa (1994 to 1995)	Labor Rights Concern (1998 to 2009)
		Mexico (1994 to 2001)
		Northern Ireland (1991 to 1994)
		Operations in Sudan (from 2010 to 2011)
		South Africa (1991 to 1994)
		Support for Controversial Regimes (from 1994)
		Other Concerns (from 1994)
Product	Access to Finance (from 1991)	Anti competitive Practices (from 1991)
	Quality (from 1991)	Customer Relations
	R+D, Innovation (1991 to 2009)	Marketing & Advertising (from 1991)
	Social Opportunities (from 1991)	Product Quality & Safety (from 1991)
	Other Strengths (1991 to 2009)	Other Concerns (from 1991)

E. Correlation matrix of strengths and concerns for CSR dimensions in the MSCI KLD database

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
ENV str	1.000											
ENV con	-0.211*	1.000										
COMP str	0.199*	0.7398*	1.000									
COMP com	-0.5913*	0.6319*	0.0035	1.000								
EMP str	0.5906*	-0.1479*	0.1192*	-0.2959*	1.000							
EMP con	-0.6984*	0.3575*	-0.2769*	0.7876*	-0.5704*	1.000						
DIV str	-0.6066*	0.8043*	0.3091*	0.8399*	-0.5640*	0.7149*	1.000					
DIV con	0.5599*	-0.2166*	-0.0069	-0.4217*	-0.3030*	-0.2565*	-0.2120*	1.000				
PRO str	0.6030*	-0.0037	0.5054*	-0.5128*	0.8187*	-0.7896*	-0.5224*	-0.1114*	1.000			
PRO con	-0.4061*	-0.4061*	0.4798*	0.8396*	-0.1873*	0.4723*	0.8525*	-0.3569*	-0.1944*	1.000		
HUM str	0.7833*	-0.4195*	-0.0621*	-0.5436*	0.9052*	-0.6605*	-0.7743*	0.0139*	0.7013*	-0.4877*	1.000	
HUM con	-0.6189*	0.4682*	0.1577*	0.5397*	-0.1951*	0.3844*	0.6171*	-0.5981*	-0.2798*	0.6081*	-0.4141*	1.000

F. Principal Component Analysis Factor Loadings and Communality

PC 1 is the first principal component and represents symbolic CSR. It loads positively on CSR strengths and concerns. PC 2 loads negatively on strengths and positively on concerns. The inverse of PC 2 is interpreted as substantive CSR. -1*PC 2 is the measure of substantive CSR.

CSR categories	PC 1	PC 2	Communalities
com_con	0.456	0.468	0.426
div_con	-0.205	0.413	0.213
emp_con	0.411	0.323	0.274
env_con	0.547	0.519	0.568
hum_con	0.447	0.304	0.292
pro_con	0.556	0.147	0.331
com_str	0.633	-0.286	0.482
div_str	0.686	-0.351	0.594
emp_str	0.587	-0.224	0.394
env_str	0.622	-0.043	0.388
hum_str	0.280	-0.130	0.096
pro_str	0.423	-0.346	0.298
Eigenvalues	3.086	1.270	
% of variance	25.72%	10.58%	