MANAGERIAL ATTRIBUTES AND ACCOUNTING AND FINANCIAL PRACTICES

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DEDICATION

To my parents, family, and friends.

MANAGERIAL ATTRIBUTES AND ACCOUNTING AND FINANCIAL PRACTICES

by

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DISSERTATION
Presented to the Graduate Faculty of
The University of Texas at San Antonio
In Partial Fulfillment
Of the Requirements
For the Degree of

DOCTOR OF PHILOSOPHY IN BUSINESS ADMINISTRATION
WITH AN EMPHASIS IN ACCOUNTING

THE UNIVERSITY OF TEXAS AT SAN ANTONIO
College of Business
Department of Accounting
December 2013

ACKNOWLEDGEMENTS

Thank you to my committee, Dr. Sharad Asthana, Dr. James Groff, Dr. Emeka Nwaeze, Dr. Stewart Miller and Dr. John Wald. I appreciate all of your time and efforts on my behalf during this process. I would also thank all the other faculty who have assisted, coached and advised me through the doctoral program, as well as my fellow students, who have provided encouragement and support throughout the journey.

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This research consists of two essays that examine the impact of managerial attributes on a firm's accounting and financial practices. Essay 1 documents the relationship between Chief Executive Officer (CEO) and Chief Financial Officer (CFO) power, and earnings management decisions. My investigation reveals that the use of specific earnings mechanism, such as accruals and real activities management, is inversely related to its cost. Further, I do not find any consistent evidence to support that the relative power of CEOs and CFOs interacts with the costs of these earnings management mechanism to determine the specific components used in the earnings management mix.

In second essay, I examine whether the quality of earnings and financial policies of a firm improves when its CFO serves on another company's board of directors. Consistent with my hypotheses, I find that firms with their CFOs on outside boards are associated with better accruals quality, lower likelihood of restatements, more persistent earnings, and greater financial flexibility, as reflected in faster adjustment toward target debt ratios and lower sensitivity between cash holdings and cash flow shocks. These findings are based on several methods that control for unobserved factors that may affect both incidence of CFO outside directorship and a firm's accounting and financial policies.

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CHAPTER I: INTRODUCTION

An organization is a collection of different agents with diverse interests, and decision making within an organization involves group members with differences in opinion. Additionally, these agents are embedded in social networks shared by many firms and agents in those firms. My dissertation investigates how the internal and external dynamics of organizations influence an agent's behavior. Specifically, I examine how agents interact within and outside an organization and how these interactions influence a firm's accounting and financial policies.

In essay 1 (Chapter II), I study the relationship between Chief Executive Officer (CEO) and Chief Financial Officer (CFO) power, and earnings management (EM) decisions. My goal in this paper is to address two central themes in earnings management decisions that reflect the joint opinion of CEOs and CFOs. First, EM is costly to both CEOs and CFOs personally. Therefore, in general, both the CEO and CFO prefer EM mechanisms that result in lower personal costs. Specifically, I contend that the costs of using accruals would be higher to CFOs than to CEOs. In contrast, CEOs would be less likely than CFOs to engage in real activity management (RAM) when the cost of using it increases. Second, I examine how the relative power of CEOs and CFOs influences the choice mechanism used in EM given the costs of each of these mechanisms. For example, I argue that as the CFO becomes relatively powerful in an organization, the propensity to use accruals decreases when the costs of using accruals increase (i.e. moving from within GAAP to egregious accruals management). Similarly, I examine these issues with regards to real activity management.

Using a panel of U.S. firms, I find that both CEO's and CFO's incentive-based compensation has a statistically significant association with accruals management (AM). In

contrast, I find no consistent evidence between managerial compensation and real activities management. Overall, the results suggest that, in general, managers find real-activities management (RAM) costlier than accruals management, and are less likely to use real-activities as a mechanism to manipulate earnings.

I further examine whether earnings management through different means could have different perceived costs to CEOs and CFOs. To achieve this, I use various measures of earnings management costs. Specifically, I use Dechow et al.'s (2011) F-Score and analysts' cash flow forecast (CFF) (McInnis & Collins, 2011) to proxy accruals management costs, and Altman's Z-Score (1968) and Ohlson's O-Score (1980) to proxy for real-activities management costs. I find a negative association between both CEO and CFO compensation and accruals management as the cost of using accruals increases. However, I find that the negative association between CFO compensation and accruals remains consistent across various measures of compensations. Overall, the results from various regressions of compensations and costs of accruals management suggest that CFOs are more averse than CEOs of using accruals when the cost of accruals management is higher. In contrast, I find little evidence of the moderating effect of the cost on RAM on the association between managerial compensation and the use of RAM. This may be due to an inherently insignificant association between managerial compensation and RAM.

Essay 1 provides insight into the importance of CEO and CFO relative power and its impact on the choice of mechanism used in the earnings management mix. The results suggest no significant relation between CFO relative power and the reduction in the use of accruals management when it is costly. However, the sign on the coefficient suggests a negative relation between CEO compensation and accruals management when the CFO has relatively more power.

Additionally, I find no relation between the use of real-activities in earnings management and CEO power.

This essay provides several contributions to accounting literature. First, my paper extends the growing literature on earnings management (Bartov & Cohen, 2007; Burgstahler & Dichev, 1997; Dechow et al., 1995; Graham et al., 2005; Jones, 1991; Klien, 2002; Roychowdhury, 2006). Second, I contribute to accounting literature by documenting that executive power and incentives are instrumental to a firm's accounting output (Feng et al., 2011; Friedman, 2012). In particular, I argue that the relative power of CEOs and CFOs has a direct impact on accounting outcomes. My results contribute to the debate on how the distribution of power among decision-making agents influences a firm's output (Bebchuk et al., 2008; Morse et al., 2010).

In essay 2 (chapter III), I examine whether the quality of earnings and financial policies of a firm improves or suffers when its CFO serves on another company's board of directors. I specifically examine how the degree of accruals quality, financial misstatements, earnings persistence, capital structure, and cash management are affected when CFOs hold concurrent positions on other companies' boards of directors. By serving on the boards of other firms, CFOs have an opportunity to draw upon other agents (other executives and directors of firms) to seek explicit and tacit knowledge that CFOs can bring back to the source firm.

Consistent with my hypotheses, I find that firms with their CFOs on outside boards are associated with better accruals quality, lower likelihood of restatements, more persistent earnings, and greater financial flexibility, as reflected in faster adjustment toward target debt ratios and lower sensitivity between cash holdings and cash flow shocks. These findings are based on several methods that control for unobserved factors that may affect both incidence of CFO outside directorship and a firm's accounting and financial policies. Overall, the results from

my second essay suggest that outside directorships provide opportunities for CFOs to network and acquire knowledge that can be used to manage their source firms more effectively.

This essay provides several contributions to accounting literature. First, this paper increases our understanding of knowledge creation (or skill acquisition) in inter-firm networks, and how the knowledge acquired by executives by serving on the board of other firms affects accounting and financial policies of an executive's primary employer. Outside directorships are one possible untapped source of accounting and financial knowledge for CFOs, and knowledge acquired from these directorships helps CFOs perform their duties. Second, I provide insight into the knowledge creation of CFOs, whose role in an organization has been increasing in the past few years. Existing literature has provided evidence regarding CEO's outside directorships and how it affects the source firm (see, e.g. Galetkanycz & Boyd, 2012; Kaplan & Reishus, 1990), however other executives including CFOs have been overlooked. The CFO's role in the organization has become increasingly important, so accounting professionals must understand how a CFO can be resourceful in addressing issues concerning his or her primary employment. My second essay provides insight into one potential outlet for CFOs to acquire knowledge and skills that can prove helpful in resolving matters at the source firm.

CHAPTER II: ESSAY I

CEO AND CFO POWER, INCENTIVES AND COSTS, AND THE CHOICE OF EARNINGS MANAGEMENT

2.1 INTRODUCTION

An organization is a collection of different agents with diverse interests and options for growth and misappropriation (Acharya, Myers & Rajan, 2011) and understanding managers behavior is necessary to understand how an organization functions (Jensen & Meckling 1994). In a corporate setting, teams make decisions and often times team members have diverse interests and values (see Aggarwal & Samwich, 2003; Cyert & March 1963) and are likely to have different perspectives regarding the strategic choices a firm should pursue (Eisenhardt, Kahwajy, & Bourgeois, 1997). As a result, conflict of interest may emerge between decision makers concerning corporate policies choices (Simons, Pelled & Smith, 1999). How divergent interests of Chief Executive Officers (CEOs) and Chief Financial Officers (CFOs) and their power influence the earnings management (EM) outcome is thus an empirical question. Specifically, I examine whether CEO and CFO power affects the use (or trade-off) of accounting-based and real-activities EM, assuming that each earnings management mechanism has different personal costs and benefits to CEOs and CFOs.

Agency theory suggests that both the CEO and CFO are self-interested, and therefore behave in a manner that will maximize their own utilities (Jensen 1986, Shleifer & Vishny, 1989, 1997). Jensen and Meckling (1986) propose that one way to overcome the agency problem is to align the interests of executives with those of shareholders through appropriate incentive compensation; however, accounting literature suggests that incentive compensation also leads executives to engage in EM (Bergstresser & Phillipon, 2005; Cheng & Warfield, 2005). Two of

the executives that influence the EM decisions most are the CEO and the CFO.[1] As such, the earnings management outcome reflects their preferences.

Several studies have provided evidence regarding CEOs' incentives and their involvement in EM either in the form of accruals manipulation or by managing real activities or both to achieve earnings targets.[2] Few studies have focused on the role of CFOs in earnings. One such paper is by Feng, Ge, Lou, & Shevlin (2011), who examined why CFOs become involved in material accounting manipulations. They found that CFOs of firms with material accounting manipulations succumb to pressure from CEOs. According to the paper, the CFOs do not seek personal benefits in this situation. In contrast, Jiang et al. (2010) found that CFOs equity incentives are more sensitive than those of CEOs to the magnitude of accruals and the likelihood of beating analyst forecasts. Existing literature, however, is lacking in several regards. First, it provides mixed evidence into the role of CEOs and CFOs in EM. Second, existing studies do not address how CEOs and CFOs use real activities management. Additionally, prior research has not investigated relative power of the CEO and the CFO and how it influences decision-making process. My paper expands the understanding of whether CEOs and CFOs have different preferences regarding the overall earnings management strategy of a firm.

My focus in this paper is to address two central themes in earnings management decisions that reflect the joint opinion of CEOs and CFOs. First, EM is costly to both CEOs and CFOs personally. Most of the existing literature in accounting that links executives' incentives with

[1] CEOs are the ultimate authority in a company, therefore any EM decisions would reflect their opinion. CFOs, on the other hand, oversee and manage the financial reporting system and are likely to possess the most relevant functional knowledge and have the most information regarding the financial reporting process. Existing literature has provided evidence of the involvement of both the CEO (see e.g. Bergstresser & Phillipon, 2006; Feng et al. 2011) and CFO (Jiang et al., 2010).

[2] Extant literature has provided evidence on CEOs involvement in accounting manipulation (see e.g., Bergstresser & Philippon, 2006; Goldman & Slezak, 2006; Ke, 2004; Cheng, Warfield & Ye, 2011), real activity manipulation (e.g. Dechow & Sloan, 1991; Mashruwala, Cohen & Zach, 2010) and both (Cohen, Dey, & Lys, 2010; Cohen & Zarowin 2010; Demers & Wang, 2010)

earnings management focuses on compensation contracts. While the managerial behavior vis-à-vis earnings management decisions is undoubtedly influenced by their explicit compensation contracts (i.e. increased pay resulting from achieving earnings targets), the empirical literature has paid less attention to the implicit personal costs of EM to these executives. Few studies document that executives consider the labor market implications when making earnings management decisions (Graham, Harvey & Rajgopal, 2005; Demers & Wang, 2010). Executives' career progress is, in large part, based on their decision-making performance (Scandura, Graen & Novak, 1986). Hence, managers likely consider the implications of strategic choices on their own career before choosing any corporate policy.

The management of earnings through different means could have different costs to CEOs and CFOs. For example, Feng et al. (2011) suggest that CFOs bear substantially higher costs than CEOs for financial statement manipulation. Specifically, CFOs that are charged by the SEC for misreporting are subject to penalties such as "future employment restrictions, (i.e. being banned from serving as an officer, director, or accountant for any public company, fines, disgorgement, criminal charges" (Feng et al. 2010, page 22). The assumption is that CFOs are more responsible to oversee the financial reporting process and therefore bear a higher cost than CEOs for material accounting manipulation.

Conversely, CEOs are more responsible for broader corporate decisions (Chava & Purnanandam, 2010), and therefore are likely to bear higher costs than CFOs when a business fails. Prior research has documented that CEO turnover is positively related to the probability of bankruptcy (Kaplan & Minton 2011) and operating performance (Bhagat, Bolton & Subramanian 2010). Furthermore, Kang and Mitnik (2012) find substantial career and compensation penalties when a firm enters into financial distress. Demers and Wang (2010) examine the impact of career

concern on the use of real activities for EM. They find that younger CEOs face greater disincentive than their older counterparts to engage in RAM as opposed to AM. The reason for the disincentive is that younger CEOs find the use of RAM to be more damaging to their career prospects than AM – the RAM manifests in value destruction in the later years that has more labor market consequences for younger CEOs than for CEOs who are on the verge of retirement. Put differently, their results suggest than CEOs consider the labor market impact of the EM choices. Overall, the studies cited above suggest that CEOs are more likely to bear higher cost of RAM than AM.

The second theme I focus on is CEO and CFO power. In general, the CEO attains power over the CFO through the firm's hierarchical structure and, consequentially, can force the CFO to engage in EM even when the CFO disagrees with him or her. However, the CEO's ability to influence the CFO in EM decision making is not constant, but rather depends on his power in the organization (Friedman, 2011). In this paper, I depart from the extant literature by considering the possibility that CFOs, in certain conditions, can be more autonomous from CEOs in EM decisions. More specifically, I suggest that the CFO's influence on EM decisions stems primarily from his or her functional knowledge of the financial reporting process. If the earnings management decisions are based on information supplied by the CFO, this would give him a degree of power. In addition, the CEO depends on information provided by the CFO to manage the firm and therefore, relies on the CFO's cooperation for making important decisions such as project selection. If a CFO decides to reduce his or her cooperation in providing relevant decision-making information, it would negatively affect the CEO's ability to make decisions and,

thus, harm the competence of the organization (and therefore the CEO's reputation).[3] However, the power to withdraw contribution depends on the power a CFO has within an organization. This argument is akin to the theory of internal governance which suggests that there are important stakeholders in the firm, particularly subordinate managers, who can influence the CEO's decision-making (Acharya et al., 2011).

In addition, research in managerial economics has shown that managers' personal attributes affect how firms are managed (Bertrand & Schoar, 2003). Specifically, Bamber, Jiang & Wang (2010) and Ge, Matsumoto & Zhang (2011) suggest that the CFO's personal attributes influence financial reporting outcomes. These individual characteristics arise from numerous factors including "managers' dispositions, prior experiences and personal situations" (Ge et al. 2011, p.1141). I argue that a CFO's power is one of the attributes that can influence the choice of EM. This is not to say that CFOs can directly force CEOs to accept their opinions on every firm-specific decision, but rather that the power a CFO gains within an organization through longer tenure, by being on the board, or by acquiring firm-specific knowledge and experience, can be used by him to indirectly influence the CEO to acquiesce with his or her EM decisions.[4]

In general, I predict that both the CEO and CFO prefer EM mechanisms that result in lower personal costs. Existing literature suggests that within-GAAP AM is the least costly mechanism to manage earnings (Baderstcher, 2011; Cohen et al., 2010; Demers & Wang 2010). Therefore, I expect that, irrespective of the relative power of the CEO and CFO in an

[3] This situation is similar to the concept of "embedded autonomy" used in political economy literature. The embeddedness argument is that CEOs cannot effectively involve themselves in decision making without obtaining detailed information from the subordinate managers, especially from CFOs who provide information about financial situation of a firm. The lack of cooperation from the CFO will impact the CEO's ability to make decisions.

[4] Although, the relative power of the CEO and the CFO has different implications then their power within the organization (or over the board), the two are related concept. That is, the power of executives to influence other executives and management teams stems from executives power within the organization. Mobbs (2011) find that when the CFOs are on the company board, they are more able to influence the cash flow policy of the firm.

organization, they are more likely to use this method. However, what remains unanswered is whether the propensity to use AM is affected differently for the CEO versus the CFO when the cost of using it increases (i.e. moving from within-GAAP to egregious AM). Also of empirical interest is how the relative power of CFOs and CEOs influence AM decisions as these costs increase. Similarly, I examine both of these issues with regards to real activities management (RAM).

My prediction is that powerful CEOs are better able to manage earnings using real as well as accrual methods. Given their power, they are more likely to use accruals method (AM) in preference to RAM since RAM is likely to affect subsequent-period return of assets (ROA) negatively (Cohen & Zarowin, 2010) and poor operating performance is related to CEO turnover (Jenter & Lewellen 2012). On the other hand, CFOs, given that the cost of accounting failure is substantial to them, are more likely to prefer RAM as the costs of managing AM increases.

I investigate the role of executive power in earnings management for several reasons. First, while some studies in accounting literature have investigated real activities management and accrual management jointly, these studies have focused on firm effects as opposed to managerial effects. To my knowledge, my paper is the first to study the interaction of agents power and their incentives on the use (or choice) of both real activities and accruals for earnings management. I choose CEOs and CFOs in this paper for a specific reason. CEOs and CFOs are the only two executives for which the SEC requires the disclosures of annual compensation in an annual proxy statement (Gore et al., 2008). In particular, I focus on CEOs in my study because accounting research has provided evidence of CEOs influencing financial statements (Feng et al., 2011; Friedman, 2012) and operating activities (Bushee, 1998). Furthermore, I select CFOs because the CFO typically oversees the firm's financial reporting process, and therefore has the

most impact of all senior managers. In addition, the popular press has widely discussed the increased responsibilities and influence of CFOs in operating decisions.[5] Empirically, it is not clear whether CFOs have any influence in operating decisions, specifically on real activities management. If CFOs are involved in operating decisions, then the question arises as to whether they also influence such decisions to attain personal benefits

Second, accounting literature has highlighted the incentives (Bergstresser & Philippon, 2006; Jiang et al., 2010) of, and to some extent, costs (Feng et al., 2011) to executives in managing earnings. However, the ability of individual managers to influence these outcomes has been given little consideration. The relative power of executives within the organizational structure plays an important role in shaping the final decision (Finkelstein, 1992). The ability of CEOs and CFOs to shape EM decisions is important for complete analysis, because they are considered crucial in the decision-making process. As such, their views have a significant impact on EM decisions.

The third reason I chose to focus on executive power is that the variation in corporate practices is a result of different risk aversion, opinions or preferences of managers (Bertrand & Schoar, 2003). Agency theory acknowledges that managers have discretion inside their respective firms, which they can use to alter corporate decisions and advance their own objectives (Jensen & Meckling, 1986). This view of agency theory also suggests that managers can impose their own preferences if they assume power within an organization. Because both RAM and AM are costly activities, CEOs and CFOs trade off RAM vs. AM based on the relative costs to them. Prior accounting literature has studied the tradeoff costs of RM and accruals-based

[5] David McCann article "Crisis demands new CFO skills" in CFO.com on October 17, 2008, suggests that more companies are looking for CFOs with operating background. In the article, one of the managing partner of an executive search firm states, "There is a real operational focus for the CFOs we're being asked to find now." The demand of operational background stems from the increased involvement of CFOs in firms' operations and strategic decisions.

EM at firm-level (Zang 2012). However, the literature largely ignores the possible costs and benefits of various EM tools to managers. My study is different because I address the costs of these tradeoffs at the managerial level.

Using a panel of U.S. firms, I test whether accruals and real activities management is associated with CEO and CFO equity incentives. I use two measures of managerial compensation: delta – the sensitivity of the managers' wealth to the firm's stock price – and incentive pay ratio, which is calculated as the value of the restricted option grant plus the Black-Scholes value of option awarded over total compensation. I find that both CEO's and CFO's incentive-based compensation has a statistically significant association with accruals management. When using real-activities management as a mechanism to manage earnings, I find no consistent evidence between managerial compensation and EM. However, the sign on the coefficients of both CEO and CFO compensation remains negative when RAM is the dependent variable. In addition, I find that CFO delta is significantly, negatively associated with RAM when both CEO and CFO deltas are included in the model. This suggests that, in general, managers find real-activities management costlier than accruals management, and are therefore less likely to use RAM as a mechanism to manipulate earnings.

I further examine whether the earnings through different means could have different perceived costs to CEOs and CFOs. I find a negative association between both CEO and CFO compensation and accruals management as the cost of using accruals increases. However, I find that the negative association between CFO compensation and accruals remains consistent across various measures of compensations. Overall, the results from various specifications of compensations and costs of accruals management suggest that CFOs are more averse than CEOs of using accruals when the cost of accruals management is higher. Additionally, I find limited

evidence of moderating effect of the cost on RAM on the association between managerial compensation and the use of RAM. This may be due to an inherently insignificant association between managerial compensation and RAM.

Finally, I examine the importance of CEO and CFO relative power and its impact on the choice of mechanism used in the earnings management mix. I find no significant relation between CFO relative power and the reduction in the use of accruals management when it is costly. However, the sign on the coefficient suggests a negative relation between CEO compensation and accruals management when the CFO has relatively more power. Additionally, I find no relation between the use of real-activities in earnings management and CEO power.

My paper provides several contributions to accounting literature. First, my paper extends the growing literature on EM using both accruals (Burgstahler & Dichev, 1997; Dechow et al., 1995; Jones, 1991; Klien, 2002) and real activities (Bartov & Cohen, 2007; Graham et al., 2005; Roychowdhury, 2006). I contribute to accounting literature by documenting that executive power and incentives are instrumental to a firm's accounting output (Feng et al., 2011; Friedman, 2012). In particular, I argue that the relative power of CEOs and CFOs has a direct impact on accounting outcomes. My results contribute to the debate on how the distribution of power among decision-making agents influences a firm's output (Bebchuk et al., 2008, Morse et al., 2010).

Furthermore, my paper provides more insight into the current debate on the pervasiveness of earnings management. According to a survey conducted by Graham et al. (2005), approximately 80% of executives are willing to sacrifice long-term economic value in exchange for smooth earnings. My paper provides further insights into how managerial characteristics (such as power and incentives) influence EM decisions.

The paper proceeds as follows. Section 2 frames the paper with the context of the existing literature. Section 3 provides motivation for the hypothesis. Section 4 discusses the methodology and sample selection. Section 5 provides and discusses the empirical results and robustness checks and section 6 concludes.

2.2 LITERATURE REVIEW

2.2.1 Power, Decision Making and Outcomes

Teams of top managers run modern corporations and each of these managers has diverse values, knowledge base and experience. Cyert and March (1963) suggests that agents in an organization have divergent values and objectives. The divergence in managerial characteristics determines the strategic choices and direction of the firms (see e.g. Eisenhardt, Kahwajy, & Bourgeois, 1997; Hambrick & Mason, 1984). However, the diversity of values and interests among executives can lead to conflict of interests (Jehn, Northcraft & Neale, 1999; Lovelace, Shapiro, & Weingart, 2001).[6] Hambrick and Mason (1984) suggest that strategic organizational outcomes are reflections of the values and interests of the powerful executives.

Several recent studies have examined the role of executive power on corporate practices and outcomes. An important dimension of top management team characteristics is the decision-making power. The theory of managerial power proposes that certain agents attain power in organizations and use it to extract rents (Bebchuk, Fried & Walker, 2002). Child (1972) and Hambrick and Mason (1984) argue that decision-making involves a diversification of opinions of group members and managerial power is reflected strongly in the outcome of decision making as reflected in a firm's strategic behavior. Moreover, Finkelstein and Hambrick (1996) argue that conflicts between different agents within a firm are typically resolved through the use of power. The assumption is that executives in a higher position of power are better able to influence decisions to attain personal benefits even when other executives and board members disagree with the decision.

[6] Specifically, Jehn, Northcraft and Neale (1999) and Lovelace, Shapiro, and Wienart (2001) find that team diversity variables such as value diversity, tenure diversity, informational diversity are associated with the conflict within management team.

In general, power can be defined as the capability of one social actor to overcome resistance in achieving a desired objective or result. For example, Dahl (1957) defined power as a relation among social actors in which one actor, A, can get another actor B, to do something that B would not otherwise have done. When there is a disagreement over objectives or relationship between actions and desired outcomes, conflict between decision-makers are likely to occur. Baldridge (1971) suggests that whenever there is a conflict among decision-makers, the answer to what decision will be made can be found in who has power to apply in a particular decision context. In a related study, Stagner (1969) studies the impact of inter-division power within an organization. Consistent with Baldridge's results, Stagner also finds that powerful divisions within an organization succeed in pursuing their objectives at the expense of overall company's welfare.

A large and growing body of literature analyzes the relationship between executive power and firm performance. However, the extent of powerful executive's influence on firm performance has not been clearly established. On one hand, prior literature documents that CEO power is associated with better future performance. For example, Daily and Johnson (1997) suggest that CEOs' structural and expert power is positively related to firms' performance. On the other hand, recent evidence in corporate governance literature indicates that executive power has a negative effect on firm performance and shareholders' interests (Landier et al., 2008). Bebchuk et al. (2008) focus on CEO centrality and suggest that concentrated CEO power reduces firm performance. Furthermore, Eisenhardt and Bourgeois (1988) note that concentration of power results in political behavior that is associated with poor firm performance.

Several studies document that powerful executives use their position to avoid being ousted even during a time of poor firm performance and are less likely to be dismissed (Boeker 1992). Boeker (1992) suggests that, instead, these powerful executives blame subordinates for poor performance. The subordinates are subsequently replaced, while the powerful executive remains in place. Furthermore, powerful CEOs can often prevent the very discussion of their dismissal; if the proposition of their dismissal does arise, they are unlikely to comply with the dismissal proposal (Allen & Panian, 1982; Tushman & Anderson, 1986). In addition, Morse et al. (2011) argue that powerful CEOs rig incentive pay by inducing boards to shift the weight on performance measures towards the better performing measures.

Lisic et al. (2012) examine the impact of CEO power on the effectiveness of audit committees in monitoring the financial reporting process. The authors find that audit committee financial expertise does not translate into more effective monitoring when a CEO possesses substantial power in the firm. Conversely, the authors find that when CEO power is low, audit committee financial expertise is negatively associated with the incidence of internal control weaknesses. Overall, the results from the above studies elucidate that when CEOs have sufficient power, they can make decisions to maximize their own interests.

To my knowledge, the role of CFO power in EM decisions has not been discussed in accounting literature. In a paper that examined the CEO power over CFO, Friedman (2012) analytically proves that CEO power over CFO leads to lower quality of financial reporting. Specifically, he argues that the decision that CFO makes for financial reporting process depends on the power of CEO when the costs of financial statement manipulation is higher for CFO. Friedman's (2012) findings are consistent those of Feng et al. (2011); both studies suggest that CFOs engage in costly earnings manipulation due to the pressure exerted by the CEOs.

2.2.2 Earnings Management and Managerial Incentives

Sun (2012) suggests a positive relationship between earnings management and executive compensation. Additionally, Bergstresser and Philippon (2006) provide evidence that earnings management is more pronounced in firms where the CEO's potential total compensation is tied closely to the value of stock and option holdings. The authors find that CEOs exercise large numbers of options and sell large quantities of shares during years of high accruals. Goldman and Slezak (2006) show that linking pay to the firm's share price provides CEOs with an incentive to manipulate accounting information. Burns and Kedia (2006) investigate the effect of CEO compensation on financial misreporting. They find that CEO equity incentives are positively associated with the propensity to misreport. In addition, Cheng & Warfield (2005) provide evidence that managers with high equity incentives are more likely to engage in earnings management. Specifically, they find that managers involve in earnings management to increase the stock price in order to sell shares at higher price in future. Furthermore, Cohen et al. (2007) examine the trade-off between AM and RAM in pre-and-post SOX and find a positive association between accruals management and CEO equity incentives in the period leading to SOX.

Jiang et al. (2010) examine the association between CEOs and CFOs' equity incentives and earnings management. They find the magnitude of discretionary accruals and the likelihood of beating benchmarks and earnings restatements are more sensitive to the CFOs' equity incentives than to those of the CEO. Conversely, Feng et al. (2011) find that CEO equity incentives are more sensitive to the likelihood of earnings restatements.

Demers and Wang (2010) find that younger managers are less involved than older counterparts in EM behavior. The reason for this behavior is that older managers gain more

utility than younger managers from earnings management; the latter group receive only a fraction of benefits from EM in the early stages of their career. However, they do not test CEO power in their model. It is possible that older CEOs are also powerful that use more costly RAM to manage earnings.

2.2.3 Choice of Earnings Management Methods

Accounting research has documented that managers engage in EM to meet or beat the earnings forecast using both accruals (Jones 1991) and real activities (Roychowdhury, 2006).[7] Furthermore, Burgstahler and Dichev (1997) provide evidence that firms increase reported earnings to achieve benchmark targets. In a survey, Graham et al. (2005) found that nearly 80 percent of managers are willing to sacrifice long-term value to meet earnings expectations.[8] Executives that were interviewed in the survey emphasized their use of real economic actions rather than accounting actions that aim to meet or beat earnings targets.

Badertscher (2011) examines how the overvaluations of a firm's stock affect management's use of alternative measures of EM. Specifically, he examines whether one type of EM transitions into another type of EM as overvaluation continues. Badertscher finds that firms engage in EM in order to maintain the overvaluation. In particular, managers engage in accruals management in the early stage of overvaluation before using RAM. Finally, Badertscher maintains, managers use the most costly form of EM, non-GAAP EM, once they exhaust both accruals and real activities. Zang (2012) investigates how managers' trade off real and accrual-based EM. She finds that managers make decisions about real earnings management before

[7] See also Defond and Jiambalvo (1994), Burgstahler and Dichev (1997), Kothari (2001), and Petrovits (2006).
[8] Lev (2003) reports that in 2001, Bristol-Myers Squibb improperly inflated its revenue by nearly $ 1 billion by offering large sales discounts to its wholesalers. This kind of procedure is popular in companies that are trying to achieve certain earning targets..

accrual management. Furthermore, Zang suggests that managers change their earnings management strategies in response to increased litigation risk and outside scrutiny. In particular, when accrual-based EM is constrained due to higher scrutiny, firms are more likely to engage in RAM. Additionally, when the cost of using RAM is higher (as a result of being less competitive in the industry, being less financially healthy, etc.), firms use more accrual-based EM. Investigating the cost of real activities and accruals, Leggert et al. (2009) find that real activities are more costly than accruals. Specifically, Leggert et al. (2009) finds that the use of real activities in manipulating earnings has a negative impact on future operating performance. This raises the question of why firms carry out real activities management to meet or beat earning targets. Overall, existing accounting research has provided evidence that firms use both accruals and real activities to manage earnings.

2.3 HYPOTHESES DEVELOPMENT

Accruals management is achieved via changes in accounting methods and estimates, and has no impact on the firm's future cash flow. Real activities management, however, is achieved by altering real operating decisions, such as decreasing research and development (R&D), reducing spending on advertising, and postponing new projects. Cohen and Zarowin suggests (2010, p 2) that "the distinction is important, because while accrual-based earnings management activities have no cash flow consequences, real activities manipulations affect cash flows."

Zang (2012) finds that managers make decisions about RAM before AM and suggests that the managers alter the choice of EM in response to the costs of each mechanism. Accounting research has documented that RAM is negatively related to subsequent-period ROA and cash flows from operation (e.g. see Cohen & Zarowin, 2010; Graham et al., 2005; Leggert et al., 2009). Cohen and Zarowin (2010) examine AM and RAM activities around seasoned equity offerings (SEOs). They find that firms that are engaged in RAM suffer more severe decline in post-SEO performance than those that use AM. Specifically, Cohen and Zarowin show that the effects of RAM on subsequent operating performance are greater than those of AM. Furthermore, Graham et al. (2005) document that executives consider that managing earnings through real activities have more significantly negative consequences to the firm.

Badertscher (2011) examines whether firms engage in EM in order to maintain the overvaluation. The results of his study suggest that managers follow a pecking order in using various available mechanisms of EM. Badertscher highlights that managers find that with-in GAAP AM as the least costly means of managing earnings and therefore use it earlier than using RAM or non-GAAP AM. That is, managers exhaust AM, before they move to RAM, and then finally use non-GAAP AM as a last resort. Based on the discussion above, I argue that

irrespective of CEOs and CFOs preferences towards different mechanisms of EM and the ability to influence EM decisions, both CEOs and CFOs are more likely to use AM when the cost of doing so is lower. Therefore, I predict the following:

H1: *Ceteris Paribus,* both CEOs and CFOs are more likely to engage in earnings management using within-GAAP accruals than real activities.

Financial management is at the core of business operations. Given that CEOs and CFOs have the portfolio of earnings management strategies, how do they come to a consensus on which EM mechanism to use? Mintzberg (1983) suggests that although the CEO is usually the most powerful member of the management team, it is not always the case. Furthermore, Finkelstein (1992) argues that management is a shared effort in which a group of individuals determines the organization's outcome.

Existing accounting literature that addresses the costs of AM and RAM (see e.g. Baderstcher, 2011; Cohen & Zarowin, 2010; Zang, 2012) does not include CEOs and CFOs personal opinions towards those costs (considering EM decisions are jointly influenced by both CEOs and CFOs). That is, extant research has not investigated whether CEOs and CFOs have different marginal disincentives to the increase in the costs of AM and RAM. My conjecture in this paper is that CEOs and CFOs would respond differently to the marginal increase in the costs of AM and RAM. The difference in their reaction is, at least partially, attributable to the different personal costs to them. Specifically, I propose that the reluctance to use the AM (RAM) in response to the increase in the costs would be relatively higher for CFOs (CEOs) than for CEOs (CFOs). Furthermore, I argue that the ability to pursue their interests vis-à-vis EM choices depends on the relative power of the CEO and the CFO.

Prior research suggests that powerful CEOs are more likely to influence CFOs to use accruals to manage earnings (Feng et al., 2011; Friedman, 2012). When CEOs have power over other executives and board members, they are able to choose all available EM mechanisms to maximize their own welfare. The more concentrated power a CEO possesses, the more discretion he or she has in the decision-making process. Therefore, powerful CEOs have more flexibility (or have more options available) in choosing various EM mechanisms. That is, powerful CEOs can equally influence both AM and RAM.

The CFO's role on earnings management using accruals is unclear. Jiang et al. (2010) examine the relationship between CFO equity incentives and AM. The authors argue that because the CFO's fiduciary responsibility is financial reporting, CFO equity incentives should play an important role in EM using accruals. The study's results suggest that CFOs' equity incentives are more sensitive to accruals management than CEOs' equity incentives. Furthermore, Chava and Purnanandam (2010) suggest that CFO incentives play a more important role than CEOs in explaining corporate decisions that involve specialized knowledge of financial decision-making. To provide empirical evidence to support the assertion, they show that CFOs incentives are more positively associated with accruals management than those of CEOs. Nevertheless, Feng et al. (2011) find that CEOs of firms that are engaged in financial statement manipulation have higher equity incentives than those of CFOs. The authors suggest that CFOs are involved in material manipulation because CEOs force them to do so (see also Friedman, 2011).

Overall, there is no clear evidence on the role of CEOs and CFOs in earnings manipulation. To shed light on the issue, I argue that, under certain circumstances, CEOs pressure CFOs to manipulate earnings. For example, the CFO – the executive in charge of

preparing financial statements – is more likely to be involved in EM using accounting numbers only if the cost of accounting manipulation is lower than benefits accrued to CFOs from that. Specifically, I argue that CFOs are more likely to engage in AM when it is within-GAAP. However, when firms are engaged in egregious (or costly AM), it is more likely that CFOs are forced by powerful CEOs. When the CFOs are relatively powerful within the organization, he or she is less likely to acquiesce CEOs' request of egregious AM. That is, when the cost of AM increases, the use of AM decreases with CFOs' incentives and remains constant (or decrease at lower rate) with CEOs incentives. My assertion is that this is, in part, driven by the CFO's power over the EM decision making process. The reason for such behavior is that the costs of non-GAAP EM outweighs the benefits to CFOs who face substantially higher costs than CEOs of material accounting manipulation that includes future career prospects and fines and criminal charges (Feng et al., 2011).[9]

Stagner (1969) finds that agents within an organization achieve power through their given role. Acharya et al. (2011) suggest that although control often follows a hierarchical "top-down" approach, it can also originate from the bottom up. Taken together, the results of Acharya et al. and Stagner indicate that a lower level functional manager can be highly influential in decision-making if it requires a functional knowledge of the manager. This can be especially true in situations where the CEO relies on the specialized skills of other managers. For example, while the CEO is the ultimate decision-maker in an organization, the CFO could be more influential in

[9] CFOs can be judged in the labor market for carrying out their fiduciary responsibilities that include preparing better quality financial statements. This provides additional incentives to CFOs to reduce AM, especially when the costs of AM increases.

a situation where sophisticated financial expertise is required.[10] Overall, the above discussion leads to following sets of hypotheses:

H2a: *Ceteris paribus*, CFOs are less likely than CEOs to manage accruals as cost of accruals management increases.

H2b: *Ceteris paribus*, as the cost of accruals management increases, the propensity of using the accruals in earnings management decreases as the relative power of CFOs increases.

Existing accounting literature suggests that career concerns of managers play an important role in determining the costs and benefits resulting from the RAM. When examining the differential costs of usage between accruals and real activity based EM to younger and older managers, Demers and Wang (2010) find no difference between the two groups for accrual based EM versus statistically significant difference in real-activity management. Their results suggest that younger managers find RAM as the greater of two evils in that it involves longer-term value destruction. That is, younger managers only receive a fraction of the benefits from RAM in the early stage of their career but are punished for negative effects of RAM in the later years. In contrast, the adverse outcome from RAM for older CEOs will manifest after they are retired.

RAM has negative effect on subsequent operating performance of the firm (Cohen & Zarowin, 2010; Graham et al., 2005). More importantly, such outcomes could have important implications for CEOs' incentives to manipulate performance via real activity management. For example, Jenter and Lewellen (2012) find that boards aggressively fire CEOs for poor operating

[10] Acharya et al. (2011) suggest that subordinate managers have power to withdraw their contribution and therefore can force CEOs in accepting their views. Indjejikian and Matejka (2006) show that decision making improves when CFOs assume an active role in the process. The results of these studies suggest that, with the CFO being more knowledgeable about financial reporting process, CFOs can influence CEOs into accepting their views in EM decisions

performance. Echoing the same idea, Kang and Mitnik (2012) also find that CEO turnover increases when a firm goes into financial distress. Furthermore, Kaplan and Minton (2012) study the association between CEO turnover and bankruptcies. They find a positive association between CEO turnover and an increase in the probability of bankruptcy. Taken together, the results of these studies suggest that the likelihood of CEO turnover increases with an increase in the probability of bankruptcy.

The cost of real earnings management to the CFOs is not clear. To my knowledge, existing accounting literature has not studied this topic. Irrespective of the evidence on the CFO specific costs of RAM, I expect that CEOs, who are ultimately responsible for the overall firm performance, would be more sensitive to the costs of RAM. Based on the discussion above, I formulate following hypotheses:

H3a: *Ceteris paribus*, CEOs are less likely than CFOs to use real-activities to manage earnings as the cost of real-activities management increases.

H3b: *Ceteris paribus*, the propensity of using the real activities in earnings management decreases as the relative power of CEOs increases.

2.4 RESEARCH DESIGN AND SAMPLE SELECTION

2.4.1 Measurement of Power

Power is defined as the capacity of individual actors to exert their personal choice (Finkelstein, 1992). Powerful executives can affect a firm's outcome, because they influence its crucial decisions, even in cases of opposition from other executives and board members. Finkelstein and Hambrick (1996) argue that conflicts between different agents within a firm are typically resolved through the use of power. To test my hypotheses, I need to construct an index of CEO and CFO power. To achieve this, I construct a power index of the CEO and CFO. My first proxy to measure CEO and CFO power is whether they serve on the board of directors (Menon & Williams, 2008).

The second measure of power I use is the number of years a manager has served as CEO or CFO of a firm (i.e. tenure in the firm) (Hill & Phan, 1991). The longer a manager has served in that capacity, the more knowledge he or she has over the company's affairs and familiarity with the board and personnel. Additionally, Hill and Phan find evidence that tenure allows a manager to circumvent monitoring mechanisms. Morck, Shleifer, and Vishny (1988) argue that managers can be entrenched simply by virtue of their tenure in the firm. Finally, I use the number of titles a CEO or a CFO holds in the firm. The number of titles is associated with executives' ability to make firm decisions without being influenced by others (Adams et al., 2005; Finkelstein, 1992; Morse, Nanda, & Seru, 2011).

I use the above measures to create a relative power between CEO and CFO, because CFO power is measured in relation to the CEO, who is the most powerful executive in the company. It is measured as the ratio of CFO power to CEO power, as computed above. The higher the ratio, the higher relative power a CFO has over the CEO.

2.4.2 Earnings Management Estimation

2.4.2.1 Estimation of Discretionary Accruals

I use the modified Jones (1991) model to measure earnings management through accruals. Several accounting studies suggest that large abnormal or discretionary accruals provide a proxy for earnings management (e.g. Bergstresser & Phillipon, 2006; Chava & Purnanandam, 2010). Discretionary accruals are the difference between a firm's total accruals and the normal level of accruals. Consistent with Boone et al. (2012), I estimate normal accruals based on Ball and Shivakumar (2006). To estimate normal accruals, I augment Jones (1991) model by controlling for asymmetry in the gain and loss recognition of accruals. This results in following equation, which is estimated for each two-digit SIC code industry within each year, provided there are at least 10 observations.

$$TA_{j,t}/A_{i,t-1} = \beta_0 + \beta_1 (1/ A_{i,t-1}) + \beta_2 (\Delta Sales - \Delta AR/ A_{i,t-1}) + \beta_3 (PPE/ A_{i,t-1}) + \beta_4(CF/ A_{i,t-1}) + \beta_4(DCF) + \beta_4(CF/ A_{i,t-1})*DCF + \varepsilon_{it} \quad (1)$$

where *TA* is total accruals that is calculated as the earnings before extraordinary items and discounted operations minus the operating cash flows reported in the statement of cash flows in year t; *ΔSales* is change in *Sales* from period *t* to *t-1*; *PPE* is gross property, plant, and equipment; *CF* is cash flows from operations; *DCF* is an indicator variable that equals one if CF is negative and zero otherwise. All variables are deflated by lagged total assets. The value of the residuals from equation (1) is used to measure the unexpected discretionary accruals in period *t,* which is a proxy of accrual-based earnings management.

2.4.2.2 Estimation of Real Activities Management

To measure real activities, I use the aggregate of the measures of real activities identified in prior research by Roychowdhury (2006). Specifically, I identify three proxies for RAM: abnormal decrease in the amount of discretionary expenditure; cash flow from operations; and abnormally high inventory production. First, I calculate the decrease in the amount of discretionary expenditure (*AbnDISEXP*) following Roychowdhury (2006) and Badertcher (2011). I estimate the following regression within each industry by year:

$$DISEXP_{i,t}/A_{i,t-1} = \alpha_0(1/A_{i,t-1}) + \alpha_1(Sales_{i,t}/A_{i,t-1}) + \alpha_1(\Delta Sales_{i,t-1}/A_{t-1}) + \varepsilon_{i,t} \quad (2)$$

where $DISEXP_{i,t}$ is the discretionary expenses (sum of R&D, advertising and selling, general and administrative expenditures) in period *t* for firm *i*. *Sales* is the total sales of firm *i* in period *t;* and $\Delta Sales_i$ is change in net sales from period *t-1* to *t*. $A_{i,t-1}$ in the above regression is the assets for firm *i* in period *t-1*. For every firm, *AbnDISEXP* is the actual *DISEXP* minus the *DISEXP* calculated using estimated coefficients from the corresponding industry-year model, where industry is based on two-digit SIC code. Equation (3) is estimated cross-sectionally for each industry-year with at least 10 observations.

The second proxy I used is cash flow from operations (CFLO), which includes accelerating the timing of sales or generating unsustainable sales via increased price discounts or lenient credit terms. Following Roychowdhury (2006) and Badertcher (2011), I estimated the following regression within each industry by year:

$$CFLO_{i,t}/A_{i,t-1} = \alpha_0(1/A_{i,t-1}) + \alpha_1(Sales_{i,t}/A_{i,t-1}) + \alpha_2(\Delta Sales_{i,t-1}/A_{t-1}) + \varepsilon_{i,t} \quad (3)$$

where $CFLO_{i,t}$ is cash-flow from operations. In each firm-year, abnormal cash flow from operations *(AbnCFLO)* is the actual *CFLO* minus the expected *CFLO* calculated using estimated industry-level coefficiants from equation (3).

The third proxy I use for real activities management is abnormally high inventory production (AbnPROD). In order to manage earnings, managers can overproduce inventory. This overproduction results in allocating the fixed overhead over higher number of units, which will result in lower cost of goods sold. In other words, the higher the residual in the following model, the larger the amount of inventory overproduction. I estimate the following model using Roychowdhury's (2006) and Badertcher's (2011) studies for normal level of production costs within each industry by year:

$$PROD_{i,t}/ A_{i,t-1} = \alpha_0(1/A_{i,t-1}) + \alpha_1(Sales_{i,t}/A_{i,t-1}) + \alpha_2(\Delta Sales_{i,t}/A_{i,t-1}) + \alpha_3(\Delta Sales_{i,t-1}/A_{t-1}) + \varepsilon_{i,t} \quad (4)$$

where *PROD* is defined as the production costs in period *t* for firm; *i* and is calculated as $PROD_{i,t} = COGS_{i,t} + \Delta INV_{i,t}$. $COGS_{i,t}$ is cost of goods sold for firm *i* in period *t*; and $\Delta INV_{i,t}$ is change in inventory for firm *i* in period *t*. All other variables are defined as above.

Following Bartov and Cohen (2007) and Badertscher (2011), I construct an overall proxy for the amount of RAM by adding *AbnDISEXP, AbnPROD, and AbnCFLO.* As in Badertscher (2011), I also multiply *AbnCFLO* and *AbnDISEX* by -1 to ensure that higher levels of *AbnCFLO* and *AbnDISEXP* proxy for higher levels of RAM. A larger value of the resulting sum indicates a greater use of real activities for earnings management.

2.4.3 Estimation of Earnings Management Inventives

I use various measures of managerial compensations. My first proxy of CEO and CFO compensation is delta, which is the sensitivity of a manager's wealth to the firm's stock price. It measures the dollar gain or loss in executive wealth given 1% changes in the firm's equity value. To compute delta, I obtain compensation data of CEOs and CFOs from COMPUSTAT's Execucomp database. I follow Core and Guay (1999) methodology to construct portfolio delta of the firm's CEOs and CFOs.

In addition to Core and Guay's (1999) method, I also calculated another incentive-based compensation measure, which is the sum of the value of restricted stock grants (RSTKGRNT) and the Black-Scholes value of option granted (OPTION_AWARDS_BLK_VALUE) divided by total compensation (TDC1).

2.4.4 Cost of Earnings Management

2.4.4.1 Cost of Accruals Management

I use two measures to proxy cost of accruals manipulations: F-Score and analysts' cash flow forecasts. First, I follow Dechow, Ge, Larson, and Sloan (2011), who constructed a measure of the likelihood of accounting misstatements (F-Score). Ge, Matsumoto, and Zhang (2011) suggest that executives tend not to prefer an incidence of fraud or misstatement but that they often differ in how they are involved in behaviors that increase the likelihood of fraud or misstatement. To capture the cost of accounting failure – following Dechow, Ge, Larson, and Sloan (2011) – I use a measure that captures the likelihood of accounting misstatements. Dechow et al. develop a measure by modeling the factors that are associated with actual accounting

misstatements.[11] Ge et al. (2011) suggest that this measure reflects what could be considered as aggressive financial accounting. The F-Score is the scaled probability of misstatement, estimated as the predicted probability of misstatement scaled by the unconditional probability of misstatement from Dechow et al. (2011) table 7, panel A. [12]

My second proxy of accruals manipulation costs, following McInnis and Collins (2011), is a dummy variable that equals one if analysts provide forecasts of operating cash flow. McInnis and Collins (2011) suggest that analysts' cash flow forecasts increase transparency and the expected cost of accruals manipulations in earnings management. Per McInnis and Collins (2011), as the transparency of accruals management increases, the likelihood of restatements and regulatory interventions also increases. This will result in increased costs to the firms and managers when engaging in accruals manipulation.

2.4.4.2 Cost of Real-Activities Management

I use two measures to proxy the cost of real-activities manipulations: modified version of Altman's Z-Score (Altman, 1968) and Ohlson's O-Score (Ohlson, 1980). Both measures proxy for the financial health of a company. I use both measures at the beginning of the year (t-1), which ensures that these measures are estimated on an ex-ante basis. Altman's Z-Score measures financial strength, therefore higher Z-Score means lower probability of bankruptcy.[13] In contrast, O-Score measures financial distress, and therefore higher O-Score suggest the higher probability of bankruptcy. For the ease of interpretation, I multiply Z-Score by -1, hence a higher Z-Score suggests higher real-activity management costs.

[11] Dechow et al. (2011) show that their model has reasonable predictive ability. The measure, which is called F-Score, is a scaled logistic probability for each firm-year of accounting manipulations and uses both accruals and off-balance sheet activities to measure the overall likelihood of accounting misstatements.
[12] See Dechow et al. (2011) for the calculation of F-Score.
[13] Please see appendix for the calculation of these measures.

2.4.5 Sample Selection:

My sample includes all domestic nonfinancial firms from fiscal years 1994 to 2011. I collect all the accounting variables from Compustat. The compensation variables for CEOs and CFOs are collected from the Execucomp database. In addition, the analyst data used in control variables are collected from the I/B/E/S database. The variables to measure CEO and CFO power are obtained from Capital IQ. Combining all the databases for my analysis results in a dataset of 13,803 firm-year observations on 2,241firms for the primary analysis.

2.4.6 Research Design

The focus of my research is on the tradeoff decisions that CEOs and CFOs make between various mechanisms available to manage earnings. Specifically, the first hypothesis tests whether both the CEO's and the CEO's use of within-GAAP AM as the first choice for EM. To test this, I estimate the following regression. For brevity, I suppress firm and time subscripts resulting in the following specification:

$$Earnings\ Management = \beta_0 + \beta_1\ CEO\ Compensation + \beta_2\ CFO\ Compensation + \lambda'\ Other\ Control\ Variables + Firm\ and\ Time\ Dummies + \varepsilon \quad (5)$$

where *Earnings Management* stands for the earnings management metrics including total accruals, discretionary accruals, and real activities management. I calculate standard errors adjusting for heteroskedasticity and clustering by firm, and include firm- and time-fixed effects.

2.4.6.1. The use of Accruals Management

To investigate whether both CEOs and CFOs prefer within-GAAP AM as the first choice of EM. For brevity, I suppress firm and time subscripts, resulting in the following specification:

$$AM = \beta_0 + \beta_1 \, CEO \; Incentives + \beta_2 \, CFO \; Incentives + \beta_3 \, Cost \; of \; Accruals + \beta_4 \, CEO \; Incentives * Cost \; of \; Accruals + \beta_5 \, CEO \; Incentives * Cost \; of \; Accruals + \lambda' \, Other \; Control \; Variables + Firm \; and \; Time \; Dummies + \varepsilon \quad (6)$$

H1 predicts that within-GAAP accruals management would be preferred by both the CEO and the CFO irrespective of their power within the organization. H2 predicts that CFOs are less likely than CEOs to use accrual management when the expected cost of doing so is high. Specifically, I expect that when the cost of AM is low, both CEOs and CFOs are equally likely to use it. However, as the cost of accruals management increases, I expect CFOs to be less likely to use it to increase their compensation. Hence, I expect β_5 to be negatively associated with accruals management.

2.4.6.2 CFO Power and Accruals Management:

To test hypothesis 3b, the regression for equation (6) is performed by dividing the sample into quintile based on CFO power. Specifically, I use the relative power of CEOs and CFOs for this purpose. I do this because it is unclear whether less powerful CFOs can influence EM decisions. However, I expect that as the power of the CFO increases in the organization, he or she would be more likely to influence the overall EM strategy. Therefore, estimating the regressions separately for powerful and less powerful CFOs can provide a more powerful tests. In the model above, my variable of interests are β_4 and β_5. I expect β_4 to be negative for CFOs

in the highest quintile. In other words, when the cost of AM increases, the negative association between CEO compensation and accruals manipulation is due to power of the CFO. Furthermore, I also expect $\beta_3 < 0$ for CFOs who are in higher quintiles of power. Specifically, I compare β_3 between firms that are in the highest and firms that are in the lowest quintiles using Chow-test. The predicted sign on the coefficinet suggests that CFOs are less likely to use AM to increase their compensation when using accruals in EM is costly. Finally, I also expect $\beta_5 < 0$ for firms in the highest quintile of CFO power. The negative coefficient on β_5 indicates that when the CFOs are powerful within the organization, CEOs cannot force CFOs to use accruals to increase their (CEOs) compensation.

2.4.6.3. CEO Power and Real Activity Management:

H3 predicts that the use of RAM by CEOs depends on the costs of using RAM. In other words, when the cost of using real activities is high for CEOs, the use of RAM is not correlated with the incentives and the CEO power affects the decrease in the use of RAM. Prior research has shown that poor firm performance results in CEO turnover (Zenter & Lewellen, 2010). Therefore, I expect that CEOs are likely to avoid using real activities that further impact firm performance. Specifically, I expect that CEOs of poor performing firms will avoid using real activities management that will further deteriorate firm performance. Using prior research, I identify two measures of the costs to CEOs for using real activities to manage earnings. The first measure I use is the modified version of Altman's Z-Score (Altman, 2000) that proxies for a firm's financial health. The second measure I use is Ohlson's O-Score (Ohlson, 1980). These measures are calculated at the beginning of the year (t-1). I also use *Market_Share* to proxy for CEO cost, because prior studies suggest that relative performance of a firm within its industry

peer is associated with CEO turnover (Defond & Park, 1999). Specifically, Defond and Park suggest that boards of directors use relative performance to replace poorly performing CEOs. The assumption behind using these two measures is that CEOs avoid RAM if the firm's financial health is weak, because using RAM could further jeopardize the health of the firm. This notion is consistent with the results of Gilson's (1989) study, which suggests that managers bear substantial costs due to financial distress. Gilson further suggests that managers favor policies that reduce the probability of financial distress. To test hypothesis 3, I use the following specification:

$$RAM = \beta_0 + \beta_1\ CEO\ Incentives + \beta_2\ CFO\ Incentives + \beta_3\ Cost\ of\ Real\ Activities + \beta_4\ CEO\ Incentives^{*}\ Cost\ of\ Real\ Activities + \beta_5\ CEO\ Incentives^{*}\ Cost\ of\ Real\ Activities + \lambda'\ Other\ Control\ Variables + Firm\ and\ Time\ Dummies + \varepsilon \quad (7)$$

I analyze specification (7) by dividing the sample into quintile and comparing the coefficients β_4 between the subsample in the highest and lowest quintile of the CEO power. I expect that β_4 for the subsample in the highest quintile of the CEO power would be lower than β_4 for the subsample in the lowest quintile of the CEO power. Furthermore, I expect that β_3 would be more negatively associated with RAM when the CEO power is high.

2.5 EMPIRICAL RESULTS

2.5.1 Univariate Results

Table 2 A provides summary statistics on the variables used in the analysis. The log of CEO delta is 12.35 and the log of CFO delta is 11.40. The average (median) CEO's wealth increases by $1,185,320 ($232,477) for a 1% increase in stock price and the average (median) CFO's wealth increases by $294,328 ($95,525). The average F-Score for firms in my sample is 1.01 with 3.37 being the highest. Forty-seven percent of firms in my sample have analysts, who also provided cash-flow forecasts. With respect to the cost of real-activity management, the average Z-Scores and O-Scores are 3.24 and -2.18, respectively. As stated earlier, a higher Z-Score reflects a lower probability of bankruptcy, while a higher O-Score reflects a higher probability of bankruptcy. On average, firms in my sample have 10.13 analysts following with 53 being the highest. While 61 percent of my sample firms include a CEO who is also chair of the board, only four percent include a CFO that is a member of the board. The average tenure of a CEO is 6.79 years compared to 6.3 years for a CFO. Additionally, the average number of jobs in a firm held by a CEO is 4.69 compared to 3.11 for a CFO.

Table 2 B presents results of select correlation between my variables of interest. Discretionary accruals are negatively associated with compensation measures of both CEOs and CFOs. Both F-Score and cash flow forecasts are negatively associated with discretionary accruals, suggesting that firms are less likely to manipulate accruals when doing so would be costly. Consistent with existing literature, CEO duality is positively associated with discretionary accruals. Additionally, CFO tenure is positively correlated with discretionary accruals, while CEO tenure is negatively associated with discretionary accruals. However, I use a multivariate regression approach in primary analysis to correct for confounding effects.

[Insert table 2 about here]

2.5.2 Multivariate Results

2.5.2.1 Earnings Management and Managerial Compensation

Table 3 reports the regression results from the primary model with discretionary accruals, total accruals, and real-activities management as dependent variables in the first three, middle three, and last three columns, respectively. Panel A of table 3 presents results where delta is used as a proxy for CEO and CFO compensation, while panel B reports the results where incentive pay ratio proxies for CEO and CFO compensation. Both CEO and CFO delta is significantly, positively related to discretionary accruals in columns 2 and 3 ($p < 0.01$). In column 1, when both CEO and CFO delta are jointly included in the model, the coefficient on both CEO and CFO delta remain statistically significant. Columns 4 to 6 present results from regressions with total accruals as the dependent variable. The results for total accruals are similar to those reported for discretionary accruals. Specifically, CEO and CFO delta remains positive and significant in all three models when CEO and CFO delta are included separately and jointly. Columns 8 and 9 present results for CEO and CFO delta, respectively, with real-activities management as a dependent variable. The significantly negative coefficient on CEO and CFO delta reported in columns 8 and 9 shows that both CEO and CFO delta are negatively associated with real-activities management. When both CEO and CFO delta are included in the model, CEO delta becomes insignificant, while CFO delta remains negatively significant. This suggests that, in general, managers are less likely to use real-activities management to increase their compensation.

Panel B of table 3 reports results where CEO and CFO compensation is proxied by incentive pay ratio. In columns 1 to 3, when the dependent variable is discretionary accruals, CFO incentive pay ratio remains significant, while CEO incentive pay ratio is insignificant. These results are consistent with Jiang et al. (2010) and Chava and Purnanandam (2011), suggesting that CFOs exert more influence over accruals management. Columns 4 to 6 present results where total accruals are the dependent variable. I find no significant association between total accruals and CEO and CFO incentive pay ratio. Additionally, results from columns 7 to 9 suggest no association between CEO and CFO incentive pay ratio and real-activities management. Overall, the results from table 3 suggest a positive and significant association between CFO compensation and accruals management. The results are robust to the different measures of compensation. I also find a limited positive association between CEO compensation and accruals management. Conversely, I find a negative association between real-activities management and CEO and CFO compensation, but these results are subject to specification and measures of compensation.

[Insert table 3 about here]

2.5.2.2 Earnings Management, Compensation and Costs of Earnings Management:

Table 4 reports the results of regressions with accruals (discretionary and total) as the dependent variable, and a variety of independent variables, including cost of accruals manipulation and the interaction between managerial compensation and cost of accruals manipulation. Table 4, panel A presents results with Delta as a proxy for managerial compensation. Columns 1 through 6 use cash flow forecast, and columns 7 through 12 use

Dechow et al.'s (2011) F-Score as the cost of accruals manipulation. Both CEO and CFO compensation continues to remain positively significant in columns 1 through 12. The variable of interest is the interaction between managerial compensation and the cost of accruals management. Columns 2 and 3 show a negative coefficient on the interaction between the cost of accruals management and both CEO and CFO compensation. This suggests that CEOs and CFOs are less inclined to use accruals management when it is costly. In column 1, when both CEO and CFO delta are jointly included in the model, the coefficients on both CEO and CFO delta become insignificant. The coefficients on CEO and CFO delta remain negative but become insignificant in other columns when discretionary accruals is the dependent variable.

Panel B of table 4 reports results where CEO and CFO compensation is proxied by incentive pay ratio. The interaction term on the cost and both CEO and CFO compensation is significantly negative in columns 2 and 3. When CEO and CFO compensations are jointly included in the model, the interaction between cost and CFO compensation remains significantly negative, while the interaction between cost and CEO compensation becomes insignificant. This trend continues when the F-Score is used as the cost of accruals management in columns 7 through 9 with discretionary accruals as the dependent variable. The results from table 4 show a negative coefficient on the interaction term between cost of accruals manipulation and both CEO and CFO compensation. However, table 4 also provides more consistent evidence of CFOs being more averse to the cost of accruals management. Overall, the results from table 4 suggest that managers, in general, are averse to using accruals as a tool for earnings management when the cost of doing so is higher. In particular, CFOs are less likely than CEOs to use accruals management as the cost of using it increases.

[Insert table 4 about here]

Table 5 provides results using my estimate of real activity management as the dependent variable with the interaction between real-activity management costs and managerial compensation as the variable of interest. The results on managerial compensation are consistent with those provided in table 3. Columns 1 through 3 of panel A present results with CEO and CFO compensation, and the interaction between their compensation and the cost of real-activity management with Altman Z-Score as the cost of real-activity management. The interaction term between the cost of RAM and both CEO and CFO compensation is significantly negative. When both CEO and CFO compensation and the interaction term between the cost of RAM and their compensation are jointly included in the model, both interaction terms become insignificant (Column 1). Columns 4 through 6 report results with Ohlson's O-Score as the cost of real-activity management. The coefficients on the interaction between the cost of real-activity management and both CEO and CFO compensations are insignificant in all three columns. Table 5, panel B reports results with incentive pay ratio as a proxy of managerial compensation. The coefficients on the interaction terms between the costs of real-activity management and both CEO and CFO compensations are insignificant in all six columns. The Wald-test suggests that the difference between the coefficients on the interaction between costs of RAM and CEO compensation and the interaction between costs of RAM and CFO compensation are insignificant in all columns of panel A. Overall, the results from table 5 suggest a limited negative association between RAM costs and use of RAM to increase managerial compensation.

[Insert table 5 about here]

2.5.2.3 Accruals Management, CEO and CFO Power, Compensation and Costs of Earnings Management

Table 6 reports the results of regressions with accruals as the dependent variable and a variety of independent variables, including the relative power of CEOs and CFOs. I use delta in panels A, C and E, and incentive pay ratio in panels B, D, and F as measures of CEO and CFO compensation. The three power metrics used in this set of regressions are: (1) whether the CFO serves on the board of directors, (2) the ratio of the number of CEO and CFO jobs, and (3) the relative tenure of CEOs and CFOs. Panels A and B present results with a CFO on the company's board as a proxy of the relative power of the CFO. In panel A, the interaction term between the cost of accruals manipulation and both CEO and CFO compensation is insignificant when the CFO is on the company's board and when he or she is not on the company's board. In panel B, the coefficient on the interaction term between cost of accruals management and CFO compensation is significant and negative when the dependent variable is discretionary accruals. The negative and significant coefficient on the interaction term is consistent for both measures of accruals costs. Additionally, the interaction between accruals costs and CEO compensation remains insignificant.

Panel B and C present results where power is measured as the ratio of the number of titles (jobs) hold by CFOs and CEOs within the organization. A higher ratio indicates more relative power of a CFO within the organization. I divide my sample into quintiles and use the subsample with the lowest and highest quintiles to test whether the relative power of a CFO influence the use of accruals. Column 1 in panel B reports results for the subsample of firms where CFO relative power is in the lowest quintile. The coefficient of the interaction between accruals cost

and CEO compensation is positive, while the interaction term between accrual costs and CFO compensation is negative. Column 2 presents results for the highest quintile of the CFO power subsample. The coefficients on interaction terms between cost and managerial compensation reverse as the *CEO Comp * Cost* becomes negative and *CFO Comp * Cost* becomes positive. The sign on the coefficients suggests that as the CEO becomes powerful, he or she is more likely to use accruals to increase his or her compensation. This trend continues to hold for discretionary accruals regressions in columns 5 and 6. Additionally, *CFO Comp * Cost* is significantly negative for the lowest quintile subsample. Similar trends continue in panel D where compensation is measured by the incentive pay ratio.

Panels E and F report results where power is measured as the ratio of relative tenure of CFOs to CEOs in the firms. Again, a higher ratio suggests a higher CFO power. Column 1 in panel B reports results for the subsample of firms where CFO relative power is in the lowest quintile. The coefficient of the interaction between accruals cost and CEO compensation is negative, while the interaction term between accrual costs and CFO compensation is positive. Column 2 presents results for the highest quintile of the CFO power subsample. The coefficients on interaction terms between accruals cost and both CEO and CFO compensation are insignificant and negative. The results remain similar in columns 5 and 6 when cash flow forecast proxies for accruals cost. In panel F, all interaction terms between the accruals cost and CEO and CFO compensation remains insignificant. Additionally, the results for total accruals remain similar to those reported with discretionary accruals as the dependent variable. Overall, the results reported in table 6 provide limited and mixed results on whether the relative power of a CFO influences the use of accruals depending on the costs of accruals manipulation.

[Insert table 6 about here]

2.5.2.4 Real-Activity Management, CEO and CFO Power, Compensation and Costs of Earnings Management:

Table 7 reports the results of regressions with real-activity management as the dependent variable and a variety of independent variables, including the relative power of CEOs and CFOs. Panels A and B use delta and incentive pay ratio as measures of managerial compensation respectively, and Altman's Z-Score as the cost of real-activity management. I use Ohlson's O-Score as the cost of real-activity management in panels C and D. In all four panels, the coefficient on the interaction term between real-activity management costs and both CEO and CFO compensation is insignificant, except in column 5 of panel A, in which CFO Comp * Cost is significantly, negatively associated with real-activity management. In addition, comparing the coefficients between the sample with the lowest and the highest power using Chow-test do not reveal any significant differences between the two groups. Overall, the results from all four panels in table 7 provide no evidence that the relative power of CEOs influences the use of real-activity management when doing so is costly.

[Insert table 7 about here]

2.6 CONCLUSION

This paper considers whether CEOs and CFOs have different preference of earnings management mechanisms and whether these preferences depend on the costs of these mechanisms. Furthermore, I examine how CEO and CFO power affects the use (or tradeoff) of accounting-based and real-activities EM, assuming that each earnings management mechanism has different personal costs and benefits to CEOs and CFOs. Existing literature provides evidence regarding the managerial incentives and the use of earnings management to achieve earnings targets. I extend this line of literature by examining the cost of earnings management and the relative use of accruals and real-activity management in the earnings management mix.

Consistent with existing literature, I find a positive association between accruals management and the incentives of CEOs and CFOs. Additionally, I find no consistent evidence between CEO and CFO incentives and the use of real-activity management. I also find evidence that CFOs are more averse to using accruals to manage earnings when it is costly. Specifically, I find consistent negative coefficients on the interaction between CFO incentive and accruals cost in most of my specifications. Additionally, the results provide limited evidence of CEOs' averseness to using accruals when doing so would be costly. Finally, I examine the impact of CEO and CFO relative power on the choice of mechanism used in the earnings management mix. I find no consistent evidence between CFO relative power and the reduction in the use of accruals management when it is costly. Furthermore, I find no relation between the use of real-activities in earnings management and CEO power.

The results of this study provide insight into whether the power dynamics within an organization influence a firm's accounting output. The study also provides evidence that different executives within an organization have different level of risk-averseness to these costs.

Furthermore, the final decision outcome in an organization depends on the interaction among the costs to agents of pursuing the policy decisions, agents' incentive to follow a particular strategy to some extent their relative power within the organization.

Table 1: Variables Definition

Variable	Definition
Delta	Log of CEO's and CFO's portfolio delta, where portfolio delta is calculated as the change in the risk-neutral dollar value of the CEO's and CFO's equity portfolio for a 1% change in the firm's stock price.
Incentive Pay Ratio	CEO's and CFO's incentive pay ratio calculated as (RSTKGRNT + OPTION_AWARDS_BLK_VALUE/TDC1, per Execucomp).
DACC	Discretionary accruals using performance-matched modified Jones model (Following Ball and Shivakumar, 2006))
TACC	Total Accruals scaled by total assets ((IBC - OANCF + XIDOC)/AT)
RAM	Amount of real activities management, which is the sum of AbnDISEXP, AbnCFO, and AbnPROD for year *t*. The larger the amount of RAM, the more likely the firm is engaging in real activities management.
F-Score	Scaled probability of misstatement, estimated as the predicted probability of misstatement scaled by the unconditional probability of misstatement from Dechow et al. [2011] table 7, panel A, model 1. The predicted probability is equal to (*e* predicted value/(1 + *e* predicted value)) where the predicted value =−7.893 + 0.790 × RSST Accruals + 2.518 × Change in receivables + 1.191× Change in inventory + 1.979 × % Soft Assets + 0.171 × Change in Cash Sales − 0.923 × Change in Return on Assets + 1.029 × Actual Issuance. The unconditional probability is 0.0037. All input variables for calculating predicted value are winsorized at the 1% and 99% level and come from the Compustat as-first-reported database.
CFF	Dummy variable that equals 1 if When analysts provide forecasts of both earnings and operating cash flow
Z-Score	The Z-score is calculated following modified version of Altman's (1968) Z-score that proxies for firm's financial condition. Higher Z-Score means lower probability of bankruptcy. Specifically, Z-score = 3.3(Net Income/Assets) + 1.0(Sales/Assets) + 1.4(Retained Earnings/Assets) + 1.2(Working Capital/Assets) + 0.6(Stock Price × Shares Outstanding)/Total Liabilities.
O-Score	The O-Score is calculated following Ohlson (1980) that proxy for firm's financial condition. Higher O-Score means higher probability of bankruptcy. Specifically, O-Score = −1.32 − 0.407log(total assets) + 6.03(total liabilities/total assets) − 1.43(working capital/total assets) + 0.076(current liabilities/current assets) − 1.72(1 if total liabilities > total assets, else 0) −2.37(net income/total assets) − 1.83(funds from operations/total liabilities) + 0.285(1 if net loss for last two years, else 0) − 0.521(net income$_t$ − net income$_{t-1}$/|net income$_t$| + |net income$_{t-1}$|)
AF	Number of analysts following the firm in year *t-1* from I/B/E/S
MBE	Dummy variable that equals 1 if firm *i* meet or beats the consensus annual I/B/E/S analyst earnigns forecasts in year *t-1*
Size	Log of total assets

Table 1: Continued

Variable	Definition
Lev	Leverage ratio, calculated as short-term debt (DLC) plus long-term debt (DLTT) in year *t*, scaled by total assets (AT) in year *t-1*
IC	Inverse of the firm's interest coverage ratio, measured as interest expense (XINT) in year *t*, divided by operating income before depreciation (OIBDP) in year *t-1*
Litigation	Dummy variable that equals 1 if the firm is in a high litigation risk industry including biotechnology, computers, electronics, and retail (Francis et al. 1994)
Big Auditor	Dummy variable that equals 1 if the firm is audited by a Big 4/5/6 auditor
ROE	Return on equity for year *t-1* computed as net income (IBCOM) for year t-1 divided by the year *t-1* average book equity (CEQ)
Bloat	Following Barton and Simko (2002) and McInnis and Collins (2011), bloat is a lagged value of book equity (SEQ) plus debt (DLTT + DLC), minus cash (CHE), scaled by sales (SALE)
SEO	Following McInnis and Collins (2011), dummy variable set to 1 if the firm issued equity (SSTK)
Herf Indx	Sum of the squared share of each company's sales (SALE) to total sales in the same three-digit industry in year *t-1*. Herf Indx ranges from 0 (perfect competition) to 1 (pure monopoly)
Market Share	Percentage of a company's sales (SALE) to total three-digit industry sales in year *t-1*
Relative Function	Ratio of number of titles hold by CFO to number of titles hold by CEO
Relative Tenure	Ratio of CFO tenure to CEO tenure in the firm
CEO Chair	Dummy variable that equals one if the CEO is the chairman of the board
CFO on Board	Dummy variable that equals one if the CFO is on the Company's board
Tenure	CEO's and CFO's tenure with the firm
No. of Jobs	Number of titles hold by CEOs and CFOs

Table 2 A: Summary Statistics

Variable	Obs	Mean	S.D.	Min	Mdn	Max
CEO Delta (000's)	16728	1185.3	2160.0	0.00	232.5	2605315.00
CFO Delta (000's)	16728	294.4	853.6	0.00	95.5	39023.38
Log CEO Delta	16728	12.35	1.53	7.46	12.36	16.29
Log CFO Delta	16728	11.40	1.65	5.44	11.47	14.89
CEO Incentive Pay Ratio	10635	0.44	0.28	0.00	0.46	0.97
CFO Incentive Pay Ratio	10645	0.42	0.25	0.00	0.42	0.93
DACC	15423	-0.23	0.57	-1.81	-0.18	1.58
TACC	16662	-0.06	0.09	-0.51	-0.05	0.14
RAM	15970	-0.09	0.37	-1.24	-0.07	1.13
F-Score	11460	1.01	0.44	0.28	0.94	3.37
CFF	16728	0.47	0.50	0.00	0.00	1.00
Z-Score	15367	3.24	5.30	0.08	1.41	34.42
O-Score	15387	-2.18	2.09	-8.60	-2.02	3.88
AF	13591	10.13	7.36	1.00	8.00	53.00
MBE	13547	0.68	0.47	0.00	1.00	1.00
Size	16725	7.33	1.62	3.99	7.20	11.70
Lev	16654	0.25	0.22	0.00	0.22	1.11
IC	15128	0.09	3.03	-297.15	0.09	45.62
Litigation	16728	0.32	0.47	0.00	0.00	1.00
Big Auditor	16728	0.95	0.21	0.00	1.00	1.00
ROE	16705	0.11	0.35	-1.57	0.13	1.59
Bloat	16641	0.84	1.13	-0.42	0.53	7.37
SEO	16728	0.12	0.33	0.00	0.00	1.00
Herf Indx	16728	0.16	0.15	0.02	0.11	1.19
Market Share	16725	0.08	0.15	-0.27	0.02	1.00
Relative Function	9476	2.85	1.34	1.00	3.00	5.00
Relative Tenure	5228	2.87	1.36	1.00	3.00	5.00
Boardrankindex	6249	1.29	1.04	1.00	1.00	5.00
CEO Chair	16728	0.61	0.49	0.00	1.00	1.00
CFO on Board	16728	0.04	0.20	0.00	0.00	1.00
CEO Tenure	16230	6.79	7.02	0.00	5.00	54.00
CFO Tenure	5938	6.30	6.63	0.00	4.00	43.00
CEO No of Jobs	10621	4.69	1.89	1.00	4.00	18.00
CFO No of Jobs	10131	3.11	1.29	1.00	3.00	13.00

Note: This table provides summary statistics for full sample.

Table 2 B: Selected Correlations

		1	2	3	4	5	6	7	8	9	10	11
CEO Delta	1	1										
CFO Delta	2	**0.6342**	1									
CEO Incentive Pay Ratio	3	**0.2661**	**0.4616**	1								
CFO Incentive Pay Ratio	4	**0.3339**	**0.5334**	**0.5619**	1							
DACC	5	**-0.0197**	**-0.0124**	**-0.0161**	**-0.019**	1						
TACC	6	**0.1452**	**0.1011**	**-0.0337**	-0.0071	**0.3378**	**1**					
RAM	7	**-0.0974**	**-0.0996**	**-0.0792**	**-0.0858**	**0.1487**	**0.1125**	**1**				
F-Score	8	**0.1003**	**0.0402**	**0.0976**	**0.1608**	**-0.0182**	**0.0544**	0.0118	**1**			
CFF	9	**0.2367**	**0.3428**	**0.1607**	**0.1522**	**-0.0074**	-0.0115	**-0.0123**	**-0.0706**	**1**		
Z-Score	10	**-0.1455**	**-0.0681**	**-0.1554**	**-0.2246**	**0.0487**	**-0.0242**	**0.2377**	**-0.2198**	**0.0747**	**1**	
O-Score	11	**-0.254**	**-0.1884**	**-0.1084**	**-0.181**	**0.0747**	**-0.1159**	**0.2076**	**-0.143**	**-0.0779**	**0.5576**	**1**
Relative Function	12	**-0.1167**	**-0.1031**	-0.0072	0.0105	**-0.0091**	**-0.0381**	**-0.055**	**0.0476**	**-0.1029**	**-0.1171**	**-0.0908**
Relative Tenure	13	**-0.1164**	**0.125**	**0.0829**	-0.0223	**0.0218**	-0.0177	**0.031**	**-0.0741**	**0.0572**	**0.0439**	0.0077
Relative Board Rank	14	**0.0297**	0.0036	-0.0005	0.0257	-0.0118	-0.0112	0.011	**-0.0046**	-0.0394	**0.0312**	0.0259
CEO Chair	15	**0.248**	**0.0981**	**-0.0479**	**-0.0083**	**0.0092**	**0.0382**	**0.0381**	**-0.0198**	-0.0063	**0.0719**	**0.0315**
CFO on Board	16	**0.0372**	**0.0444**	**0.0371**	**0.047**	-0.0106	-0.0039	**0.0194**	**-0.0163**	**0.0476**	**0.0284**	0.0065
CEO Tenure	17	**0.2686**	-0.0038	**-0.1243**	-0.0152	**-0.0169**	**0.0451**	**-0.0421**	**0.0274**	**-0.0184**	**-0.083**	**-0.1296**
CFO Tenure	18	**0.0745**	**0.1516**	-0.0299	**-0.0587**	**0.0308**	**0.0368**	-0.0073	-0.0286	**0.0678**	0.0214	**-0.0702**
CEO Function	19	**0.0822**	**0.0913**	0.0208	-0.0012	**0.0125**	**0.0789**	**0.0346**	**-0.049**	**0.0859**	**0.0792**	**0.0439**
CFO Function	20	**-0.045**	**-0.0302**	0.0146	0.0195	**-0.0015**	0.0235	-0.0152	0.0192	**-0.0489**	**-0.0673**	**-0.0752**

		12	13	14	15	16	17	18	19	20
Relative Function	12	**1**								
Relative Tenure	13	**0.1411**	**1**							
Relative Board Rank	14	**0.1555**	**0.0462**	**1**						
CEO Chair	15	**-0.2266**	**-0.1896**	**0.0212**	**1**					
CFO on Board	16	**0.1217**	**0.0548**	**1.0000**	0.0092	**1**				
CEO Tenure	17	0.0141	**-0.424**	0.1106	**0.251**	**0.0744**	**1**			
CFO Tenure	18	**0.1688**	**0.5886**	**0.2447**	0.0167	**0.1593**	**0.164**	**1**		
CEO Function	19	-0.5540	**-0.0088**	**0.0628**	**0.211**	**0.0533**	**0.091**	**0.0966**	**1**	
CFO Function	20	**0.6731**	**0.1596**	**0.283**	**-0.0695**	**0.2234**	**0.1074**	**0.2761**	**0.0864**	**1**

Note: This table provides pairwise correlations between selected variables. Variables that are statistically significant at the 5% level are presented in bold.

Table 3 Panel A: CEO and CFO Delta and Earnings Management

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Discretionary Accruals			Total Accruals			Real-Activities		
CEO Delta	0.041***	0.047***		0.006***	0.007***		-0.002	-0.007**	
	(5.92)	(7.04)		(4.24)	(5.47)		(-0.50)	(-2.11)	
CFO Delta	0.012**		0.028***	0.003**		0.005***	-0.010***		-0.011***
	(2.00)		(4.91)	(2.20)		(4.33)	(-3.33)		(-3.95)
AF	-0.002	-0.002	-0.001	-0.001***	-0.001***	-0.001**			
	(-1.26)	(-1.18)	(-0.85)	(-2.83)	(-2.69)	(-2.51)			
MBE	0.034***	0.035***	0.037***	0.003	0.003	0.003			
	(3.60)	(3.68)	(3.84)	(1.37)	(1.47)	(1.56)			
Size	0.091***	0.092***	0.105***	0.009**	0.009***	0.011***	0.009	0.006	0.008
	(4.52)	(4.59)	(5.22)	(2.48)	(2.60)	(3.08)	(0.73)	(0.52)	(0.68)
Lev	0.000	0.001	-0.008	0.043***	0.044***	0.042***	0.030	0.028	0.030
	(0.00)	(0.02)	(-0.17)	(6.25)	(6.27)	(6.07)	(1.16)	(1.10)	(1.16)
IC	-0.001**	-0.001**	-0.001**	-0.000**	-0.000**	-0.000**	0.000	0.000	0.000
	(-2.05)	(-2.02)	(-2.12)	(-2.37)	(-2.41)	(-2.32)	(0.04)	(0.03)	(0.05)
Litigation	-0.065	-0.063	-0.079	-0.016*	-0.015	-0.017*	0.126**	0.125**	0.127**
	(-1.20)	(-1.17)	(-1.43)	(-1.67)	(-1.64)	(-1.85)	(2.33)	(2.32)	(2.34)
Big Auditor	0.059	0.062	0.061	-0.004	-0.003	-0.004	-0.075*	-0.077*	-0.076*
	(1.26)	(1.30)	(1.30)	(-0.35)	(-0.28)	(-0.37)	(-1.89)	(-1.92)	(-1.90)
ROE	0.213***	0.214***	0.224***	0.082***	0.083***	0.084***	-0.025**	-0.027**	-0.026**
	(8.80)	(8.82)	(9.13)	(11.03)	(11.05)	(11.23)	(-2.42)	(-2.53)	(-2.49)
Bloat	-0.067***	-0.068***	-0.071***	-0.013***	-0.013***	-0.014***	0.036***	0.036***	0.036***
	(-5.32)	(-5.38)	(-5.58)	(-3.25)	(-3.29)	(-3.34)	(3.90)	(3.93)	(3.92)
SEO	0.048***	0.049***	0.054***	0.006*	0.006*	0.007**	0.014	0.013	0.013
	(2.92)	(2.99)	(3.25)	(1.84)	(1.91)	(2.10)	(1.36)	(1.27)	(1.33)
Herf Index							-0.056	-0.058	-0.056
							(-0.99)	(-1.03)	(-0.99)
Market Share							0.059	0.061	0.059
							(1.02)	(1.06)	(1.02)
Distress							0.042***	0.045***	0.043***
							(3.96)	(4.23)	(3.96)
Observations	11590	11590	11590	12151	12151	12151	13803	13803	13803
Firm & Year Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R-Square	0.157	0.157	0.151	0.204	0.203	0.200	0.033	0.032	0.033

Table 3 Panel B: CEO and CFO Incentive Ratio and Earnings Management

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Discretionary Accruals			Total Accruals			Real-Activities		
CEO Delta	0.003	0.025		0.003	0.005		-0.001	-0.002	
	(0.09)	(0.93)		(0.44)	(0.99)		(-0.08)	(-0.15)	
CFO Delta	0.066*		0.066**	0.007		0.008	-0.005		-0.005
	(1.94)		(2.05)	(0.95)		(1.38)	(-0.32)		(-0.30)
AF	-0.001	-0.001	-0.001	0.000	0.000	0.000			
	(-0.51)	(-0.41)	(-0.47)	(0.02)	(0.06)	(0.08)			
MBE	0.025**	0.025**	0.025**	0.000	0.000	-0.000			
	(2.16)	(2.12)	(2.13)	(0.06)	(0.12)	(-0.03)			
Size	0.109***	0.111***	0.108***	0.011**	0.012**	0.011**	0.011	0.011	0.012
	(3.51)	(3.53)	(3.49)	(2.32)	(2.35)	(2.28)	(0.76)	(0.78)	(0.80)
Lev	0.000	0.001	0.006	0.046***	0.046***	0.046***	0.033	0.031	0.032
	(0.01)	(0.02)	(0.09)	(5.34)	(5.37)	(5.36)	(1.11)	(1.02)	(1.07)
IC	-0.001**	-0.001**	-0.001**	-0.000*	-0.000*	-0.000*	0.000	0.000	0.000
	(-2.19)	(-2.11)	(-2.19)	(-1.78)	(-1.73)	(-1.73)	(0.70)	(0.73)	(0.77)
Litigation	-0.065	-0.064	-0.065	-0.025**	-0.025**	-0.025**	0.151***	0.150***	0.150***
	(-1.07)	(-1.05)	(-1.07)	(-2.34)	(-2.35)	(-2.34)	(2.60)	(2.60)	(2.60)
Big Auditor	0.022	0.023	0.022	0.012	0.012	0.012	-0.116**	-0.116**	-0.120**
	(0.27)	(0.28)	(0.27)	(0.52)	(0.52)	(0.53)	(-2.18)	(-2.18)	(-2.25)
ROE	0.259***	0.259***	0.258***	0.086***	0.086***	0.086***	-0.022	-0.022*	-0.023*
	(8.42)	(8.43)	(8.42)	(9.21)	(9.25)	(9.24)	(-1.64)	(-1.67)	(-1.72)
Bloat	-0.079***	-0.079***	-0.080***	-0.016***	-0.016***	-0.016***	0.030***	0.030**	0.031***
	(-4.63)	(-4.63)	(-4.64)	(-3.32)	(-3.36)	(-3.32)	(2.60)	(2.57)	(2.62)
SEO	0.073***	0.072***	0.072***	0.010**	0.011***	0.010***	0.007	0.007	0.007
	(3.71)	(3.65)	(3.69)	(2.56)	(2.65)	(2.60)	(0.57)	(0.59)	(0.56)
Herf Index							-0.007	-0.008	-0.008
							(-0.12)	(-0.14)	(-0.13)
Market Share							0.015	0.015	0.013
							(0.22)	(0.23)	(0.21)
Distress							0.047***	0.048***	0.047***
							(3.64)	(3.68)	(3.64)
Observations	7423	7435	7438	7718	7730	7733	9179	9197	9208
Firm & Year Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R-Square	0.121	0.121	0.121	0.197	0.196	0.197	0.031	0.031	0.032

Note: This table provides results from regressing earnings management variables on CEO and CFO delta in panel A and CEO and CFO incentive pay ratio in panel B; and various control variables. The data covers the period from 1993 to 2011. All models are OLS and include year and firm dummies. Standard errors are robust to heteroskedasticity and clustering by firm. All tests are two-sided and t-statistics are provided in parentheses. Discretionary accruals, total accruals and real-activities management are used as dependent variables in columns 1 through 3; columns 4 through 6; and columns 7 through 9 respectively. The notation ***, **, and * denotes significance at the 1%, 5%, and 10% levels, respectively.

Table 4 Panel A: CEO and CFO Delta, Cost and Accruals Management

	(1) DACC	(2) DACC	(3) DACC	(4) TACC	(5) TACC	(6) TACC	(7) DACC	(8) DACC	(9) DACC	(10) TACC	(11) TACC	(12) TACC
	Cash Flow Forecast						F Score					
CEO Delta	0.046***	0.055***		0.006***	0.007***		0.051***	0.056***		0.009**	0.011***	
	(5.27)	(6.95)		(3.34)	(4.62)		(3.16)	(3.98)		(2.23)	(3.50)	
CFO Delta	0.018**		0.037***	0.002		0.005***	0.009		0.032**	0.003		0.007**
	(2.27)		(5.23)	(1.35)		(3.21)	(0.64)		(2.47)	(0.77)		(2.37)
Cost	0.268**	0.221**	0.217**	-0.006	-0.005	-0.005	0.455***	0.458***	0.343***	0.058*	0.054*	0.039
	(2.29)	(2.06)	(2.29)	(-0.27)	(-0.22)	(-0.24)	(2.93)	(3.08)	(2.73)	(1.85)	(1.77)	(1.51)
CEO Delta * Cost	-0.011	-0.018**		-0.000	0.000		-0.019	-0.018		-0.003	-0.004*	
	(-1.14)	(-2.11)		(-0.04)	(0.21)		(-1.34)	(-1.55)		(-0.92)	(-1.75)	
CFO Delta * Cost	-0.012		-0.019**	0.001		0.000	0.001		-0.010	-0.001		-0.003
	(-1.29)		(-2.34)	(0.31)		(0.24)	(0.04)		(-0.89)	(-0.48)		(-1.43)
AF	-0.002	-0.002	-0.001	-0.001***	-0.001***	-0.001**	-0.002	-0.002	-0.001	-0.001**	-0.001*	-0.001*
	(-1.30)	(-1.19)	(-0.90)	(-2.80)	(-2.66)	(-2.48)	(-0.99)	(-0.96)	(-0.73)	(-1.97)	(-1.93)	(-1.72)
MBE	0.034***	0.035***	0.037***	0.003	0.003	0.003	0.029**	0.029**	0.030***	0.001	0.001	0.002
	(3.62)	(3.71)	(3.85)	(1.37)	(1.47)	(1.56)	(2.43)	(2.48)	(2.58)	(0.54)	(0.58)	(0.69)
Size	0.092***	0.094***	0.106***	0.008**	0.009***	0.011***	0.083***	0.084***	0.096***	0.011**	0.011**	0.013***
	(4.61)	(4.68)	(5.28)	(2.48)	(2.59)	(3.09)	(3.53)	(3.61)	(4.07)	(2.43)	(2.43)	(2.93)
Lev	-0.003	-0.002	-0.010	0.043***	0.044***	0.042***	-0.044	-0.044	-0.050	0.035***	0.035***	0.033***
	(-0.07)	(-0.04)	(-0.21)	(6.20)	(6.22)	(6.06)	(-0.82)	(-0.81)	(-0.92)	(3.95)	(3.96)	(3.82)
IC	-0.001**	-0.001**	-0.001**	-0.000**	-0.000**	-0.000**	-0.001	-0.001	-0.001	-0.000*	-0.000*	-0.000*
	(-2.02)	(-2.00)	(-2.08)	(-2.37)	(-2.41)	(-2.31)	(-1.25)	(-1.25)	(-1.37)	(-1.93)	(-1.95)	(-1.92)
Litigation	-0.065	-0.062	-0.079	-0.016*	-0.015	-0.017*	-0.037	-0.034	-0.046	-0.013	-0.013	-0.014
	(-1.21)	(-1.16)	(-1.44)	(-1.67)	(-1.64)	(-1.85)	(-0.52)	(-0.48)	(-0.63)	(-0.99)	(-0.97)	(-1.08)
Big Auditor	0.057	0.059	0.061	-0.004	-0.003	-0.004	0.057	0.060	0.063	0.002	0.003	0.002
	(1.24)	(1.25)	(1.32)	(-0.35)	(-0.27)	(-0.37)	(1.04)	(1.08)	(1.14)	(0.16)	(0.21)	(0.17)
ROE	0.214***	0.215***	0.224***	0.082***	0.083***	0.084***	0.208***	0.209***	0.215***	0.082***	0.083***	0.084***
	(8.84)	(8.86)	(9.17)	(11.02)	(11.05)	(11.23)	(7.50)	(7.54)	(7.69)	(9.00)	(9.01)	(9.11)
Bloat	-0.067***	-0.067***	-0.071***	-0.013***	-0.013***	-0.014***	-0.074***	-0.074***	-0.077***	-0.012**	-0.012**	-0.013**
	(-5.30)	(-5.38)	(-5.55)	(-3.25)	(-3.28)	(-3.33)	(-4.56)	(-4.60)	(-4.73)	(-2.27)	(-2.28)	(-2.35)
SEO	0.047***	0.048***	0.054***	0.006*	0.006*	0.007**	0.059***	0.061***	0.064***	0.008*	0.008*	0.009**
	(2.89)	(2.95)	(3.23)	(1.84)	(1.92)	(2.10)	(2.83)	(2.88)	(3.00)	(1.85)	(1.90)	(2.03)
Observations	11590	11590	11590	12151	12151	12151	8255	8255	8255	8531	8531	8531
Firm & Year Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R-Square	0.158	0.157	0.151	0.203	0.203	0.200	0.217	0.217	0.213	0.196	0.195	0.192

Table 4 Panel B: CEO and CFO Incentive Ratio, Cost and Accruals Management

	(1) DACC	(2) DACC	(3) DACC	(4) TACC	(5) TACC	(6) TACC	(7) DACC	(8) DACC	(9) DACC	(10) TACC	(11) TACC	(12) TACC
	Cash Flow Forecast						F Score					
CEO Delta	0.009	0.055*		0.002	0.007		0.018	0.122		-0.003	0.000	
	(0.28)	(1.72)		(0.24)	(1.02)		(0.17)	(1.54)		(-0.18)	(0.00)	
CFO Delta	0.119***		0.123***	0.011		0.012*	0.230*		0.234**	0.005		0.003
	(2.89)		(3.19)	(1.22)		(1.69)	(1.80)		(2.42)	(0.25)		(0.18)
Cost	0.100***	0.059**	0.095***	0.008	0.005	0.009	0.313***	0.255***	0.313***	0.007	0.005	0.008
	(3.14)	(2.13)	(3.11)	(1.38)	(1.00)	(1.59)	(5.74)	(5.34)	(5.73)	(0.83)	(0.70)	(0.98)
CEO Delta * Cost	-0.021	-0.094**		0.002	-0.004		0.010	-0.093		0.006	0.002	
	(-0.40)	(-2.13)		(0.19)	(-0.44)		(0.10)	(-1.30)		(0.38)	(0.19)	
CFO Delta * Cost	-0.169***		-0.180***	-0.013		-0.012	-0.218*		-0.209**	-0.006		-0.002
	(-2.69)		(-3.38)	(-1.06)		(-1.15)	(-1.85)		(-2.40)	(-0.36)		(-0.14)
AF	-0.001	-0.001	-0.001	0.000	0.000	0.000	-0.000	0.000	-0.000	-0.000	-0.000	-0.000
	(-0.42)	(-0.42)	(-0.37)	(0.03)	(0.03)	(0.09)	(-0.04)	(0.03)	(-0.03)	(-0.49)	(-0.47)	(-0.43)
MBE	0.026**	0.025**	0.025**	0.000	0.000	-0.000	0.020	0.019	0.019	0.000	0.001	0.000
	(2.22)	(2.16)	(2.18)	(0.06)	(0.11)	(-0.03)	(1.34)	(1.27)	(1.26)	(0.13)	(0.19)	(0.02)
Size	0.110***	0.111***	0.109***	0.011**	0.011**	0.011**	0.091**	0.091**	0.092**	0.017**	0.017**	0.017**
	(3.55)	(3.55)	(3.53)	(2.30)	(2.32)	(2.26)	(2.44)	(2.42)	(2.46)	(2.57)	(2.54)	(2.51)
Lev	-0.003	0.002	0.002	0.046***	0.047***	0.046***	-0.041	-0.045	-0.041	0.039***	0.039***	0.039***
	(-0.05)	(0.03)	(0.03)	(5.32)	(5.38)	(5.33)	(-0.58)	(-0.63)	(-0.58)	(3.53)	(3.53)	(3.49)
IC	-0.001**	-0.001**	-0.001**	-0.000*	-0.000*	-0.000*	-0.001***	-0.001***	-0.001***	-0.000*	-0.000*	-0.000
	(-2.02)	(-1.99)	(-2.03)	(-1.73)	(-1.70)	(-1.68)	(-3.34)	(-3.26)	(-3.21)	(-1.68)	(-1.66)	(-1.61)
Litigation	-0.067	-0.065	-0.067	-0.026**	-0.026**	-0.026**	-0.056	-0.063	-0.056	-0.017	-0.017	-0.017
	(-1.10)	(-1.07)	(-1.11)	(-2.35)	(-2.35)	(-2.36)	(-0.68)	(-0.76)	(-0.68)	(-1.28)	(-1.30)	(-1.28)
Big Auditor	0.020	0.021	0.021	0.012	0.012	0.012	0.067	0.054	0.068	0.028	0.028	0.029
	(0.26)	(0.26)	(0.26)	(0.52)	(0.52)	(0.52)	(0.57)	(0.46)	(0.58)	(0.84)	(0.84)	(0.84)
ROE	0.260***	0.260***	0.260***	0.086***	0.086***	0.086***	0.230***	0.237***	0.230***	0.085***	0.085***	0.085***
	(8.50)	(8.45)	(8.51)	(9.22)	(9.26)	(9.25)	(6.57)	(6.65)	(6.55)	(7.18)	(7.28)	(7.25)
Bloat	-0.077***	-0.078***	-0.078***	-0.016***	-0.016***	-0.016***	-0.091***	-0.088***	-0.091***	-0.016***	-0.016***	-0.016***
	(-4.52)	(-4.57)	(-4.54)	(-3.30)	(-3.34)	(-3.29)	(-4.26)	(-4.12)	(-4.27)	(-2.92)	(-2.94)	(-2.92)
SEO	0.072***	0.072***	0.072***	0.010**	0.011***	0.010***	0.087***	0.086***	0.087***	0.009	0.009*	0.009
	(3.70)	(3.65)	(3.68)	(2.55)	(2.64)	(2.59)	(3.44)	(3.39)	(3.45)	(1.62)	(1.73)	(1.64)
Observations	7423	7435	7438	7718	7730	7733	5242	5251	5250	5389	5398	5397
Firm & Year Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R-Square	0.124	0.122	0.124	0.197	0.196	0.197	0.177	0.174	0.177	0.192	0.192	0.192

Note: This table provides results from regressing accruals management variables on CEO and CFO delta in panel A and CEO and CFO incentive pay ratio in panel B; cost of accruals management (F-Score and cash flow forecasts); and various control variables. Columns 1 through 3 and 4 through 6 provide results with discretionary accruals and total accruals as dependent variables respectively and cost of accruals management is proxied by cash-flow forecasts in both panels A and B, where

cash-flow forecasts is a dummy that equals 1if analysts provide forecasts of operating cash flow. Columns 7 through 9 and 10 through 12 provide results with discretionary accruals and total accruals as dependent variables respectively and cost of accruals management is proxied by F-Score (Dechow et al. 2011) in both panels A and B. The data covers the period from 1993 to 2011. All models are OLS and include year and firm dummies. Standard errors are robust to heteroskedasticity and clustering by firm. All tests are two-sided and t-statistics are provided in parentheses. The notation ***, **, and * denotes significance at the 1%, 5%, and 10% levels, respectively.

Table 5 Panel A: CEO and CFO Delta, Cost and Real Activities Management

	(1) RAM	(2) RAM Z-Score	(3) RAM	(4) RAM	(5) RAM O-Score	(6) RAM
CEO Comp	-0.001	-0.005		-0.000	-0.005	
	(-0.24)	(-1.37)		(-0.09)	(-1.16)	
CFO Comp	-0.008**		-0.008***	-0.008**		-0.008**
	(-2.55)		(-2.92)	(-2.11)		(-2.38)
Cost	0.009	0.003	0.007	-0.010	0.000	-0.005
	(1.42)	(0.59)	(1.21)	(-0.63)	(0.00)	(-0.39)
CEO Comp * Cost	-0.000	-0.001*		0.001	0.001	
	(-0.63)	(-1.68)		(0.59)	(1.00)	
CFO Comp * Cost	-0.001		-0.001**	0.001		0.002
	(-1.49)		(-2.07)	(0.98)		(1.40)
Herf Index	-0.049	-0.052	-0.049	-0.049	-0.051	-0.048
	(-0.88)	(-0.92)	(-0.87)	(-0.88)	(-0.90)	(-0.87)
Market Share	0.056	0.060	0.056	0.055	0.058	0.054
	(0.97)	(1.04)	(0.97)	(0.94)	(1.01)	(0.93)
Size	0.010	0.007	0.009	0.021*	0.018	0.020*
	(0.81)	(0.56)	(0.78)	(1.66)	(1.44)	(1.65)
Lev	0.042*	0.041*	0.042*	0.016	0.015	0.016
	(1.74)	(1.67)	(1.74)	(0.62)	(0.59)	(0.63)
IC	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
	(-0.03)	(-0.03)	(-0.02)	(-0.16)	(-0.16)	(-0.15)
Litigation	0.126**	0.124**	0.126**	0.125**	0.122**	0.125**
	(2.32)	(2.30)	(2.33)	(2.31)	(2.28)	(2.32)
Big Auditor	-0.072*	-0.072*	-0.072*	-0.076*	-0.078*	-0.076*
	(-1.78)	(-1.77)	(-1.80)	(-1.89)	(-1.91)	(-1.90)
ROE	-0.028***	-0.029***	-0.029***	-0.027**	-0.028***	-0.027***
	(-2.71)	(-2.80)	(-2.79)	(-2.56)	(-2.67)	(-2.63)
Bloat	0.034***	0.036***	0.035***	0.037***	0.038***	0.038***
	(3.74)	(3.91)	(3.78)	(4.18)	(4.21)	(4.22)
SEO	0.013	0.011	0.013	0.005	0.004	0.005
	(1.32)	(1.15)	(1.28)	(0.55)	(0.40)	(0.51)
Observations	13779	13779	13779	13815	13815	13815
Firm & Year Effects	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R-Square	0.038	0.035	0.038	0.037	0.035	0.037

Table 5 Panel B: CEO and CFO Incentive Ratio, Cost and Real Activities Management

	(1) RAM	(2) RAM Z-Score	(3) RAM	(4) RAM	(5) RAM O-Score	(6) RAM
CEO Comp	0.002	0.002		-0.008	0.002	
	(0.15)	(0.12)		(-0.36)	(0.09)	
CFO Comp	-0.003		-0.001	0.022		0.018
	(-0.17)		(-0.06)	(0.97)		(0.84)
Cost	-0.008***	-0.007***	-0.008***	0.013***	0.016***	0.012***
	(-3.49)	(-3.26)	(-4.32)	(2.60)	(3.21)	(2.84)
CEO Comp * Cost	0.000	0.001		-0.004	0.000	
	(0.02)	(0.23)		(-0.50)	(0.00)	
CFO Comp * Cost	0.002		0.002	0.010		0.008
	(0.59)		(0.66)	(1.36)		(1.15)
Herf Index	-0.005	-0.005	-0.005	0.003	0.001	0.002
	(-0.08)	(-0.08)	(-0.08)	(0.05)	(0.02)	(0.04)
Market Share	0.012	0.012	0.011	0.011	0.011	0.009
	(0.19)	(0.18)	(0.17)	(0.16)	(0.16)	(0.14)
Size	0.014	0.015	0.015	0.024	0.025	0.024
	(0.96)	(1.01)	(1.00)	(1.58)	(1.63)	(1.62)
Lev	0.041	0.039	0.039	0.021	0.017	0.020
	(1.41)	(1.35)	(1.39)	(0.69)	(0.58)	(0.66)
IC	0.000	0.000	0.000	0.000	0.000	0.000
	(0.59)	(0.63)	(0.69)	(0.48)	(0.47)	(0.52)
Litigation	0.150***	0.150***	0.150***	0.145**	0.145**	0.145**
	(2.61)	(2.61)	(2.61)	(2.53)	(2.53)	(2.54)
Big Auditor	-0.114**	-0.114**	-0.117**	-0.110**	-0.110**	-0.115**
	(-2.14)	(-2.13)	(-2.20)	(-2.07)	(-2.07)	(-2.16)
ROE	-0.026*	-0.026**	-0.026**	-0.026*	-0.026*	-0.027**
	(-1.92)	(-1.97)	(-1.99)	(-1.95)	(-1.96)	(-2.02)
Bloat	0.030**	0.029**	0.030**	0.032***	0.031***	0.032***
	(2.50)	(2.45)	(2.52)	(2.76)	(2.75)	(2.79)
SEO	0.004	0.004	0.004	-0.003	-0.003	-0.003
	(0.36)	(0.38)	(0.35)	(-0.26)	(-0.24)	(-0.25)
Observations	9162	9180	9191	9197	9215	9226
Firm & Year Effects	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R-Square	0.037	0.037	0.038	0.035	0.035	0.035

Note: This table provides results from regressing real-activity management on CEO and CFO delta in panel A and CEO and CFO incentive pay ratio in panel B; cost of real activity management (Z-Score and O-Score); and various control variables. Columns 1 through 3 and 4 through 6 provide results with and cost of real-activity management is proxied by Z-Score and O-Score, respectively in both panels A and B. The data covers the period from 1993 to 2011. All models are OLS and include year and firm dummies. Standard errors are robust to heteroskedasticity and clustering by firm. All tests are two-sided and t-statistics are provided in parentheses. The notation ***, **, and * denotes significance at the 1%, 5%, and 10% levels, respectively.

Table 6 Panel A: CEO and CFO Delta, CFO Board Membership and Accruals Management

	(1) DACC CFO on board	(2) DACC No CFO on board	(3) TACC CFO on board	(4) TACC No CFO on board	(5) DACC CFO on board	(6) DACC No CFO on board	(7) TACC CFO on board	(8) TACC No CFO on board
	F-Score				Cash Flow Forecast			
CEO Comp	-0.035	0.055***	-0.007	0.010**	-0.008	0.048***	0.006	0.006***
	(-0.34)	(3.31)	(-0.46)	(2.38)	(-0.15)	(5.30)	(0.51)	(3.22)
CFO Comp	0.167	0.005	0.042***	0.001	0.085	0.017**	0.011	0.002
	(1.53)	(0.31)	(2.78)	(0.30)	(1.40)	(2.06)	(0.81)	(1.15)
Cost	1.664*	0.423***	0.175	0.051*	-0.158	0.282**	-0.113	-0.004
	(1.92)	(2.67)	(0.99)	(1.66)	(-0.26)	(2.30)	(-0.84)	(-0.17)
CEO Comp * Cost	-0.037	-0.019	0.018	-0.004	-0.005	-0.012	0.018	-0.001
	(-0.47)	(-1.36)	(1.11)	(-1.15)	(-0.10)	(-1.19)	(1.41)	(-0.32)
CFO Comp * Cost	-0.077	0.004	-0.036***	-0.000	0.019	-0.012	-0.008	0.001
	(-1.07)	(0.31)	(-3.19)	(-0.02)	(0.34)	(-1.30)	(-0.56)	(0.52)
AF	-0.003	-0.002	-0.001	-0.001	0.001	-0.002	-0.001	-0.001**
	(-0.24)	(-0.91)	(-0.63)	(-1.60)	(0.04)	(-1.19)	(-0.52)	(-2.28)
MBE	0.073	0.022*	-0.005	0.001	0.070	0.029***	0.001	0.003
	(1.03)	(1.83)	(-0.45)	(0.53)	(1.23)	(2.98)	(0.06)	(1.37)
Size	0.083	0.078***	-0.002	0.012**	0.167*	0.088***	0.009	0.009**
	(0.91)	(3.26)	(-0.10)	(2.49)	(1.91)	(4.25)	(0.45)	(2.45)
Lev	0.073	-0.058	0.064	0.036***	0.099	-0.014	0.076	0.044***
	(0.24)	(-1.02)	(1.41)	(3.85)	(0.38)	(-0.28)	(1.59)	(5.99)
IC	-0.040	-0.001	0.019	-0.000**	-0.023	-0.001**	-0.001	-0.000**
	(-1.47)	(-1.22)	(1.51)	(-2.03)	(-1.63)	(-1.98)	(-0.17)	(-2.33)
Litigation	-0.082	-0.045	0.035	-0.011	0.080	-0.073	0.042	-0.016
	(-0.82)	(-0.59)	(1.01)	(-0.79)	(0.53)	(-1.29)	(1.05)	(-1.60)
Big Auditor	-0.175	0.058	-0.020	0.003	0.243	0.053	0.004	-0.003
	(-0.93)	(1.03)	(-0.55)	(0.21)	(0.50)	(1.12)	(0.16)	(-0.31)
ROE	0.201**	0.210***	0.101**	0.083***	0.186*	0.216***	0.118**	0.081***
	(2.39)	(7.20)	(1.98)	(8.75)	(1.86)	(8.62)	(2.42)	(10.80)
Bloat	-0.058	-0.072***	0.004	-0.012**	-0.064	-0.066***	-0.021	-0.013***
	(-0.63)	(-4.29)	(0.15)	(-2.29)	(-0.80)	(-5.12)	(-0.85)	(-3.20)
SEO	-0.024	0.069***	-0.016	0.009*	0.036	0.052***	-0.007	0.007**
	(-0.25)	(3.15)	(-0.62)	(1.92)	(0.45)	(3.06)	(-0.39)	(1.96)
Observations	374	7881	392	8139	511	11079	556	11595
Firm & Year Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R-Square	0.255	0.217	0.318	0.196	0.176	0.157	0.292	0.201

Table 6 Panel B: CEO and CFO Incentive Ratio, CFO Board Membership and Accruals Management

	(1) DACC	(2) DACC	(3) TACC	(4) TACC	(5) DACC	(6) DACC	(7) TACC	(8) TACC
	CFO on board	No CFO on board	CFO on board	No CFO on board	CFO on board	No CFO on board	CFO on board	No CFO on board
	F-Score				Cash Flow Forecast			
CEO Comp	0.946	0.007	0.017	-0.003	0.201	-0.003	-0.067	0.002
	(1.05)	(0.06)	(0.09)	(-0.14)	(0.49)	(-0.10)	(-0.71)	(0.28)
CFO Comp	-0.610	0.235*	-0.011	0.003	0.443	0.116***	-0.064	0.012
	(-0.58)	(1.80)	(-0.06)	(0.16)	(0.92)	(2.77)	(-0.60)	(1.29)
Cost	0.411	0.306***	-0.005	0.006	0.279	0.090***	-0.017	0.007
	(1.65)	(5.56)	(-0.06)	(0.74)	(1.40)	(2.78)	(-0.48)	(1.11)
CEO Comp * Cost	-0.853	0.014	-0.054	0.006	-0.405	0.006	0.026	0.005
	(-1.03)	(0.14)	(-0.34)	(0.37)	(-1.13)	(0.11)	(0.36)	(0.46)
CFO Comp * Cost	0.550	-0.214*	0.034	-0.004	-0.249	-0.169***	0.048	-0.014
	(0.59)	(-1.79)	(0.22)	(-0.25)	(-0.54)	(-2.61)	(0.46)	(-1.10)
AF	0.023**	0.000	-0.000	-0.000	0.012	-0.000	0.002	0.000
	(2.37)	(0.12)	(-0.01)	(-0.40)	(0.57)	(-0.22)	(0.46)	(0.11)
MBE	0.076	0.017	0.003	0.001	0.138	0.022*	0.017	0.000
	(0.99)	(1.09)	(0.29)	(0.26)	(1.40)	(1.88)	(1.26)	(0.17)
Size	-0.226	0.099**	-0.013	0.019***	0.279	0.116***	0.045	0.013***
	(-1.22)	(2.56)	(-0.25)	(2.77)	(1.16)	(3.62)	(0.86)	(2.64)
Lev	0.366*	-0.058	0.041	0.040***	-0.270	-0.012	0.015	0.046***
	(1.69)	(-0.81)	(0.68)	(3.46)	(-0.59)	(-0.19)	(0.24)	(5.13)
IC	-0.023	-0.001***	0.042***	-0.000**	-0.025*	-0.001**	0.005	-0.000*
	(-0.63)	(-3.12)	(2.77)	(-2.26)	(-1.76)	(-2.07)	(0.55)	(-1.77)
Litigation	0.109	-0.063	-0.019	-0.013	-0.386	-0.070	-0.021	-0.025**
	(0.36)	(-0.68)	(-0.35)	(-0.93)	(-1.14)	(-1.04)	(-0.32)	(-2.13)
Big Auditor		0.065		0.028	0.609	0.002	-0.002	0.012
		(0.55)		(0.81)	(0.79)	(0.02)	(-0.05)	(0.51)
ROE	0.160*	0.233***	0.061*	0.086***	0.094	0.262***	0.076*	0.087***
	(1.94)	(6.28)	(1.80)	(6.94)	(0.91)	(8.29)	(1.86)	(9.08)
Bloat	-0.050	-0.091***	0.027*	-0.017***	-0.069	-0.078***	0.006	-0.016***
	(-0.34)	(-4.20)	(1.88)	(-3.06)	(-0.43)	(-4.56)	(0.17)	(-3.35)
SEO	-0.075	0.089***	-0.006	0.008	0.190	0.070***	0.064*	0.009**
	(-0.62)	(3.44)	(-0.21)	(1.36)	(1.39)	(3.49)	(1.71)	(2.19)
Observations	196	5046	205	5184	274	7149	291	7427
Firm & Year Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R-Square	0.200	0.176	0.362	0.197	0.164	0.124	0.238	0.199

Table 6 Panel C: CEO and CFO Delta, CFO-CEO number of Jobs and Accruals Management

	(1) DACC Low No. of Function	(2) DACC High No. of Function	(3) TACC Low No. of Function	(4) TACC High No. of Function	(5) DACC Low No. of Function	(6) DACC High No. of Function	(7) TACC Low No. of Function	(8) TACC High No. of Function
	F-Score				Cash Flow Forecast			
CEO Comp	-0.083	-0.015	0.006	-0.007	-0.025	0.028	-0.018*	-0.007
	(-1.12)	(-0.21)	(0.44)	(-0.35)	(-0.58)	(0.60)	(-1.83)	(-0.62)
CFO Comp	0.096	0.029	0.002	0.022	0.152**	0.026	0.022*	0.011
	(1.33)	(0.43)	(0.15)	(1.46)	(2.34)	(0.62)	(1.69)	(1.32)
Cost	-0.447	0.116	0.017	-0.015	1.003**	0.415	-0.083	-0.113
	(-0.61)	(0.23)	(0.20)	(-0.12)	(2.32)	(0.94)	(-0.80)	(-0.91)
CEO Comp * Cost	0.113	-0.012	-0.005	0.005	0.050	-0.038	0.022**	0.007
	(1.47)	(-0.22)	(-0.41)	(0.34)	(1.15)	(-0.91)	(2.12)	(0.58)
CFO Comp * Cost	-0.063	0.016	0.004	-0.005	-0.140**	0.007	-0.018	0.002
	(-1.16)	(0.41)	(0.39)	(-0.36)	(-2.35)	(0.21)	(-1.48)	(0.21)
AF	0.004	-0.012	-0.001	-0.004*	0.004	-0.010	-0.001	-0.004**
	(0.96)	(-1.11)	(-1.19)	(-1.95)	(1.10)	(-1.13)	(-1.09)	(-2.26)
MBE	-0.019	0.032	-0.000	-0.006	0.004	0.032	0.005	0.004
	(-0.42)	(0.64)	(-0.07)	(-0.56)	(0.12)	(0.75)	(0.82)	(0.43)
Size	0.179**	0.242***	0.002	0.019	0.185***	0.245***	0.014	0.008
	(2.03)	(2.89)	(0.14)	(0.96)	(2.86)	(3.08)	(0.87)	(0.58)
Lev	-0.319*	-0.109	0.025	0.068	-0.267*	-0.108	0.026	0.085**
	(-1.77)	(-0.45)	(1.03)	(1.41)	(-1.78)	(-0.57)	(1.13)	(2.05)
IC	-0.013	-0.012	-0.028***	0.006**	-0.001**	-0.014	-0.001***	0.002
	(-0.47)	(-1.35)	(-3.00)	(2.22)	(-2.34)	(-1.59)	(-3.18)	(0.84)
Litigation	-0.240	0.054	-0.000	-0.016	-0.191	0.098	0.004	-0.011
	(-0.74)	(0.19)	(-0.00)	(-0.29)	(-1.25)	(0.48)	(0.16)	(-0.34)
Big Auditor	0.146	0.155	0.015	0.097**	0.161	-0.134	0.019	0.066
	(0.41)	(0.70)	(0.42)	(2.42)	(0.48)	(-0.59)	(0.57)	(1.39)
ROE	0.149**	0.238***	0.053***	0.082**	0.186***	0.297***	0.066***	0.106***
	(2.27)	(2.60)	(3.42)	(2.21)	(3.27)	(3.09)	(4.74)	(2.89)
Bloat	-0.051	-0.218***	0.001	-0.051***	-0.044	-0.161***	-0.002	-0.043***
	(-0.93)	(-3.15)	(0.11)	(-3.24)	(-0.92)	(-2.77)	(-0.14)	(-2.97)
SEO	0.181**	-0.008	0.016	0.013	0.100*	-0.008	0.006	0.019
	(2.03)	(-0.11)	(0.87)	(0.79)	(1.86)	(-0.13)	(0.47)	(1.25)
Observations	925	617	956	646	1400	855	1481	909
Firm & Year Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R-Square	0.264	0.224	0.161	0.315	0.213	0.201	0.169	0.293

Table 6 Panel D: CEO and CFO Incentive Ratio, CFO-CEO number of Jobs and Accruals Management

	(1) DACC Low No. of Function	(2) DACC High No. of Function	(3) TACC Low No. of Function	(4) TACC High No. of Function	(5) DACC Low No. of Function	(6) DACC High No. of Function	(7) TACC Low No. of Function	(8) TACC High No. of Function
	F-Score				Cash Flow Forecast			
CEO Comp	-1.123*	0.500	0.091	-0.038	0.094	-0.048	-0.005	0.007
	(-1.77)	(1.42)	(0.61)	(-0.43)	(0.42)	(-0.32)	(-0.09)	(0.20)
CFO Comp	0.887	-0.727	-0.177	0.040	0.109	0.117	-0.017	0.015
	(1.58)	(-1.42)	(-0.93)	(0.32)	(0.39)	(0.59)	(-0.25)	(0.30)
Cost	-0.055	-0.108	-0.035	-0.034	0.152	0.121	-0.021	-0.003
	(-0.15)	(-0.70)	(-0.59)	(-0.75)	(1.20)	(0.84)	(-0.86)	(-0.09)
CEO Comp * Cost	1.155*	-0.232	-0.072	0.010	-0.305	0.000	0.007	-0.027
	(1.81)	(-0.77)	(-0.52)	(0.13)	(-1.15)	(0.00)	(0.14)	(-0.71)
CFO Comp * Cost	-0.835	0.395	0.172	0.027	-0.028	-0.111	0.024	0.035
	(-1.50)	(0.92)	(1.16)	(0.26)	(-0.10)	(-0.29)	(0.36)	(0.59)
AF	0.002	0.003	0.000	-0.004	0.004	0.006	0.001	-0.005**
	(0.21)	(0.23)	(0.23)	(-1.51)	(0.68)	(0.42)	(0.70)	(-2.03)
MBE	-0.064	0.034	-0.003	-0.001	-0.032	-0.023	-0.001	0.011
	(-0.97)	(0.41)	(-0.27)	(-0.06)	(-0.68)	(-0.34)	(-0.07)	(0.93)
Size	0.363*	-0.075	-0.029	0.067*	0.215	0.086	-0.004	0.022
	(1.96)	(-0.52)	(-0.81)	(1.79)	(1.39)	(0.52)	(-0.18)	(0.64)
Lev	-0.261	0.232	0.053	0.059	0.014	0.256	0.045	0.095*
	(-0.94)	(1.02)	(1.58)	(0.98)	(0.05)	(1.19)	(1.61)	(1.74)
IC	-0.003	-0.069*	-0.009	0.010	-0.153	-0.038	-0.010	-0.005
	(-0.02)	(-1.81)	(-0.34)	(0.51)	(-0.96)	(-1.65)	(-0.41)	(-0.88)
Litigation	0.237	-0.058	-0.145*	-0.029	0.082	0.015	0.004	-0.006
	(0.96)	(-0.19)	(-1.68)	(-0.65)	(0.60)	(0.07)	(0.10)	(-0.17)
Big Auditor		0.386***		0.098***		0.166		0.108***
		(3.43)		(2.63)		(1.20)		(3.23)
ROE	0.211*	0.298***	0.036**	0.141	0.307**	0.373***	0.050***	0.142**
	(1.94)	(3.77)	(2.17)	(1.51)	(2.40)	(3.33)	(3.41)	(2.22)
Bloat	-0.244**	-0.109	0.005	-0.037	-0.211	-0.175*	-0.000	-0.037**
	(-2.01)	(-1.17)	(0.23)	(-1.57)	(-1.59)	(-1.74)	(-0.02)	(-2.09)
SEO	0.154	-0.035	-0.003	0.009	0.095	-0.036	-0.002	0.018
	(1.53)	(-0.41)	(-0.18)	(0.35)	(1.39)	(-0.37)	(-0.13)	(0.61)
Observations	436	292	440	306	648	436	668	455
Firm & Year Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R-Square	0.336	0.252	0.169	0.402	0.240	0.178	0.098	0.363

Table 6 Panel E: CEO and CFO Delta, CFO-CEO Relative Tenure and Accruals Management

	(1) DACC Low Tenure	(2) DACC High Tenure	(3) TACC Low Tenure	(4) TACC High Tenure	(5) DACC Low Tenure	(6) DACC High Tenure	(7) TACC Low Tenure	(8) TACC High Tenure
	F-Score				Cash Flow Forecast			
CEO Comp	0.064	0.033	0.007	-0.035	0.046	0.019	-0.010	0.005
	(0.64)	(0.24)	(0.42)	(-1.28)	(0.64)	(0.20)	(-0.59)	(0.46)
CFO Comp	-0.045	0.114	-0.004	0.062***	0.025	0.043	0.003	0.000
	(-0.65)	(1.20)	(-0.30)	(3.54)	(0.49)	(0.45)	(0.27)	(0.02)
Cost	-0.621	1.632	0.035	0.115	-0.348	0.462	-0.176	-0.214
	(-0.84)	(1.42)	(0.32)	(0.39)	(-0.53)	(0.74)	(-1.39)	(-1.11)
CEO Comp * Cost	-0.020	-0.038	-0.010	0.035	-0.009	0.026	0.013	-0.004
	(-0.45)	(-0.35)	(-0.99)	(1.40)	(-0.17)	(0.28)	(1.12)	(-0.27)
CFO Comp * Cost	0.081*	-0.083	0.008	-0.046***	0.033	-0.064	0.000	0.022
	(1.87)	(-1.29)	(1.07)	(-3.32)	(0.62)	(-0.57)	(0.01)	(1.41)
AF	-0.008	-0.005	-0.002	-0.001	0.000	0.005	-0.001	0.000
	(-0.67)	(-0.45)	(-1.29)	(-0.58)	(0.02)	(0.61)	(-0.60)	(0.05)
MBE	0.021	0.034	-0.003	-0.004	0.038	0.042	-0.003	-0.005
	(0.26)	(0.44)	(-0.20)	(-0.27)	(0.55)	(0.79)	(-0.25)	(-0.39)
Size	0.107	0.174	0.026	-0.009	0.015	0.171	0.014	-0.012
	(0.69)	(1.45)	(0.77)	(-0.36)	(0.11)	(1.56)	(0.58)	(-0.56)
Lev	0.050	-0.082	0.067	0.157**	-0.104	-0.038	0.146**	0.121**
	(0.13)	(-0.33)	(1.25)	(2.18)	(-0.33)	(-0.23)	(2.10)	(2.49)
IC	-0.015	0.071	-0.005	-0.004	-0.006	0.020	-0.006	-0.005
	(-0.38)	(1.27)	(-0.88)	(-0.30)	(-0.30)	(0.52)	(-1.18)	(-0.81)
Litigation	0.176	-0.079	0.074*	0.013	0.136	0.029	0.018	0.059*
	(0.56)	(-0.53)	(1.89)	(0.33)	(0.40)	(0.14)	(0.31)	(1.81)
Big Auditor	-0.303	0.194	0.063	-0.065	-0.205	0.083	0.059	-0.035
	(-0.85)	(1.13)	(0.89)	(-1.01)	(-0.71)	(0.53)	(0.90)	(-0.73)
ROE	0.329***	0.247***	0.144***	0.100**	0.326***	0.190**	0.151***	0.095**
	(2.85)	(2.84)	(3.37)	(2.38)	(2.68)	(2.21)	(3.31)	(2.26)
Bloat	-0.033	-0.061	-0.027	-0.001	-0.039	-0.069	-0.034*	-0.012
	(-0.24)	(-0.62)	(-1.31)	(-0.07)	(-0.34)	(-1.01)	(-1.90)	(-0.68)
SEO	0.046	-0.045	0.027	-0.004	0.098	0.024	0.014	-0.012
	(0.36)	(-0.48)	(1.21)	(-0.16)	(0.83)	(0.36)	(0.57)	(-0.68)
Observations	548	430	569	445	700	612	742	644
Firm & Year Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R-Square	0.268	0.267	0.440	0.416	0.263	0.214	0.416	0.277

Table 6 Panel F: CEO and CFO Delta, CFO-CEO Relative Tenure and Accruals Management

	(1) DACC Low Tenure	(2) DACC High Tenure	(3) TACC Low Tenure	(4) TACC High Tenure	(5) DACC Low Tenure	(6) DACC High Tenure	(7) TACC Low Tenure	(8) TACC High Tenure
	F-Score				Cash Flow Forecast			
CEO Delta	0.264	0.891	0.050	-0.083	0.114	0.065	-0.019	-0.058
	(0.63)	(0.74)	(0.57)	(-0.24)	(0.60)	(0.23)	(-0.42)	(-1.16)
CFO Delta	-0.577	-0.663	-0.077	0.299	-0.133	-0.264	-0.047	-0.029
	(-1.07)	(-0.37)	(-0.84)	(0.84)	(-0.53)	(-0.74)	(-0.95)	(-0.71)
Cost	-0.241	0.624	-0.001	0.112	-0.302	0.000	-0.049	-0.020
	(-1.25)	(1.25)	(-0.02)	(0.97)	(-1.23)	(0.00)	(-0.93)	(-0.50)
CEO Delta * Cost	-0.092	-0.996	-0.061	0.031	0.129	-0.163	-0.017	0.070
	(-0.29)	(-0.88)	(-0.83)	(0.10)	(0.49)	(-0.46)	(-0.30)	(1.23)
CFO Delta * Cost	0.527	0.525	0.059	-0.304	0.179	0.307	0.066	-0.006
	(1.53)	(0.34)	(0.86)	(-0.90)	(0.49)	(0.69)	(0.80)	(-0.10)
AF	-0.007	0.013	-0.003	-0.004	-0.004	0.022*	-0.002	-0.001
	(-0.49)	(0.79)	(-0.98)	(-1.64)	(-0.24)	(1.68)	(-0.61)	(-0.38)
MBE	-0.017	0.045	-0.006	-0.029	0.002	0.054	-0.007	-0.024*
	(-0.17)	(0.50)	(-0.38)	(-1.49)	(0.02)	(0.77)	(-0.50)	(-1.78)
Size	0.135	0.177	0.034	-0.022	0.098	-0.023	0.030	-0.037
	(0.86)	(0.83)	(0.98)	(-0.57)	(0.62)	(-0.10)	(0.89)	(-1.24)
Lev	-0.030	-0.120	0.137	0.094	-0.231	0.055	0.204*	0.110**
	(-0.07)	(-0.50)	(1.55)	(1.41)	(-0.56)	(0.17)	(1.78)	(2.31)
IC	-0.015	-0.013	-0.017	-0.016	-0.019	-0.012	-0.016	-0.037***
	(-0.10)	(-0.14)	(-1.28)	(-0.81)	(-0.19)	(-0.40)	(-1.04)	(-3.15)
Litigation	0.210	0.009	0.064	0.012	0.310	-0.099	0.054	0.005
	(0.70)	(0.05)	(1.20)	(0.34)	(0.85)	(-0.69)	(0.86)	(0.23)
Big Auditor	-0.356	0.166	0.075	0.035	-0.265	-0.056	0.094	0.010
	(-0.89)	(0.80)	(1.10)	(0.87)	(-0.80)	(-0.31)	(1.30)	(0.22)
ROE	0.330**	0.219**	0.135***	0.072***	0.365**	0.301***	0.149***	0.065***
	(2.26)	(2.53)	(3.20)	(2.64)	(2.16)	(3.36)	(3.14)	(2.78)
Bloat	-0.012	-0.245*	-0.025	0.016	-0.011	-0.152	-0.030*	0.004
	(-0.09)	(-1.83)	(-1.25)	(0.82)	(-0.10)	(-1.49)	(-1.67)	(0.18)
SEO	0.122	0.050	-0.003	-0.024	0.174	0.109	0.012	-0.023
	(0.76)	(0.51)	(-0.14)	(-0.77)	(1.30)	(1.32)	(0.52)	(-0.97)
Observations	392	266	407	272	497	366	525	377
Firm & Year Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R-Square	0.255	0.329	0.485	0.385	0.269	0.216	0.465	0.374

Note: This table provides results from regressing accruals management variables on CEO and CFO delta in panels A, C and E, and CEO and CFO incentive pay ratio in panels B, D and F respectively; cost of accruals management (F-Score and cash flow forecasts); and various control variables. Columns 1 through 4 use F-Score and 5 through 8 use analysts cash-flow forecasts as cost of accruals management in all panels. Columns 1, 2, 5, and 6 use discretionary accruals and columns 3, 4, 7 and 8 use total accruals as dependent variables. The data covers the period from 1993 to 2011. All models are OLS and include year and firm dummies. Standard errors are robust to heteroskedasticity and clustering by firm. All tests are two-sided and t-statistic s are provided in parentheses. The notation ***, **, and * denotes significance at the 1%, 5%, and 10% levels, respectively.

Table 7 Panel A: CEO and CFO Delta, Power, Z-Score and Real Activities Management

	(1) CEO Chairman of Board	(2) No CEO Chairman of Board	(3) Low Tenure	(4) High Tenure	(5) Low No. of Function	(6) High No. of Function
CEO Comp	-0.001	-0.001	-0.018	0.015	-0.003	0.024
	(-0.20)	(-0.20)	(-0.84)	(0.84)	(-0.42)	(0.94)
CFO Comp	-0.004	-0.004	-0.012	-0.009	-0.014**	-0.015
	(-0.69)	(-0.69)	(-0.78)	(-0.50)	(-2.54)	(-0.31)
Cost	0.005	0.005	-0.010	0.033	0.014	-0.006
	(0.51)	(0.51)	(-0.28)	(0.50)	(1.47)	(-0.16)
CEO Comp * Cost	-0.000	-0.000	0.002	0.001	0.001	-0.003
	(-0.66)	(-0.66)	(1.08)	(0.16)	(0.91)	(-0.76)
CFO Comp * Cost	-0.000	-0.000	-0.002	-0.004	-0.002**	0.004
	(-0.31)	(-0.31)	(-1.09)	(-0.57)	(-2.26)	(0.85)
Herf Index	-0.143	-0.143	-0.695*	-0.128	-0.140	0.301
	(-1.30)	(-1.30)	(-1.73)	(-0.24)	(-1.21)	(0.71)
Market Share	0.039	0.039	-0.112	0.363	0.141	0.441
	(0.35)	(0.35)	(-0.18)	(0.60)	(1.20)	(0.45)
Size	0.009	0.009	0.098*	-0.079	0.007	0.108
	(0.43)	(0.43)	(1.68)	(-1.08)	(0.34)	(1.01)
Lev	0.061	0.061	0.018	0.023	-0.025	0.276
	(1.64)	(1.64)	(0.11)	(0.16)	(-0.66)	(1.08)
IC	0.000	0.000	0.000	0.003	-0.005	0.055
	(0.90)	(0.90)	(0.01)	(0.16)	(-1.61)	(0.84)
Litigation	0.057	0.057	0.122	-0.044	-0.046	0.666**
	(0.52)	(0.52)	(0.33)	(-0.68)	(-0.67)	(2.32)
Big Auditor	-0.080	-0.080	-0.128	0.152	-0.080	0.233
	(-1.42)	(-1.42)	(-0.92)	(0.77)	(-1.22)	(0.87)
ROE	-0.040**	-0.040**	-0.021	0.045	-0.002	-0.028
	(-2.03)	(-2.03)	(-0.37)	(0.95)	(-0.11)	(-0.27)
Bloat	0.052***	0.052***	0.071	0.055***	0.053***	-0.055
	(3.66)	(3.66)	(1.65)	(2.84)	(4.48)	(-0.44)
SEO	-0.003	-0.003	0.041	-0.001	-0.006	-0.130
	(-0.19)	(-0.19)	(0.78)	(-0.04)	(-0.34)	(-1.56)
Observations	5404	5404	930	718	4610	361
Firm & Year Effects	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R-Square	0.054	0.054	0.190	0.070	0.051	0.087

Table 7 Panel B: CEO and CFO Incentive Ratio, Power, Z-Score and Real Activities Management

	(1)	(2)	(3)	(4)	(5)	(6)
	CEO Chairman of Board	CEO Chairman of Board	Low Tenure	High Tenure	Low No. of Function	High No. of Function
CEO Comp	-0.002	-0.002	-0.138	0.085	-0.022	-0.156
	(-0.05)	(-0.05)	(-1.64)	(0.90)	(-0.57)	(-0.83)
CFO Comp	0.019	0.019	-0.069	-0.111	0.006	0.136
	(0.51)	(0.51)	(-0.80)	(-0.99)	(0.12)	(0.93)
Cost	-0.006	-0.006	-0.017*	-0.005	-0.005	-0.019
	(-1.64)	(-1.64)	(-1.85)	(-0.43)	(-0.79)	(-0.77)
CEO Comp * Cost	0.001	0.001	0.002	-0.004	0.004	0.034
	(0.20)	(0.20)	(0.25)	(-0.31)	(0.68)	(1.08)
CFO Comp * Cost	0.002	0.002	0.010	0.014	-0.003	-0.025
	(0.34)	(0.34)	(1.15)	(1.32)	(-0.55)	(-0.76)
Herf Index	-0.119	-0.119	-0.931**	0.061	-0.093	1.761
	(-0.76)	(-0.76)	(-2.57)	(0.08)	(-0.45)	(1.27)
Market Share	-0.070	-0.070	0.669	0.194	0.033	-1.152
	(-0.41)	(-0.41)	(1.22)	(0.22)	(0.16)	(-1.19)
Size	-0.011	-0.011	0.088	0.029	-0.006	-0.025
	(-0.37)	(-0.37)	(1.06)	(0.29)	(-0.15)	(-0.14)
Lev	0.049	0.049	0.226	0.131	-0.032	0.310
	(1.08)	(1.08)	(1.03)	(0.77)	(-0.61)	(0.62)
IC	0.000	0.000	-0.026	0.021	-0.006	0.094
	(0.90)	(0.90)	(-0.50)	(0.75)	(-0.69)	(1.15)
Litigation	0.009	0.009	-0.175	-0.001	-0.108	1.905
	(0.09)	(0.09)	(-0.78)	(-0.01)	(-1.40)	(1.65)
Big Auditor	-0.124	-0.124	-0.054	-0.216	-0.212**	0.672***
	(-1.48)	(-1.48)	(-0.25)	(-1.20)	(-2.14)	(3.21)
ROE	-0.060**	-0.060**	0.010	0.118*	-0.018	0.054
	(-2.24)	(-2.24)	(0.12)	(1.72)	(-0.54)	(0.41)
Bloat	0.050***	0.050***	0.056	0.047	0.062***	-0.072
	(2.87)	(2.87)	(1.02)	(1.22)	(2.81)	(-0.56)
SEO	0.023	0.023	0.045	-0.014	0.003	-0.115
	(1.10)	(1.10)	(0.73)	(-0.30)	(0.13)	(-0.70)
Observations	3249	3249	658	442	1797	186
Firm & Year Effects	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R-Square	0.054	0.054	0.265	0.108	0.052	0.151

Table 7 Panel C: CEO and CFO Delta, Power, O-Score and Real Activities Management

	(1)	(2)	(3)	(4)	(5)	(6)
	CEO Chairman of Board	No CEO Chairman of Board	Low Tenure	High Tenure	Low No. of Function	High No. of Function
CEO Comp	-0.002	0.002	-0.021	0.008	-0.001	0.010
	(-0.22)	(0.25)	(-0.86)	(0.27)	(-0.14)	(0.27)
CFO Comp	-0.002	-0.013**	-0.000	-0.011	-0.018**	-0.014
	(-0.32)	(-2.29)	(-0.01)	(-0.50)	(-2.52)	(-0.30)
Cost	-0.011	-0.009	-0.036	0.013	-0.001	0.050
	(-0.40)	(-0.37)	(-0.45)	(0.18)	(-0.04)	(0.32)
CEO Comp * Cost	0.001	0.002	-0.005	-0.001	-0.000	-0.001
	(0.37)	(0.86)	(-0.77)	(-0.20)	(-0.14)	(-0.13)
CFO Comp * Cost	0.001	0.000	0.010	0.000	0.001	-0.006
	(0.70)	(0.05)	(1.43)	(0.04)	(0.65)	(-0.50)
Herf Index	-0.128	-0.033	-0.688*	-0.177	-0.141	0.195
	(-1.17)	(-0.45)	(-1.70)	(-0.34)	(-1.21)	(0.48)
Market Share	0.033	0.049	-0.121	0.395	0.132	0.492
	(0.29)	(0.67)	(-0.19)	(0.66)	(1.10)	(0.52)
Size	0.020	0.028*	0.089	-0.080	0.018	0.060
	(0.97)	(1.76)	(1.51)	(-1.14)	(0.86)	(0.60)
Lev	0.030	0.008	0.040	0.021	-0.049	0.325
	(0.79)	(0.24)	(0.24)	(0.14)	(-1.22)	(1.37)
IC	0.000	-0.005***	0.003	0.002	-0.005	0.061
	(0.99)	(-3.23)	(0.13)	(0.10)	(-1.54)	(0.94)
Litigation	0.062	0.131*	0.141	-0.031	-0.037	0.651**
	(0.57)	(1.94)	(0.37)	(-0.43)	(-0.55)	(2.52)
Big Auditor	-0.089	-0.065	-0.177	0.155	-0.077	0.302
	(-1.54)	(-1.01)	(-0.98)	(0.79)	(-1.20)	(1.26)
ROE	-0.040**	-0.019	-0.010	0.049	-0.000	-0.018
	(-1.99)	(-1.54)	(-0.16)	(1.02)	(-0.00)	(-0.15)
Bloat	0.053***	0.022*	0.094**	0.057***	0.059***	-0.064
	(3.70)	(1.92)	(2.17)	(2.99)	(4.76)	(-0.56)
SEO	-0.010	0.016	0.031	0.001	-0.011	-0.105
	(-0.62)	(1.20)	(0.58)	(0.03)	(-0.66)	(-1.26)
Observations	5414	8401	930	734	4612	361
Firm & Year Effects	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R-Square	0.056	0.028	0.181	0.066	0.045	0.107

Table 7 Panel D: CEO and CFO Incentive Ratio, Power, O-Score and Real Activities Management

	(1)	(2)	(3)	(4)	(5)	(6)
	CEO Chairman of Board	CEO Chairman of Board	Low Tenure	High Tenure	Low No. of Function	High No. of Function
CEO Comp	-0.006	-0.005	-0.218*	0.184	-0.041	-0.097
	(-0.13)	(-0.19)	(-1.80)	(1.43)	(-0.83)	(-0.34)
CFO Comp	0.048	0.004	0.038	-0.153	0.015	0.011
	(1.20)	(0.15)	(0.27)	(-1.05)	(0.25)	(0.04)
Cost	0.009	0.013*	0.017	-0.004	0.022*	0.030
	(1.00)	(1.93)	(0.53)	(-0.20)	(1.82)	(0.57)
CEO Comp * Cost	-0.003	-0.004	-0.021	0.046	-0.016	-0.033
	(-0.21)	(-0.36)	(-0.66)	(1.65)	(-0.91)	(-0.85)
CFO Comp * Cost	0.008	0.011	0.021	-0.036	0.010	-0.029
	(0.78)	(1.09)	(0.52)	(-1.06)	(0.56)	(-0.30)
Herf Index	-0.101	0.044	-0.858**	0.055	-0.094	1.746
	(-0.66)	(0.66)	(-2.47)	(0.07)	(-0.45)	(1.32)
Market Share	-0.072	-0.006	0.575	0.186	0.029	-1.052
	(-0.44)	(-0.08)	(0.99)	(0.21)	(0.14)	(-1.05)
Size	-0.003	0.038**	0.095	0.026	0.007	-0.042
	(-0.10)	(2.10)	(1.16)	(0.25)	(0.18)	(-0.18)
Lev	0.026	0.019	0.242	0.142	-0.058	0.317
	(0.56)	(0.48)	(1.09)	(0.77)	(-1.06)	(0.67)
IC	0.000	-0.006***	-0.024	0.019	-0.005	0.095
	(0.93)	(-2.88)	(-0.49)	(0.63)	(-0.59)	(1.15)
Litigation	0.008	0.156**	-0.201	-0.009	-0.109	1.944
	(0.07)	(2.24)	(-1.00)	(-0.08)	(-1.37)	(1.62)
Big Auditor	-0.126	-0.101	-0.075	-0.200	-0.193**	0.687***
	(-1.49)	(-1.25)	(-0.30)	(-1.15)	(-1.97)	(3.66)
ROE	-0.060**	-0.016	0.021	0.129*	-0.016	0.074
	(-2.26)	(-1.00)	(0.23)	(1.89)	(-0.48)	(0.53)
Bloat	0.050***	0.014	0.079	0.058	0.067***	-0.057
	(2.98)	(1.14)	(1.63)	(1.49)	(2.85)	(-0.48)
SEO	0.017	-0.002	0.022	-0.019	-0.004	-0.101
	(0.85)	(-0.14)	(0.34)	(-0.37)	(-0.20)	(-0.62)
Observations	3258	5939	658	458	1798	186
Firm & Year Effects	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R-Square	0.055	0.032	0.251	0.110	0.058	0.142

Note: This table provides results from regressing real-activity management variables on CEO and CFO delta in panels A and C, and CEO and CFO incentive pay ratio in panels B, and D respectively; cost of real-activity management (Z-Score and O-Score); CEO and CFO relative power and various control variables. Panels 1 and 2 use Z-Score and 3 and 4 use O-Score as cost of accruals management in all panels. The data covers the period from 1993 to 2011. All models are OLS and include year and firm dummies. Standard errors are robust to heteroskedasticity and clustering by firm. All tests are two-sided and t-statistic s are provided in parentheses. The notation ***, **, and * denotes significance at the 1%, 5%, and 10% levels, respectively.

CHAPTER III: ESSAY II

DO CFO's OUTSIDE DIRECTORSHIPS INFLUENCE FIRMS' ACCOUNTING AND FINANCIAL PRACTICES? EVIDENCE FROM THE QUALITY OF EARNINGS AND FINANCIAL POLICIES

As Peter Drucker said in the 1980s, 'The future has already happened' in some other industry or other part of the world. The executive's job is to bring that future to [his] own company.

- *Susan Stautberg, founder of PartnerCom*

If you're OK with the time investment and the risks, board service can make you a better CFO, bring new insights into your company, and enhance your career prospects.

- *David McCann (CFO.com, 2012)*

3.1 INTRODUCTION

Outside board service has become an important topic in the domain of corporate governance. While outside directorships of chief executive officers (CEOs) has been a widely debated topic among scholars (see e.g. Finkelstein & Hambrick, 1996; Friedman & Singh, 1989; Malmendier & Tate, 2007; Rosenstein & Wyatt, 1990) and in the popular press (Lublin, 2001), the role of non-CEO executives – especially that of chief financial officers (CFOs) – has been given limited attention. Existing accounting literature suggests that CFOs' financial knowledge affects the number of accounting errors (Aier et al., 2005). Fama and Jensen (1983) suggest that primary benefits from board memberships are prestige, reputation, and learning opportunities; and outside directors are providers of "relevant complementary knowledge" (p. 315). These under-explored aspects of the CFO's outside directorships provide the basis for the research questions of this study. First, does the inter-firm network/directorships of the CFO influence his or her accounting and financial knowledge, and thereby improve the accounting quality and

financial flexibility?[14] Second, what outside directorship properties influence the accounting and financial practices of the CFO's source firm?

This study examines how a CFO's outside board service contributes to his or her performance in carrying out fiduciary responsibilities at the source firm.[15] Specifically, this paper explores whether CFOs acquire relevant knowledge (accounting and financial expertise) obtained from serving on other firms' board of directors that in turn improve the quality of earnings and financial policies of the source firm.[16] Outside directors are widely known to be an important part of effective corporate governance (Lorsch, 1995). While outside directorships are important for firms, less agreement exists regarding the value of outside directorship of executives to source firms. Existing literature has provided mixed evidence regarding the benefits of outside board memberships of executives to the source firm (see, e.g. Booth & Deli, 1996; Galetkanycz & Boyd, 2012; Rosenstein & Wyatt, 1994). Given that the role of CFOs is expanding and becoming more important in the capital market (Ernst & Young, 2012), it is important to understand how their outside directorships/networking affects their firm's accounting and financial practices.

Scholars have used various perspectives to examine the costs and benefits of outside directorships on an executive's source firm. For example, agency theory literature argues that while executives gain financial benefits and other perquisites from outside directorships (Yermack, 2004), little benefit is accrued to the source firm (Fama & Jensen, 1983). Rosenstein

[14] By source firm, I mean the primary employer of the CFO.
[15] In this paper, I use two measures to define a CFO's fiduciary responsibilities: the quality of earnings and financial practices, which is defined in detail later in this paper. In brief, by earnings quality, I mean accruals quality, the incidence of financial restatements, and earnings persistence. By financial practices, I mean adjustment costs and cash flow sensitivity of cash.
[16] I refer this as knowledge transfer. Knowledge transfer can be defined as a process through which one individual or organization learns from the experience of another (Argote & Ingram, 1999).

and Wyatt (1994) find a negative stock price reaction to the announcement of CEOs joining the boards of other firms, suggesting that investors find the event to be wealth-reducing to the source firm. Furthermore, executives that overstretch themselves with multiple outside directorships will not only be ineffective monitors but also compromise their responsibilities towards their primary employer.[17]

The knowledge transfer, or embeddedness, literature suggests that outside directorships of executives bring value to the source firm.[18] Galbraith (1990) suggests that moving individuals across firms can be a powerful tool to transfer knowledge. Fama and Jensen (1983) argue that executives of companies bring skills that are helpful in managing complex businesses. Bacon and Brown (1974) argue that executives can become more effective within their own firm by serving on the boards of other firms. A third body of literature argues that outside directorships of executives have no impact on firm performance. For example, Ferris, Jagannathan, and Pritchard (2003) suggest that no relationship exists between the number of directorships and the ability of these directors to monitor firms effectively.

One objective of my paper is to focus on the tension between the costs and benefits to the firm when a CFO serves on the boards of other firms. It is possible that serving on the board of various firms concurrently increases the likelihood that CFOs learn about accounting and financial practices of other firms and use the knowledge acquired to improve practices at their own firms. Nevertheless, it is also possible that sitting on various audit committees/boards

[17] Echoing similar sentiments, Chancellor William Allen (1992) of the Delaware Court of Chancery argues that "effective monitoring requires a commitment of time and resources… The demands of the position, if properly understood, are inconsistent… with service on an impressively long list of boards" (p. 457). Multiple directorships of board members is a salient issue in the corporate world. In fact, the National Association of Corporate Directors (NACD) guidelines (2006) recommend that senior executives and CEO hold a maximum of three outside directorships.

18 Although knowledge transfer and embeddedness perspectives are different concepts, I use these two notions together to convey the idea that opportunities to learn arise from outside directorships, and managers can use these opportunities to learn and bring the knowledge to their source firms.

distracts CFOs from performing their fiduciary responsibilities at their source firm. This raises the question whether outside board memberships of a CFO is beneficial to the source firm and if it is, then how many committees/board a CFO should sit on.

Chava and Purnanandam (2010) suggest that CFOs are more influential and responsible for decision making where sophisticated accounting and financial knowledge is required. To my knowledge, the impact of serving on outside directorships on specific performance of managers in their source firms has not been investigated. Therefore, it is more appropriate to investigate the role of directorships on CFO-specific responsibilities as opposed to overall firm performance. My research provides insight on whether task-specific knowledge, specifically accounting and financial expertise, transfers from directorships.

Alternatively, it is also possible that CFOs of firms with better quality of earnings and financial practices (i.e. more reputed CFOs) are more likely to be asked to join another firm's board. For example, Kaplan and Reishus (1990) find that executives of companies that reduce their dividend payments are less likely to receive additional outside directorship offers, thus suggesting that executives of firms that do not perform well are less likely than executives of better performing firms to be invited for an outside directorship. In other words, two possibilities exist: a CFO's outside directorship results in improved financial policies at the source firm, or better financial policies at the source firm lead to an increase in outside directorship invitations.[19]

Using a panel of U.S. firms, I test whether CFO outside board membership is associated with differences in accounting quality as proxy by restatements, discretionary accruals, and

[19] In an unreported regression, I use two-stage instrumental variable approach to further address the concern of endogeneity, where CFO outside directorship is instrumented in the first stage. The results from the second stage are consistent with other specifications, suggesting that CFO outside directorships positively affect the quality of accounting and financial policies.

persistence of earnings. In general, I find that accounting quality of firms whose CFO holds outside board memberships is better than firms whose CFOs do not belong to outside boards. I also consider the impact of CFO outside board membership on financial policies. My examination using a partial adjustment model (Flannery & Rangan, 2006) reveals that firms with CFOs holding outside directorships exhibit a greater adjustment speed towards the optimal capital structure than similar firms whose CFO do not hold an outside board of directors. Additionally, I find that firms whose CFOs hold outside directorship are associated with reduced cash holdings, specifically for constrained firms. However, lower cash holdings do not inhibit the firms financially, as the cash holdings of these firms are less sensitive to cash flow shocks. Similar results holds with firm-level fixed effect and when considering a subsample of only those firms that experience a change in CFO outside directorships (i.e. whose CFOs either accepts or quit outside board memberships); thus increase (decrease) in accounting quality and financial flexibility is also associated CFO accepting (quitting) outside board memberships.

Overall, my analyses of both accounting quality and financial policies suggest that outside directorships provide opportunities for CFOs to network and acquire knowledge that can be used to manage their source firms more effectively. By providing an understanding of the influences of CFOs' outside directorships on source firm accounting and financial practices, this research makes several contributions. First, this paper increases our understanding of knowledge creation in inter-firm networks and how knowledge creation impacts a firm's performance. This research is important, because ineffective financial reporting process resulting from a CFO's inability or lack of knowledge can result in actual (e.g. fraud) and potential (e.g. litigation) costs to the firm. Furthermore, the inefficient use of cash for investments can result in a firm foregoing positive net present value projects. If CFO knowledge and expertise improves the quality of

financial reporting and the effectiveness of financial practices, then it is important to understand the source of knowledge creation. Outside directorships are one possible untapped source of accounting and financial knowledge for CFOs, and knowledge acquired from these directorships helps CFOs perform their duties.

Second, I investigate the role of non-CEO executive outside directorships. Prior research has focused primarily on CEOs' outside directorships. Fich (2005) investigates the impact of CEO and non-CEO executives' outside directorships and investor reactions to those appointments. He finds that investors welcome the appointment of outside CEO directors. However, the author finds insignificant and negative reactions to the non-CEO director, suggesting that investors do not find value in the non-CEO directorships. While investors in general find a non-CEO directorship non-value adding, the role of CFO directorship is not clear given the increasing role of CFOs in decisions related to corporate policies, especially on accounting and financial practices. Another reason for examining CFO directorships (as opposed to CEOs) is that even though CEOs are the ultimate decision makers in the firm, CFOs are more responsible for decision making that requires more specialized judgment, such as accruals and cash flow management. These finer aspects of corporate financial decision making eventually affect the overall firm performance. For example, cash-flow management can influence the efficiency of a firm's investments. Therefore, it is important to understand the influence of outside directorships in a CFO's decision-making processes.

Third, this paper provides a more comprehensive examination of the impact of a CFO's network of social capital on the accounting and financial practices of the primary employer. I examine CFO's connections with not only the board directorships in general, but also with the audit committees of those boards. Existing literature does not distinguish between board

directorships and specific committee membership such as audit committee directorships. This distinction is important because it provides insight into the alignment of a manager's expertise and job profile, as well as how these directorships reinforce the manager's talent, thus improving firm performance. In other words, based on managerial expertise, serving on certain board directorships may be more useful than others for the source firm, which seems to be an important issue overlooked in the existing literature.

Finally, I also extend previous research by examining whether firms benefit more when the CFO sits on the board of directors of firms in a related industry and whether certain types of firms benefit more from the transfer of knowledge. Existing research has argued that related-task experiences are both more transferable, and therefore improve the performance of the source unit (Bailey & Helfat, 2003), and reaffirm the already existing belief and therefore are not likely to make any difference (Finkelstein & Hambrick, 1996). Whether industry-related CFOs' outside directorships improve the source firm performance is therefore an empirical question. To the best of my knowledge, no other study has attempted to assess the effect of industry-level inter-firm directorships and its impact on accounting and financial practices.

The paper proceeds as follows: Section II reviews the related literature. Section III develops hypotheses, and section IV presents data collection and the methodology. Section V discusses the empirical findings, and finally, section VI discusses limitations and conclusions.

3.2 LITERATURE REVIEW

3.2.1 Meaning of Knowledge Transfer:

Argote and Ingram (2000) define knowledge transfer as "the process through which one unit (e.g. individual, group, department, division or firm) is affected by the experience of another" (p. 151).[20] Knowledge transfer implies that each individual or group need not learn from basic principles but can rather learn from the experience of others (Argote & Ingram, 2000), a circumstance that is relevant in the context of this study. According to the framework of McGrath and Argote (2004), knowledge is embedded in the three basic elements of organizations—members, tools, and tasks—and the various sub-networks formed by combining or crossing these basic elements. My focus is primarily on members, because, as Starbuck (1992) shows, in professional service organizations – such as law firms, consulting firms, or accounting firms – a significant component of the organization's knowledge is embedded in individual members. Outside directorship provides a medium to gain insights into the policies and practices of other organizations, and is therefore an important mechanism of knowledge transfer (Haunschild, 1994).

Galbraith (1990) and Rothwell (1978) suggest that movement of executives is a powerful mechanism to transfer knowledge between organizations. Individuals are able to adapt and restructure existing knowledge so that it applies to their new contexts (Allen, 1977). Argote and Ingram (2000) conclude that norms and routines can be transmitted to group members without the members being able to articulate the norm and without an awareness of the knowledge embedded in it. The quality of financial reporting and financial policies are norms and routines that are examples of implicit knowledge transfer. Thus, implicit knowledge transfer occurs

[20] For example, a plant owned by a multinational company in one country can cut costs by implementing new cost efficient measures developed in its sister unit in another country.

without the recipient unit being able to articulate the knowledge it acquired. By acquiring knowledge and expertise regarding the accounting and financial practices of another firm from outside board memberships, a CFO can use the knowledge gained to improve the quality of earnings and financial practices of the source firm.

Conversely, Argote (1999) suggests that successful knowledge transfer can be difficult to achieve. Successful knowledge transfer can also be impeded by the fact that it conflicts with already established norms and routine at the source organization. Individuals who do not understand why particular practices are effective may not be able to efficiently communicate and transfer knowledge to others (Szulanski, 1996).[21] Moreover, it is also possible that recipients might be unable to exploit outside sources of knowledge (Cohen & Levinthal, 1990). The reluctance of some recipients to accept knowledge from the outside can also be problematic in transferring knowledge.

Knowledge transfer can also be inhibited by the difficulties in recognizing opportunities to transfer and in acting upon them (Szulanski, 2000). In the context of this paper, opportunities for knowledge transfers occur as soon as gaps in accounting and financial policies and practices occur between firms, and knowledge to address these gaps is found. However, it is difficult to decide if the opportunity to transfer knowledge should be pursued. This becomes even more demanding when members are unable to understand existing policies and procedures or when benchmarks or standards to measure performance are missing (Szulanski, 2000). The search for opportunities and the decision to proceed with a transfer inevitably occurs under some degree of ambiguity. The question of whether the practices that worked in other organizations will also be

[21] For example, General Motors had great difficulty in transferring manufacturing practices between divisions (Kerwin & Woodruff, 1992).

effective in the CFOs' source firm will always be relevant. In other words, it is difficult to assess the real merit of an opportunity and to decide to act on it.

3.3 HYPOTHESES DEVELOPMENT

3.3.1 Knowledge Transfer/Embeddedness Perspective

Organizations are embedded in a social network cohabited by many firms. These firms draw upon one another to seek tangible and intangible resources; they acquire knowledge from each other in order to become more competitive (Pfeffer & Salancik, 1978). A substantial body of research in corporate governance finds support for the value of outside directors. Booth and Deli (1996) investigate factors affecting the number of directorships held by CEOs, and find that CEOs hold more outside directorships as a function of existing relationships with other firms' boards. The authors interpret the result as evidence that CEOs of firms for which participation is important to bonding will hold more outside directorships. Fama and Jensen (1983) suggest that senior executives of large corporations have demonstrated skills in managing complex business organizations and seem to be ideal candidates for board of directors in other firms.

Companies add new outside directors to the board in order to increase the depth or the diversity of knowledge and experience represented. Kaplan and Reishus (1990) find that that the probability of a CEO taking a position as an outside director is positively associated with his or her firm's performance. They suggest that demand for outside directors is disciplined by the market, because managers who neglect their firms are unlikely to be asked to serve on the board of other firms (Brickley et al., 1994; Byrd & Hickman, 1992; Fama, 1980; Fama & Jensen, 1983). This line of literature is consistent with the notion that external directors bring skills, expertise, and knowledge that they acquire from holding positions in other firms. Many persons with knowledge and expertise serve on the board, so a CFO on the same board will gain greater skills and expertise that can be useful to his or her organization.

Galetkanycz and Boyd (2012) find that CEOs' outside directorships are positively related to long-term performance of their source firms. If holding an outside directorship is value-increasing for firms, it is important to understand where the value is created. Bacon and Brown (1974) suggest various means through which CEOs can become better managers at the source firms by serving on outside board memberships. Similarly, these advantages are applicable to CFOs:

(1) *Standards of comparison*: CFOs can compare accounting policies and practices of various firms, and determine if there are discrepancies in their practices and why and therefore take measures to improve the practices at the source firm.

(2) *Broadened insight*: Serving on the board of director of various firms will enhance the insight of CFOs. Such directorships can provide CFOs valuable information.

(3) *Exposure to different management styles*: Observing the management style of different firms can help CFOs understand managers' tendencies towards, e.g., earnings managements and cash-flow management decisions etc.

(4) *A source of counsel:* The access to the board of directors of other firms can be a source of advice.

Overall, the knowledge transfer perspective suggests that CFOs' outside directorships are advantageous to the primary employer. CFOs can gain some problem solving knowledge from being on the board of a firm that they can use to resolve issues in the source firm. Accordingly, the knowledge transfer perspective leads to the following hypothesis:

H1: Consistent with the knowledge transfer perspective, CFO outside directorships will be positively related to the quality of the source firm accounting and financial flexibility.

3.3.2 Agency Theory Perspective

Agency theory suggests that the roles of ownership and control are separate in modern corporations. The separation of ownership and control makes it impossible for managers to properly observe agents' actions (Holmstrom, 1979; Jensen & Meckling, 1976). The lack of monitoring can lead agents to maximize their own utility at the expense of shareholders (Williamson, 1963). As a result, owners have difficulty assessing the extent to which managerial actions are value maximizing or rent extracting. One issue of concern to owners is the CEO's outside directorships (Conyon & Read, 2006; Rosenstein & Wyatt, 1994).

Outside directorships often lead to social networking. Agency theory would predict a negative relationship between social networks of executives and the performance of their primary employer. This prediction is based on the perspective that managers' personal goals and objectives routinely diverge from those of shareholders (Jensen & Meckling, 1976), and that managers would be more likely to join boards of other firms for personal benefits – such as perks and compensation, increased prestige, and entrenchment at the source firm – than to gain knowledge. This argument is consistent with the theory of managerial power that suggests that outside board memberships result in increased managerial influence in the source firm (Bebchuk & Fried, 2003). Furthermore, Rosenstein and Wyatt (1994) examine the shareholders' wealth effect when an officer of one firm joins the board of directors of another firm. They find a negative stock price reaction to the announcement, which is consistent with investors find the event to be wealth-reducing to the source firm.

Another concern with outside directorship is that board memberships are time consuming and result in high opportunity costs for executives who sit on an outside board. For example, Perry and Peyer (2005) argue that executives face costs of accepting external directorships.

These costs include expending effort in carrying out the monitoring function as a director, which can distract executives from their responsibilities at the source firm. Lipton and Lorsch (1992) suggest that individual directors spend at least 100 hours per year fulfilling their jobs as directors. Furthermore, Lorsch and Maciver (1989) and Neff (1998) document that the lack of time is the most common reason for directors to decline a board position.

The agency theory would predict that executives would like to continue accepting outsider directorships as long as they gain personal benefits, even at the expense of ignoring their fiduciary duties at the source firm. They not only receive financial compensation from the directorships but also increased prestige and standing in social circles (Useem, 1984). Fich and White (2003) find evidence that suggests that CEOs enjoy higher compensation and decreased turnover when they sit on interlocked boards. Loderer and Peyer (2002) find a negative association between the average number of multiple directorships and the value of the source firm. In summary, agency theory literature suggests that while executives benefit from outside board directorships, the source firms are negatively impacted by it. Therefore, this stream of literature leads to the following hypothesis:

H2: Consistent with agency perspective, CFO outside directorships will be negatively related to the quality of the firm's accounting and financial flexibility.

3.3.3 Optimal Level of Directorships

Block (1999) studied the incremental benefit of the appointment of an outside director. He suggests that the announcement of an outside director is viewed as supportive of stockholder interest. However, after a critical mass of outside directors are assembled in the board of directors, the addition of another such director is likely to produce little or nothing in terms of

benefit to shareholders' interests. Booth and Deli (1996) suggest that a firm would allow its executives to accept an outside directorship only to the point at which the marginal benefits of doing so are equal to the marginal costs for the firm. The NACD (2006) echoes these sentiments, recommending that senior corporate executives and CEOs should hold no more than three outside directorships. Consistent with the authors' arguments and NACD guidelines, I argue that the number of outside positions held by a CFO is a function of the relative costs and benefits to the source firm's accounting and financial performance. How costs and benefits change as the CFO takes an additional outside position is an empirical issue. My conjecture is that the benefits of knowledge transfer are a non-linear function of the number of outside board positions held by the CFO at a given time. Once a CFO serves on the optimal number of outside directorships, any additional outside directorships may negatively affect the source firm.[22]

I predict that outside directorships of CFOs enable them to understand complex accounting issues and finer aspects of financial decision making. Notwithstanding, I also suspect that there is maximum amount of accounting knowledge a CFO can acquire from outside directorships. If he or she sits on the optimal number of directorships, then sitting on the board of another firm is likely to produce little or no additional accounting expertise. On the contrary, it may distract a CFO from his or her obligations to the primary employer. Thus, I expect an inverted U-shaped relationship between the number of multiple directorships held by the CFO and the performance of his or her fiduciary responsibilities (as defined in this paper). The above discussion leads to the following hypothesis:

[22] "Optimal number" can be defined as the number of outside directorships held concurrently by a CFO that will positively affect the CFOs primary employer. Per NASD, the optimal number of outside directorships for a senior executive is three. In the paper, I empirically examine the optimal number of outside directorships for CFOs.

H3: *Ceteris paribus*, once the optimal number is surpassed, the number of outside directorships/audit committee positions held by CFOs is associated with poorer execution of fiduciary responsibilities.

3.3.4 Related Industry

Several studies in interorganizational networks suggest that managers are more likely to affirm their own existing beliefs or views about strategy if they share primary industry of employment, decreasing the possibility of knowledge acquisition. For example, Finkelstein and Hambrick (1996) indicate that advice from managers in the same industry reinforce CEOs' strategic judgments in poorly performing firms that tend to reduce CEOs' doubts about the appropriateness of their firms' corporate strategies, reducing the likelihood to initiate any strategic change. Furthermore, Granovetter (1973) and McPherson, Popielarz and Drobnic (1992) suggest that advice from dissimilar managers challenges the existing beliefs of managers and these advices are less subject to the norms of mutual affirmation.

In contrast, considerable research in cognitive psychology has been devoted to how experience in one task affects the performance of another (e.g., Singley & Anderson, 1989). Bailey and Helfat (2003) compare the transferable skills of external CEOs appointed from within the same (related) industry and from an unrelated industry. Their results suggest that the market expects that an external successor from the related industry will bring skills that can easily be used by the hiring firm. Bailey and Helfat also find that companies hire few external successors with completely unrelated prior work experience. Darr and Kurtzberg (2000) analyze factors facilitating knowledge transfer across fast food franchises and find that business similarity creates a context favorable to knowledge transfer. Using the same logic, I expect that if there is a

knowledge transfer, it will be higher in the related industry. Hence, I expect that knowledge transfer is greater when a CFO concurrently sits on the board of directors of firms in similar or related industries than when he or she sits on the boards of firms from unrelated industries. Thus, I hypothesize in an alternate form the following:

H4: *Ceteris paribus*, the quality of earnings and financial practices is more likely to improve from knowledge transfer when a CFO concurrently sits on the board of a firm in a related industry than in an unrelated industry.

3.3.5 Audit Committee vs. Non-Audit Committee Directorships

Although corporate boards meet frequently to discuss key issues, the majority of decisions are made in smaller groups (Bacon & Brown 1973; Securities and Exchange Commission, 1980). The charter and influence of each committee differs substantially, and therefore the opportunity to learn from each committee would be different. For example, the compensation committee is responsible for determining appropriate compensation for top executives and assessing their performance. However, the audit committee is responsible for overseeing the financial reporting process. Whether being on the board of a company provides access to key issues and most of the learning opportunities is an empirical question. If sitting on the board of another firm provides sufficient exposure to firm-specific knowledge, then task-specific directorships (i.e. audit committee, compensation committee, etc.) may not provide any incremental knowledge.

In contrast, if task-specific directorships help CFOs obtain specific knowledge that is relevant for certain settings, then it is more likely that audit committee directorship will have more influence on the accounting quality of the source firm than non-audit committee

directorships. The premise for this prediction is that audit committees, which handle issues related to financial reporting, would be more appropriate to the CFO for learning opportunities that deal directly with matters related to his or her financial reporting and fiduciary responsibilities. This is in line with evidence found by Bonner and Lewis (1990), and Libby and Tan (1994), which suggests that, after controlling for general audit experience, more task-specific knowledge is associated with improved auditor performance on specific audit tasks. Therefore, I hypothesize the following, in the alternate form:

H5*:* *Ceteris paribus*, the type of directorship will moderate the relationship between CFO directorship and the quality of earnings such that effects will be more positive for audit committee directorships than for non-audit committee directorships.

3.4 RESEARCH DESIGN AND SAMPLE SELECTION

3.4.1 Chief Financial Officers and the Quality of Earnings and Financial Practices

CFOs play a vital role in establishing high-level financial policies and procedures and ensuring that these guidelines are followed by the company. I focus on CFOs because the CFO typically oversees the firm's financial reporting process, and therefore has the most impact of all executives. Furthermore, SOX 302 requires the CFO (as well as the CEO) to certify in writing the veracity of annual and quarterly financial reports. One of the most important duties of a CFO is to oversee the financial reporting practices (Ge, Matsumoto & Zhang, 2010), including accruals management (Jiang, Petroni & Wang, 2010) and instances of restatements (Aier et al., 2005). These measures ensure market confidence in the quality of financial reporting by the company. An effective and knowledgeable CFO can increase the integrity of the financial reporting system (e.g. Defond, Hann & Hu, 2005). Following existing literature, I use accruals quality, earnings persistence, and restatements to proxy for the overall earnings quality.[23]

CFOs also play an important role in financial strategy and practices. Existing literature shows that CFO equity incentives are better than CEO equity incentives at predicting leverage structure (Chava & Purnanandam, 2010). This suggests that CFOs play an important role in managing the firm's capital requirements. Furthermore, Servaes and Tufano (2006) find in their survey of CFOs that CFOs consider investment efficiency as one of their most important responsibilities. Consistent with prior research, I use two proxies for a CFO's responsibility towards financial practices. In particular, I use adjustment cost (Flannery & Rangan, 2006) and cash flow sensitivity of cash (Almeida, Campello & Weisbach, 2004).

[23] In this paper, I use earnings and accounting interchangeably.

3.4.2 Sample Selection

My sample consists of firms that appear in the Capital IQ database from 1997 to 2011 for which I find relevant financial data. This data provides information on company directors, such as committee membership, independence, qualifications, work experience, tenure, and audit committee chairs. Restatement data is collected from Audit Analytics. Accounting and financial data is collected from Compustat. I exclude regulated utilities (SIC codes 4949 to 4999) and financial firms (SIC codes 6000 to 6999).

3.4.3 Research Design

Knowledge transfer is an abstract concept. It can be observed through the changes in the knowledge or performance of the recipient unit. Knowledge transfer can be measured through the changes in the knowledge pool of the recipient unit, but this approach poses problems (Argote & Ingram, 2000). A significant component of knowledge is tacit and cannot be easily articulated (Nonaka, 1991). Therefore, I use performance-based measurement to assess knowledge transfer. Argote and Ingram (2000) suggest that performance-based measurement is better suited to measure the tacit knowledge transfer.

As explained in section 2.1, I use the quality of earnings and financial policies to measure the effect of knowledge transfer on the CFO-specific firm performance. I use accruals quality, earnings persistence, and the incidence of financial statement to proxy the quality of earnings. Following Mobbs (2012), I use cash flow sensitivity of cash and adjustment cost to proxy financial policies.

3.4.3.1 The Quality of Earnings

3.4.3.1.1 Earnings Restatements

My first measure of earnings quality is earnings restatements, because they signal poor quality of earnings (e.g. Aier et al., 2005; Dechow et al., 2010). I expect that if outside directorship provides opportunities to learn and network, then firms whose CFOs hold outside directorships are less likely to have earnings restatements. Therefore, I expect a negative relation between the CFO's outside directorships and earnings restatements.

3.4.3.1.2 Earnings Persistence

My second measure of earnings quality is earnings persistence. Earnings persistence is widely used by accounting researchers as a measure of earnings quality (see, for example, Blaylock, Shevlin & Wilson, 2012; Demerjian et al., 2012; Dechow et al., 2010). Demerjian et al. (2012) argue that higher quality managers choose better projects and manage the firms' operations more efficiently. As in Demerjain et al., who find that firms with better managers have more persistent earnings, I also expect that firms with more knowledgeable and capable CFOs will have more persistent earnings. Therefore, if outside board memberships make a CFO a more abled manager, then I expect a positive relation between earnings persistence and CFO outside directorship. I calculate earnings (Earnings) as earnings before extraordinary items (IBC) scaled by average total assets (AT) and estimate the following regressions, where the coefficient β_1 is earnings persistence and the interaction between *Earnings * CFO Directorship* provides evidence of incremental effect of CFO directorship on earnings persistence:

$$Earnings_{t+1} = \beta_0 + \beta_1 Earnings_t + \beta_2 CFO\ Directorship_t + \beta_3 Earnings_t * CFO\ Directorship_t + \lambda' Other\ Control\ Variables + \varepsilon \quad (1)$$

3.4.3.1.3 Dechow and Dichev (2002) Measure of Earnings Quality

My third and final measure of earnings quality follows Dechow and Dichev (2002), and measures how accruals map into past, current, and future cash flows. Dechow and Dichev argue that high quality of accruals are eventually realized into cash flows. I hypothesize that knowledge transfer due to the CFO's outside directorships will result in lower accruals. In contrast, when the accrual process has fewer estimation errors, accruals better map into cash flows. To determine how a firm's accruals map into cash flows, I follow Demerjian et al. (2012), who adopt the following model proposed by Dechow and Dichev (2002). For brevity, the firm subscript *i* is suppressed in the equation:

$$\Delta WC_t = \beta_0 + \beta_1 OCF_{t-1} + \beta_2 OCF_t + \beta_3 OCF_{t+1} + \beta_4 \Delta REV_t + \beta_5 PPE_t + \varepsilon \qquad (2)$$

where ΔWC_t represents the change in working capital at *t*. The variables OCF_{t-1}, OCF_t, OCF_{t+1} represent operating cash flows at t-1, t, and t+1, respectively. The remaining variables from the modified Jones model are: ΔRev_t which represents change in revenues at time t, and PPE_t which represents the level of property, plant, and equipment at time t. All variables in equation (2) above are scaled by average total assets.

The residual from the above regression estimates the extent to which current accruals map into past, present, or future cash flows. The lower absolute accruals in equation (2) suggest higher quality of mapping. Following Demerjian et al. (2012), I take the standard deviation of the residual over a rolling four-period (ε_{t+1}, ε_{t+2}, ε_{t+3}, ε_{t+4}). The variability of estimation process is positively related to the standard deviation of the residuals. Therefore, the higher level of standard deviation reflects the reduced earnings quality.

3.4.3.2 Financial Policies/Practices

3.4.3.2.1 Adjustment Cost

My next measure of a CFO's financial policy decisions is his or her ability to adjust the capital structure to the optimal level. Fischer, Heinkel, and Zechner (1989), Flannery and Rangan (2005), and Myers (1984) suggest that firms are inhibited by various financial costs to quickly return to optimal level of capital structure. Prior research suggests that the speed of a firm's readjustment to the optimal capital structure depends on costs of these adjustments (Kayhan & Titman, 2007; Mobbs, 2011). Given that the CFO exerts a major influence in the firm's capital structure decisions (Chava & Purnanandam, 2010; Mobbs, 2011), the abilities and knowledge of the CFO can moderate the costs of these adjustments. Following this further, I argue that the speed at which firms return to their optimal capital structure depends on the knowledge of the CFO. Following Flannery and Rangan (2005) and Mobbs (2011), I estimate the following model of partial readjustment and examine how outside directorships of the CFO influence the speed of the adjustment:

$$MDR_{j,t+1} = (1-\lambda)MDR_{j,t} + (\lambda\beta)\boldsymbol{X}_{j,t} + \delta_{j,t+1} \quad (3)$$

Where MDR is a firm's market debt ratio calculated as the following:

$$MDR_{i,t} = D_{i,t} / D_{i,t} + S_{i,t}P_{i,t} \quad (4)$$

Where $D_{i,t}$ denotes the book value of firm's *i's* interest-bearing debt at time *t*, $S_{i,t}$ equals the number of common shares outstanding at time *t*, and $S_{i,t}$ denotes the price per share. In the model above, $1 - \lambda$ denotes the speed of adjustment, and X is the vector of variables that affect the firm's target debt ratio.

3.4.3.2.2 Cash Flow Sensitivity of Cash

Another measure of a firm's financial policy decisions is the ability of the CFO to better prepare the firm to take full advantage of all available positive NPV projects. Almeida, Campello, and Weisbach (2004) find that financially constrained firms' cash holdings are more sensitive to the earnings than those of unconstrained firms. This implies that a better managed cash holding policy is less sensitive to the earnings. I expect that that CFOs' knowledge and ability is negatively associated with the sensitivity of cash holding to earnings. Following Almeida et al. (2004) and Mobbs (2011), the empirical model is estimated as follows:

$$\Delta\, Cash\ Holdings_{j,t} = \alpha_0 + \alpha_1 Cash\ Flow_{j,t} + \alpha_2 Tobin's\ Q_{j,t} + \alpha_3 Assets_{j,t} + \varepsilon_{j,t} \qquad (5)$$

Where cash holdings are defined as cash and marketable securities scaled by assets. Cash flow is defined as net income before extraordinary items scaled by assets. Tobin's Q is included to control for growth opportunities; firms with more opportunities to grow are more likely to hold cash to take advantage of such options. Additionally, model 5 includes total assets (proxy for size) to control for economies of scale in cash management (Almeida et al., 2004).

3.4.4 Empirical Model

In this section, I describe the model that I use to examine my hypotheses. I predict the impact of the CFO's multiple directorships on quality of financial reporting and cash flow management. I estimate the following equation. For brevity, all time and firm subscripts are suppressed in the following model:

$$Performance = \alpha_0 + \alpha_1 CFO\ Directorship + \lambda'\ Other\ Control\ Variables + \varepsilon \qquad (6)$$

where *Performance* is defined as either earnings quality (*AQ*) or financial practices (FP) as defined in previous sections:

$AQ \in |AA_{j,t+3}|$, earnings restatements$_{j,t+3}$, earnings persistence

$FP \in$ adjustment costs and cash flow sensitivity of cash

CFO Directorships = an indicator variable that equals 1 if a CFO holds outside board membership

All the variables in the above equations are defined in the appendix. For ease of understanding, I multiply estimated accruals by -1; in other words, higher value of AQ indicates better earnings quality. The first equation models the accounting quality and financial practices as a function of CFOs' multiple directorships and a set of firm-specific factors that have been shown to affect the accounting quality and financial practices as defined in this paper. The coefficient on the CFO directorships in model (6) captures the influence of the CFO's outside directorships on the unexplained portion of the firm's the quality of financial reporting and practices. I multiply accruals quality by -1 such that larger (smaller) values represent better (worse) earnings quality. If knowledge transfer theory holds, then I expect a positive coefficient between the CFO's outside directorships ($\alpha_1 > 0$) and *AQ* except for restatements specification in which I expect a negative association between *CFO Directorship* and restatement. Further, I expect a positive relation between outside directorships of the CFO and a*djustment costs* ($1 - \alpha_1 > 0$) if knowledge transfer theory holds. Additionally, I expect that an increase in CFO knowledge through outside board membership will decrease the sensitivity of cash holdings to the cash flow.

In contrast, agency theory predicts a negative relation between the quality of earnings, financial policies, and the CFO's outside directorships. If agency theory holds, then I expect the coefficient on the CFO directorship ($\alpha_1 < 0$) to be significantly negative in equation (6) when the dependent variable is earnings quality. Furthermore, the coefficient on the CFO directorships

is expected to be negative ($1 - \alpha_1 < 0$) when the dependent variable is *adjustment costs.* In addition, if the agency theory holds, then I expect the sensitivity of cash holding to cash flow to increase.

3.5 RESULTS

3.5.1 Univariate Results

Panel A of table 9 provides summary statistics for the full sample. Six percent of firms in my sample have CFOs who hold outside board memberships. Panel B of table 9 provides summary statistics by CFO outside directorships. To do so, I split the sample into firms with outside board memberships and without outside board memberships. I added a t-test to determine if this difference is significant for continuous variables, and a chi-squared test to determine if the difference is significant for discrete variables. The average age of CFOs who hold outside board memberships is 51.33 compared to the average age of 47.93 of CFOs with no outside board membership. Additionally, firms with CFO outside directorships are significantly less likely to issue restatements. The accruals quality of firms with CFO outside directorships is significantly better.

Table 9, panel C provides select correlations among variables of interests. CFO outside directorship is significantly, negatively correlated with restatement, and significantly, positively correlated with accruals quality. However, I use a multivariate regression approach in my primary analysis to correct for confounding effects.

[Insert table 9 about here]

3.5.2 Multivariate Results

3.5.2.1 Earnings Quality

3.5.2.1.1 Earnings Restatements

Table 10 reports the results of logistic regressions with earnings restatements as the dependent variable and a variety of independent variables, including CFO outside directorship. Demerjian et al. (2012) suggest that standard errors in panel data may be correlated within years and across time by firm. Following their methodology, I either cluster my standard errors by firm and year (Petersen, 2009) or include firm-fixed effects and cluster standard errors by firm. In addition to Demerjian et al. (2009), I also estimate restatement regression by including industry and year-fixed effects. Column 1 of table 10 presents the results that include industry- and year-fixed effects with standard errors clustered at the firm level. The results from this estimation suggest that CFO outside directorships are negatively associated with earnings restatements (β_1 = -0.21, $p < 0.10$). The marginal effect of is economically significant at -2.6 percent (not tabulated). In column (2), I exclude industry- and year-fixed effects, and estimate the model with standard error clustered by firm and year. The results from column 1 continue to hold; specifically, CFO outside directorship is significantly, negatively associated with the probability of earnings restatement. In column 3, I include firm-fixed effect, and the result for CFO outside directorship becomes insignificant.

With respect to my control variables, I find that *Sales Volatility* is positively and significantly associated with *Restate* in the first two models but becomes insignificant and negative in the model with firm-fixed effect, consistent with Demerjian et al. (2012). In addition, *Negative Earnings* is positive and significant in all three models, and abnormal return is negatively associated with restatement in model 1, but becomes insignificant in columns 2 and 3.

In general, the signs on my control variables are consistent with the existing literature. Overall, the results from table 10 provide evidence, however marginally significant, that CFO outside directorship results in lower probability of financial restatement. This suggests that outside directorships are an important source of learning to CFOs, and that knowledge acquired from these directorships helps CFOs become better overseers of the financial reporting process.

[Insert table 10 about here]

3.5.2.1.2 Earnings Persistence

My second measure of earnings quality is earnings persistence. Demerjian et al. (2012) argue that better managers choose better projects and manage firms more efficiently; therefore, firms managed by abled managers are more likely to have persistent earnings.[24] Expanding upon Demerjian et al.'s argument, I consider whether outside directorships results in knowledge acquisition by CFOs, which then leads to improved earnings persistence in their respective firms.

The results of earnings persistence and CFO outside directorships are reported in table 11. Following Demerjian et al. (2012), who suggest that earnings persistence is not desirable for loss firms, I estimate my model separately for profit and loss firms, and report only results for profit firms. In model 1 of table 11, I estimate regression with standard errors clustered by year and firm. The base persistence in this specification is 0.60, and increases to 0.79 (0.60 + 0.19) for firms where a CFO also holds an outside directorship. Including firm-fixed effects in model 2 reduces the base persistence to 0.30 ($p < 0.01$), which is consistent with Demerjian et al. (2012),

[24] See Demerjian et al. (2012) for discussion in detail on the relation between higher-quality managers and earnings persistence.

and renders the coefficient on *Earnings*CFO Directorship* insignificant, but the sign on the coefficient remains consistent.

In columns 3 and 4, I present results using average future earnings from period t+1 to t+3 as the dependent variable, and the interaction between earnings in period t and CFO outside directorship as the main variable of interest. The average 3 years earnings are used to avoid the impact of any economic event in a particular year that can influence a given year's earnings (Demerjian et al., 2012). Column 5 shows a significantly positive association between average 3-year earnings and CFO directorship ($p < 0.05$). Overall, the results from 3-year average earnings are similar to those reported in columns 1 and 2. The interaction term between earnings (and also for accruals and cash flows components) and CFO directorship is significant for models with robust standard errors clustered by firm and year, but becomes insignificant when firm-fixed effects are included. Overall, the results from table 11 provide some evidence that CFO outside directorship positively affects earnings persistence.

[Insert table 11 about here]

3.5.2.1.3 The Dechow and Dichev (2002) Measure of Earnings Quality

My third measure of earnings quality is the method proposed by Dechow and Dichev (2002). They suggest that in contrast to high quality accruals that ultimately convert into cash, low quality accruals are less likely to be realized as cash. Following their argument, I propose that if outside directorship provides CFOs opportunities to learn and use their knowledge to better manage their own firm's financial reporting process, then the CFOs' own firms are less likely to have erroneous accruals. For the ease of interpretation, I multiply the accruals by -1; a

lower level of accruals volatility means a better earnings quality. The results are presented in panel A of table 12. Column 1 presents results with clustered standard errors at firm and year level, and column 2 includes firm-fixed effects with standard errors clustered at firm level. In contrast to my expectation but consistent with findings of Demerjian et al. (2010) and Francis et al. (2008), I find a negative coefficient on *CFO Directorship*, although this association is insignificant ($p > 0.10$ for both when firm-fixed effects are included and excluded). Several studies suggest that model-based accruals quality reflects large firm-specific factors, and are therefore are difficult to estimate (Dechow & Dichev 2002; Demerjian et al., 2012; LaFond, 2008; McNicholas, 2002). Dechow and Dichev's (2002) model does not allow the coefficient on current period cash flow to vary across firms, thereby omitting economic factors that may affect the relation between accruals and cash flows.

Francis et al. (2008) suggest that managerial skills are reflected more in firms that are more challenging to manage. To find such challenging firms where CFO skills are more valuable and therefore easier to detect the contributions made by CFOs towards earnings quality, I use a modified Jones model following Ball and Shivakumar (2006). Ball and Shivakumar (2006) use negative cash flow from operations to proxy for economic losses, and find that associations between accruals and cash flows vary between firms with positive and negative operating cash flows.[25] To incorporate for factors that may influence an association between accruals and cash flows from operation, I use loss as a partitioning variable and allow the coefficient to vary by negative or positive earnings. In other words, I estimate the Jones model by loss dummy, year and, industry.[26]

[25] See also Wysocki (2009) for a discussion on a number of innate factors that affect the relation between accruals and cash flows.

[26] To estimate the regression model, I require at least 10 observations in my sample.

The results from these specifications are reported in table 12 panel B. Columns 1 and 2 present results where the dependent variable is the absolute value of abnormal accruals in year t+1. As stated previously, for the ease of interpretation, I multiply all dependent variables in this table by -1 (i.e. a lower level of accruals means better quality). The coefficient on *CFO Directorship* is significantly positive in column 1, suggesting that outside board membership provides learning opportunities to CFOs. Columns 3 and 4 present results where the dependent variable is the 3-year average value of abnormal accruals. The coefficient on CFO Directorship is positively significant for both when firm-fixed effects are included and excluded ($p < 0.05$). Overall, the coefficient on *CFO Directorship* is positively significant in three out of four columns in table 12 panel B, suggesting that outside board memberships provide opportunities to gain accounting-related knowledge to CFOs and therefore increase their ability to manage the financial reporting process in their source firms.

[Insert table 12 about here]

3.5.2.2 Financial Policies

3.5.2.2.1 Adjustment Cost

Model 1 of table 13 presents results for the full sample. All models considered in table 13 include firm- and year-fixed effects regressions with robust standard errors clustered by firm. The coefficient on *Market Leverage* suggests an adjustment speed (λ) of 0.384 (1 – 0.616), which is similar to the adjustment speed of 0.38 (1 – 0.62) reported in Flannery and Rangan (2006). This suggests – both in my sample and in the Flannery and Rangan sample – that an

average firm adjusts approximately 38% towards its optimal capital structure and will reach its target in just over two and one-half years.

In model 2, I consider only a subsample of firms in which CFOs do not hold any outside directorships. Model 3 repeats the same analyses but only with the subsample of firms in which the CFOs also hold outside directorships. Here, the coefficient on market leverage is 0.476, which results in an adjustment speed of 0.524. In other words, firms with CFOs on outside boards adjust to optimal leverage almost 13 to 14% (0.524 – 0.391) faster than firms with CFOs not on outside boards.[27] The difference between the coefficient on market leverage in columns 2 and 3 is statistically significant ($p < 0.01$), and therefore the difference in the adjustment between the two groups of firms is significantly different. In column 4, I use lagged CFO outside directorships (i.e. t-1), and the adjustment speed (λ) is 0.591 compared to unreported adjustment speed of 0.40 for similar specification for firms whose CFOs do not hold any outside directorships. The difference between the coefficients on market leverage between the two subsamples is again statistically significant ($p < 0.01$).

The negative and significant coefficient on the interaction term in model 5 further substantiates that the difference between the adjustment speed between two sets of firms is economically significant; the magnitude of the interaction term is almost 11%. Overall, the results across all specifications provide strong evidence that outside board directorships of CFOs are important and provide a chance to network with other executives and directors and valuable resources to learn (McDonald, Khanna & Westphal, 2008). This source of information can be useful in implementing better strategies at the source firm, as evident from results of table 13 that CFOs with outside directorships are faster in returning to the optimal capital structure.

[27] I use the chow-test to determine whether two groups are same and find that two groups are not different with respect to variables included in the model.

[Insert table 13 about here]

3.5.2.2.2 Cash Flow Sensitivity of Cash

Table 14 reports the results of the cash flow sensitivity of cash analysis. All the models in table 14 include firm- and year-fixed effects. I calculate standard errors robust to heteroskedasticity and clustering by firm in each model. The sample of firms included in these regressions includes only manufacturing firms, which is consistent with Almeida et al.'s (2004) study. The primary explanatory variable is cash flow. A coefficient on cash flow reflects the cash flow sensitivity of cash holdings. A significantly positive coefficient on cash flow reflects that cash holdings of a firm is systematically related to cash flows. Model 1 of table 14 presents the results from the baseline regression model for the full sample. The coefficient on cash flow is positive and significant for the full sample, reflecting positive sensitivities of cash to cash flows. Model 2 presents results for firms in which CFOs do not hold any outside directorships. The coefficient on cash flow is positive and significant, consistent with the full sample. In model 3, I consider only those firms with CFOs holding outside board memberships. The coefficient on cash flow is negative and significant at the level of 10%.

Model 4 considers only the subsample of firms with above and model 5 considers only subsample of firms below the median level of total assets, where firms below the (above) median represent constrained (unconstrained) firms. Additionally, I include a dummy for CFO directorship and interaction between cash flow and the CFO directorship dummy to examine whether outside board membership of a CFO impacts the sensitivities of cash holdings to cash flows. The coefficient on cash flow for unconstrained firms is 0.481 ($p < 0.01$) and 0.206 ($p < 0.01$) for constrained firms, suggesting that cash holdings of both these sample of firms are

sensitive. These results are similar to what Almeida et al. (2004) find, with the exception of a significant coefficient for an unconstrained sample in this paper, as opposed to an insignificant coefficient in Almeida et al. (2004). Turning to the variable of interest, the coefficient on *CFO Directorship* is significant for constrained firms but insignificant for unconstrained firms. This suggests that, generally speaking, when firms have no constraints, CFO ability and knowledge do not impact changes in cash holdings. In contrast, a negative and significant coefficient on *CFO Directorship* for constrained firms suggests that CFO ability reduces the volatility in cash holdings when firms are cash flow constraint.

Again, turning to my variable of interest, the interaction between *Cash Flow* and *CFO Directorship*, I find that the interaction term is significantly, negatively associated with change in cash flow for both the constrained and unconstrained samples. This indicates the incremental effect of CFO outside board membership on cash flow; a negative and significant sign on the interaction term suggests that outside board membership of CFOs reduces the sensitivity of cash holding to cash flow shocks. The sum of the coefficients $\beta_{Cash\ Flow} + \beta_{Cash\ Flow\ *\ CFO\ Directorship}$ at the bottom of the table indicates the incremental effect of CFO outside board membership on cash flow sensitivity of cash. If outside board memberships provide opportunities to acquire skills and knowledge to CFOs that in turn can be used to better manage cash holdings, then I expect the sum of $\beta_{Cash\ Flow} + \beta_{Cash\ Flow\ *\ CFO\ Directorship}$ to be insignificant. The F-test for joint coefficient for model 4 and 5 is insignificant, which suggests that CFO outside directorship reduces the sensitivity of cash holding to cash flow shocks. In model 6, I augment the base model by including additional variables following Almeida et al. (2004). In addition to Almeida et al.'s variables, I also include CFO age to proxy for CFO experience. Almeida et al. also consider a two-stage instrumental variable approach in which cash flow is instrumented by 2 lags of net

plant, property and equipment, lagged acquisitions, lagged working capital, lagged short-term debt, lagged sales growth, and industry dummies. The results for the second stage are presented in column 8. For brevity, I show only results for constrained firms. The coefficient on cash flow is positive, but the interaction between cash flow and CFO outside directorship is negatively significant, suggesting that firms whose CFOs also hold outside directorships are less sensitive to the volatilities of cash flow. The F-test on the joint coefficient of *Cash Flow* + *Cash Flow* * *CFO Directorship* is insignificant, consistent with models 4 and 5. Overall, the results from table 14 suggest that outside board memberships provide CFOs new insights and ultimately impact their ability to better manage cash flows and take advantage of growth opportunities.

[Insert table 14 about here]

3.5.2.2 Optimal Directorships

To assess whether multiple directorships of the CFO have a positive effect on the quality of accounting and financial policies until a certain number of outside directorships and have diminishing effect after that point, I include a squared term of directorships in the model. The turning point (or maximum of the function) is always achieved at the coefficient on (*No of CFO directorships*) over twice the absolute value of the coefficient on (*No of CFO directorships*)^2. In equation (8), β_1 is the coefficient on the CFO's outside directorship obtained from the modified equation (6) appended with the square term of the CFO's outside directorship that is represented as β_2 in equation (8), as shown below:

$$AQ \text{ or } FP = \beta_0 + \beta_1 \, No \text{ of Outside Directorships} + \beta_2 \, (No \text{ of Outside Directorships})^2 + \lambda' \, Other \text{ Control Variables} + \varepsilon \quad (8)$$

where AQ is the accounting quality and FP is financial policies. The other control variables in equation (8) are defined as above. The equation below provides the optimal number of directorships for the CFO that will have the most positive impact of the quality of earnings and financial practices. Core, Holthausen, and Larker (1999) suggest that CEO pay is excessive and board monitoring is ineffective in firms in which board members are busy (i.e. they hold more than three directorships). Furthermore, NASD (2006) also recommends that senior corporate executives and CEOs should not hold more than three outside directorships. The optimal number of outside directorships for CFOs is an empirical question. It can be represented as follows:

$$x^* = |\beta_1/2\beta_2| \quad (9)$$

Table 15 presents the results of the non-linearity of CFO directorships on accounting quality in panel A and financial policies in panel B. Columns 1 and 2 of panel A consider restatements as the dependent variable. The coefficient on the number of outside directorships (β_1) is negative (p-value equals 0.13), while the coefficient on the square of the number of outside directorships (β_2) is positive, suggesting non-linear effects of outside directorships. However, the results in the restatement specifications (both in columns 1 and 2) are insignificant.[28] In column 3, I consider a modified Jones model, and the results show that coefficient on number of outside directorships (β_1) is positive and significant, while the coefficient on the square the number of outside directorships (β_2) is negative and significant, implying non-linear benefits from the number of outside directorships. The results from column 3 continue to hold in column 4 after including a firm-fixed effect in the specification. In columns 4 and 5, I consider earnings persistence as the measure of accounting quality with three-year average future earnings as the dependent variable. The interaction term between the number of

[28] In my sample, almost 18 percent of CFOs, who sits on outside boards, holds more than one outside directorships.

CFO outside directorships and earnings is positive and significant ($p < 0.10$), while the interaction between the square of the number of directorships and earnings is negative and insignificant. This suggests that benefits of outsider directorships accrue only until certain board memberships and any additional directorships negatively impact the accounting quality of the CFO's source firm.

In panel B of table 15, I consider the impact of CFO outside directorships on financial policies. In column 1, I present the results from Flannery and Rangan's (2005) adjustment cost model. As mentioned previously, the λ (1 – coefficient on market leverage) is the adjustment speed. In other words, the lower the coefficient on market leverage, the higher a firm will return to its optimal capital structure. The coefficient on the interaction between market leverage and the number of CFO outside directorships reflects the benefits from holding an outside directorship, while the interaction between market leverage and the square of the number of CFO outside directorships reflects the non-linear benefits from outside directorships. The coefficient on *Market Leverage * No. of Outside Directorships* is negative and significant (λ is decreasing), suggesting that firms whose CFOs hold outside directorships adjust to optimal capital structure faster than firms whose CFOs do not hold outside board memberships. The interaction term of *Market Leverage * Square of No. of Outside Directorships* is positive and significant, which suggests a decline in benefits from an additional outside directorship after a certain point. In column 2, I consider the cash flow sensitivity of cash. The interaction term *Cash Flow * No. of Outside Directorships* is negative and significant, suggesting that the change in cash holdings is less sensitive to cash flow shocks for firms where CFOs holds outside directorships. However, the benefits from outside directorships are non-linear, as suggested by the positive and insignificant coefficient on *Cash Flow * Square of No. of Outside Directorships.*

Overall, the results from table 15 suggest that the benefits from outside directorships accrue only up to certain numbers and any additional outside board memberships after that will deteriorate the ability of CFOs in carrying out their responsibilities at their own firms. To find the optimal number of outside directorships, I use x^* defined in equation 9. Overall, the results from table 15 suggest an optimal number between one and two, and that a CFO should hold a maximum of two outside directorships at any given point.

[Insert table 15 about here]

3.5.2.4 Audit Committee and Similar Industry Directorships

To measure whether knowledge transfer is higher from the outside directorships of the CFO within a similar industry, I modify the equation (6) by including a dummy variable if at least one of the CFO's outside directorships is in the similar industry, using Fama and French's industry classification. The results for similar industry directorships are similar to the main results. Additionally, I consider whether audit committee board memberships provide additional knowledge. While considering audit committee directorships, I find that most of the CFOs who sit on the outside board are also on the audit committee. In other words, there is not enough variation in my sample to further evaluate any additional impact of audit committee directorships on accounting quality and cash flow management.

3.5.2.5 Additional Analyses

One possible concern about my results are with respect to causality. For example, do CFO outside directorships results in improved accounting quality and financial policies at the CFO source firm, or is this a correlation due to some other omitted factors, such as CEO outside

directorships? Galetkanycz and Boyd (2012) suggest that CEOs' outside directorships are positively associated with long-term performance. To control for whether CEO outside directorship are correlated with both improved accounting quality and financial policies, I added an indicator variable that equals one if the CEO is also on outside board in all my specifications and repeated my analyses. The reported results for both accounting quality and financial policies of CFO outside directorships hold even after including CEO outside directorships in the model. In addition, I do not find a significant association between CEO outside directorships and accounting quality except in the fixed-effect specification when 3-year accruals quality is the dependent variable. Turning to financial policies specifications, CEO outside directorship does not impact the sensitivities of cash holdings to cash flow shocks and negatively and weakly associated with the firm's ability to adjust to optimal capital structure. The results, after including CEO outside directorships in my models, highlight two important points: (1) CEO and CFO outside directorships are not systematically correlated. In other words, common firm-specific characteristics do not systematically impact the incidence of both CEO and CFO outside directorships.[29] (2) CFOs have more influence than CEOs on a firm's financial reporting quality (Jiang et al., 2010) and some financial policies.

Existing accounting literature finds that CFOs' inside board directorships affect accounting quality (Bedard, Hoitash, & Hoitash, 2013) and financial policies (Mobbs, 2011). To control for CFO inside directorships, I modify my specifications by including a dummy that equals 1 if a CFO sits on the board of his or her own firm and repeat my analyses. My restatement results are consistent with Bedard et al. (2013) that suggest that the likelihood of restatements is reduced when CFOs are also on the boards of their own firms. Overall, after including the CFO inside

[29] The correlation between CEO and CFO outside directorship is 0.0105

board directorships in my specifications, my reported results with my main variable of interest, CFO outside directorships, do not materially change.

Additionally, to control for possible unobserved factors that drive both the dependent variable and CFO outside directorships, I repeat my analyses for both accounting quality and financial policies using a sample of only those firms that experience a change in their CFOs' outside directorships during the sample time period. In other words, a firm in this analysis is included only if its CFO either accepts or quits his or her outside directorship during the sample period.[30] My results for both proxies of financial policies remains significant and consistent even after using this small subset of firms. With respect to accounting quality, my results of the restatement model become insignificant, but the sign on CFO outside directorships remains negative and consistent in all three specifications. This lack of significance may be due to the smaller number of observations, which could therefore reduce the power of the test. When using the 3-year average accruals quality as the dependent variable, I find that CFO outside directorships remain significantly, positively associated with accruals ($p < 0.05$) for both specifications with standard errors clustered by firm and year, and for fixed effect specification ($p=0.054$). Overall, the significant estimates using fixed effect, controlling for other managerial factors, and using a subset of firms that experience a change in CFO outside directorship suggest a causal explanation, where a CFO holding an outside board membership positively affects accounting quality and financial practices.

Another set of tests employ instrumental variables for CFO outside directorship. In the first-stage, CFO outside directorship is instrumented by lagged size, lagged ROA, lagged R&D, lagged leverage, lagged operating cash flow, abnormal return over last year, standard deviation

[30] There are 1206 instances CFOs accepting new outside directorships and 755 instances of CFOs quitting outside board memberships.

of operating cycle over past 5 years, dummy variable that equals 1 if CFO source firm has a restatement in last three-years, the percentage of years reporting losses in net income (IBC) over at least three of the last five years (t-5, t-1), year and industry dummies. In the second stage, for accounting quality, I use restatement and 3-years accruals as dependent variables. The coefficient on CFO outside directorship in is negatively significant ($p < 0.01$) for restatement regression. Additionally, I consider modified Jones model, and the results show that the coefficient on CFO outside directorship is positive and significant. To test the impact of CFO outside directorship on financial policies, I use Flanery and Rangan (2005) adjustment cost model and cash flow sensitivity of cash as the two measures. The results from instrumental variable approach are consistent with those reported in the paper; suggesting that the significant results between CFO outside directorship and accounting quality and the quality of financial policies are not driven by unobserved factors. Overall, the significant estimates using fixed effect, controlling for other managerial factors, two-stage instrumental variable approach, and using a subset of firms that experience a change in CFO outside directorship suggest a causal explanation, where a CFO holding an outside board membership positively affects accounting quality and financial practices.

3.6 CONCLUSION

This paper examines the importance of CFO outside board memberships on accounting quality and financial policies of the CFO's source firm. Several studies provide evidence on the outside directorships of CEOs (Finkelstein & Hambrick, 1996; Friedman & Singh, 1989; Malmendier & Tate, 2007; Rosenstein & Wyatt, 1990), but existing literature is largely mute with respect to CFO outside directorships. I find that outside board membership is positively associated with accounting quality and financial practices. My results are consistent with knowledge transfer/embeddedness theory, which suggests that outside directorships of executives provide opportunities to learn and network, which in turn brings value to the source firm.

Specifically, I consider the relation between CFO outside directorship and firms' accounting quality as measured by restatements, earnings persistence, one- and three-year future accruals quality, and financial practices as proxied by a firm's ability to adjust the capital structure to the optimal level and cash flow sensitivity of cash holdings. I find evidence that firms whose CFOs hold outside board memberships have better accruals quality, higher earnings persistence, and a lower likelihood of restatements. Furthermore, these firms reach their optimal capital structure more quickly, and their cash holdings are less sensitive to cash flow shocks than firms whose CFOs are not on outside boards.

Overall, the results suggest that outside board memberships are an important tool used to access the insights of other members on the board. They also provide opportunities to compare the source firm's policies with those of the directorship's firm. Additionally, these directorships enable CFOs to become more connected to other executives and directors, who can be a source of counsel. Therefore, CFOs who have access to the knowledge of other executives and directors

can learn from others, and eventually utilize their acquired knowledge to influence the source firm's policies.

Table 8: Variable Definitions

Variable	*Description*	*Definition*
TA	Total Accruals	Current year total accruals [ΔACT -ΔCHE - ΔLCT + ΔDLC - ΔDP] scaled by lagged assets
Assets	Firm Size	The natural log of the firm's assets (AT) reported at the end of year t
Sales	Total Sales	The sales of the firm (sale) reported for year t
Δ sales	Change in Sales	Change in Sales net of account receivable scaled by lagged assets
PPE	Property, Plant and Equipment	Current year level of property, plant and equipment (PPENT) scaled by lagged total assets
NI	Net Income	Net income (NI) scaled by lagged total assets
ΔWC	Working Capital Accruals	The change in working capital scaled by average total assets, where working capital is defined as follows: [-(RECCH + INVCH + APALCH + TAXACH + AOLOCH)].
OCF	Operating Cash Flow	Cash from operations (OANCF) scaled by average total assets (AT)
ΔREV	Change in Sales	Current year change in sales (SALE) scaled by average total assets (AT)
Restate	Restatement	An indicator variable that is equal to one if the firm announced a restatement in years t+1, t+2, t+3
Adjustment Costs	Adjustment costs of changing in leverage	Adjustment Costs is measured following Flannery and Rangan (2006) OLS model. The dependent variable is the next period market leverage and the key explanatory variable is the lagged dependent variable (or contemporaneous market leverage), which is instrumented using book-leverage. The adjustment cost is 1-coefficient (λ) on market leverage.
Δ Cash Holdings	Change in Cash Holdings	Cash holdings are defined as cash (CHE) and marketable securities (MSA) scaled by assets.
Earnings	Net Income	Earnings (IBC) is defined as net income before extraordinary items scaled by assets
Q	Tobin's Q	Tobin's Q is market to book value of assets
Leverage	Total Leverage	Current year leverage (DLC + DLTT) scaled by lagged assets
Volatility	Stock Volatility	Standard deviation of the daily return (RET) over last year
ROA	Return on Assets	Net income (NI) scaled by lagged total assets
R&D	Research and Development	Current year research and development (XRD) cost
ΔNWC	Change in Net Working Capital	Change in net working capital less cash
Δshort-term debt	Change in Short-term Debt	Change in debt that matures in 3 years or less
RET	Current Year Return	Current year stock return
PASTRET	Past Year Return	Past year stock return
Capital Expenditure	Capital Expenditure	Current year current expenditure
tenure	CFO's tenure with the firm	Number of years the CFO has been in the firm

Table 8: Continued

Variable	*Description*	*Definition*
CFO Age	CFO's Age	The age of the firm's CFO
σ(OCF)	Cash Flow Variability	The standard deviation of [cash flow from operation (OANCF)/average assets (AT)] over at least three of the last years (t-4,*t*)]
σ(Sales)	Sales Variability	The standard deviation of [sales(SALE)/average assets (AT)] over at least three of the last years (t-4,*t*)]
Oper Cycle	Operating Cycle	The natural log of the length of the firm's operating cycle, defined as sales turnover plus days in inventory [(Sale/360/average RECT) + (COGS/360)/average INVT)] and is averaged over at least three of the last five years (t-4,*t*).
Negative Earnings	History of Negative Earnings	The percentage of years reporting losses in net income (IBC) over at least three of the last five years (t-4,t).

Table 9 Panel A: Descriptive Statistics for Full Sample

Variable	Obs	Mean	Mdn	SD	25%	75%
CFO Directorship	71332	0.06	0.00	0.15	0.00	0.00
Size	71332	2958.67	91.68	17759.41	18.40	588.77
CFO Age	25244	48.15	48.00	7.38	43.00	53.00
$Accrals_{t+1}$	49556	0.61	0.56	0.35	0.32	0.86
3 years Avg $Accrals_{t+1,t+3}$	29185	0.66	0.58	0.41	0.38	0.82
Restate	24465	0.16	0.00	0.37	0.00	0.00
MDR	25244	0.18	0.09	0.22	0.00	0.27
Earnings	25244	-0.19	0.04	0.86	-0.15	0.11
MTB	25244	2.89	1.45	5.67	0.91	2.62
Depreciation	25244	0.05	0.04	0.04	0.02	0.06
Fixed Assets	25244	0.44	0.34	0.36	0.16	0.62
R&D	25244	0.12	0.04	0.22	0.00	0.13
Industry Leverage	25244	0.12	0.07	0.12	0.03	0.20
BDR	25244	0.25	0.14	0.44	0.01	0.32
Δ Cash Holdings	62719	-0.03	-0.02	0.96	-0.39	0.33
Cash Flow	62719	-0.10	0.08	0.66	-0.06	0.15
Tobin's Q	62719	2.82	1.54	4.60	1.10	2.57
Δ NWC	61997	-0.03	0.00	0.30	-0.05	0.04
Capital Expenses	62098	0.05	0.03	0.05	0.02	0.06
Short Term Debt	62719	0.01	0.00	0.13	-0.01	0.01
Acquisition	60512	0.02	0.00	0.05	0.00	0.00
Δ Sales Growth	24465	-0.03	-0.01	0.47	-0.15	0.12
Adj Ret	24465	0.10	-0.02	0.64	-0.28	0.28
ROA	24465	-0.02	0.03	0.20	-0.03	0.08
Earnings	24452	-0.02	0.03	0.20	-0.03	0.08
3 years Avg Earnings	15902	0.00	0.04	0.15	-0.01	0.08
Dichow Dichev Accruals Quality	5788	0.08	0.05	0.08	0.03	0.09
Big Auditor	24465	0.82	1.00	0.38	1.00	1.00
Sales Volatility	24465	0.20	0.14	0.19	0.07	0.25
OCF Volatility	24465	0.08	0.05	0.08	0.03	0.09
Oper Cycle	24465	0.20	0.13	0.24	0.08	0.23
Neg Earnings	24456	0.31	0.20	0.35	0.00	0.60

Note: This table provides summary statistics for full sample. All continuous variables are winsorized at the extreme 1%.

Table 9 Panel B: Summary Statistics by CFO Outside Directorship

		Outside Directorship			No Outside Directorship			
Variable	Obs	Mean	SD	Mdn	Mean	SD	Mdn	Differences
CFO Age	25244	51.33	6.77	51	47.93	7.37	48	3.4***
Restate	24465	0.14	0.35	0	0.16	0.37	0	-0.02**
Dichow Dichev	5733	0.05	0.04	0.04	0.08	0.08	0.05	-0.03***
MDR	25244	0.18	0.19	0.12	0.18	0.23	0.09	0
Δ Cash Holdings	62719	-0.01	0.73	0	-0.03	0.96	-0.02	0
$Accruals_{t+1}$	21922	0.56	0.009	0.52	0.58	0.002	0.54	-0.01**
3 years Avg $Accruals_{t+1,t+3}$	17422	0.57	0.01	0.53	0.62	0.00	0.56	-0.01***

Note: This table provides summary statistics separately for firms whose CFOs holds outside directorships and firms whose CFOs do not hold any outside directorships. The column Differences represent differences between variables for those two groups. *, **, *** denotes a difference in the mean under a t-test (Chi-Square test) with a two-tailed p-value of less than 0.10, 0.05, and 0.01, respectively for continuous (indicator) variables. All continuous variables are winsorized at the extreme 1%.

Table 9 Panel C: Selected Correlations

		1	2	3	4	5	6	7	8	9
1	CFO Directorship	1.000								
2	Restate	**-0.033**	1.000							
3	DD Accruals Quality	**0.060**	**0.032**	1.000						
4	Earnings	**-0.010**	**-0.041**	**-0.653**	1.000					
5	$Accruals_{t+1}$	**0.018**	**-0.017**	**-0.175**	**0.100**	1.000				
6	3 years Avg $Accruals_{t+1,t+3}$	0.010	**-0.016**	**-0.409**	**0.269**	**0.713**	1.000			
7	MDR	**-0.033**	**0.032**	**-0.043**	**0.031**	**-0.044**	**-0.046**	1.000		
8	Δ Cash Holdings	-0.004	0.001	-0.015	**0.033**	**0.039**	**0.025**	**-0.018**	1.000	
9	Size	**0.104**	**-0.023**	**-0.459**	**0.489**	**0.038**	**0.171**	**0.218**	**0.028**	1.000
10	Big Auditor	**0.015**	**-0.031**	**-0.282**	**0.279**	**0.053**	**0.137**	-0.001	**0.021**	**0.493**
11	Cash Flow	**-0.026**	**-0.031**	**-0.673**	**0.889**	**0.093**	**0.263**	**0.082**	**0.047**	**0.505**
12	MTB	**0.030**	**0.021**	**0.525**	**-0.659**	**-0.163**	**-0.247**	**-0.208**	0.007	**-0.405**
13	Sales Volatility	**-0.066**	**0.054**	**0.294**	**-0.150**	**-0.091**	**-0.157**	**-0.039**	-0.007	**-0.328**
14	OCF Volatility	-0.002	**0.040**	**0.654**	**-0.663**	**-0.091**	**-0.218**	**-0.114**	**-0.029**	**-0.490**
15	Oper Cycle	-0.005	**0.032**	**0.320**	**-0.394**	**0.026**	**-0.045**	**-0.082**	**-0.023**	**-0.346**
16	Adjusted Ret	**-0.012**	-0.008	**-0.040**	**0.138**	**-0.180**	**-0.112**	**-0.108**	**0.099**	0.007
17	Tobin's Q	**0.029**	**0.024**	**0.558**	**-0.686**	**-0.173**	**-0.267**	**-0.186**	0.006	**-0.406**

		10	11	12	13	14	15	16	17
10	Big Auditor	1.000							
11	Cash Flow	**0.260**	1.000						
12	MTB	**-0.185**	**-0.681**	1.000					
13	Sales Volatility	**-0.177**	**-0.132**	**0.126**	1.000				
14	OCF Volatility	**-0.304**	**-0.648**	**0.574**	**0.326**	1.000			
15	Oper Cycle	**-0.156**	**-0.403**	**0.278**	**0.249**	**0.431**	1.000		
16	Adjusted Ret	**0.017**	**0.122**	**0.181**	0.010	0.003	-0.002	1.000	
17	Tobin's Q	**-0.197**	**-0.708**	**0.985**	**0.137**	**0.588**	**0.275**	**0.182**	1.000

Note: This table provides pairwise correlations between selected variables. Variables that are statistically significant at the 5% level are presented in bold.

Table 10: Restatements and CFO Outside Directorship

	(1)	(2)	(3)
Dependent Variable: Restatement $_{t+1, t+3}$	Full Sample	Full Sample	Fixed Effect
CFO Directorship	-0.217*	-0.223*	-0.122
	(-1.78)	(-1.66)	(-0.88)
Size	0.0020	0.060**	0.387***
	(0.10)	(1.97)	(6.65)
Sales Volatility	0.269*	0.294**	-0.275
	(1.95)	(2.10)	(-1.31)
Cash Flow Volatility	0.372	0.116	-0.593
	(1.34)	(0.35)	(-1.26)
Oper Cycle	-0.136	-0.143	0.154
	(-1.09)	(-1.27)	(0.88)
Negative Earnings	0.628***	0.713***	0.835***
	(6.64)	(5.10)	(5.77)
Big Auditor	0.015	-0.209*	0.492***
	(0.19)	(-1.68)	(4.73)
Δ Sales Growth	-0.018	0.015	0.020
	(-0.88)	(1.05)	(0.55)
CFO Age	0.209	0.331**	1.095***
	(1.33)	(2.17)	(4.23)
Abnormal Return	-0.088***	-0.045	-0.010
	(-2.93)	(-1.03)	(-0.27)
Observations	24117	24456	8614
Fixed Effects	Ind/Year	Excluded	Firm
Pseudo R-square	0.060	0.01	0.014

Note: This table reports results from logistic regression of earnings restatement on managerial ability and controls for firm-specific characteristics and CFO outside board memberships. *Z-Statistics* are presented in parentheses and standard errors are clustered by firm in models 1 and 3. In model 2, standard errors are clustered by firm and year. Intercept is included, but not reported. The notation ***, **, and * denotes significance at the 1%, 5%, and 10% levels, respectively.

Table 11: Earnings Persistence and CFO Outside Directorship

	(1)	(2)	(3)	(4)
Dependent Variable: Earnings	Future Earnings$_{t+1}$		Average Future Earnings$_{t+1,t+3}$	
Earnings	0.601***	0.304***	0.457***	0.069***
	(19.30)	(16.92)	(13.05)	(6.00)
Earnings * CFO Directorship	0.193*	0.084	0.202**	-0.041
	(1.71)	(1.22)	(2.42)	(-0.93)
CFO Directorship	-0.021*	-0.012*	-0.020***	0.002
	(-1.84)	(-1.69)	(-3.00)	(0.46)
Size	0.002**	-0.024***	0.002**	-0.024***
	(2.54)	(-10.33)	(2.50)	(-16.60)
Sales Volatility	0.003	0.007	0.003	0.020***
	(0.35)	(0.82)	(0.31)	(3.54)
Cash Flow Volatility	-0.117***	0.145***	-0.148***	0.033*
	(-3.15)	(5.99)	(-5.00)	(1.91)
Oper Cycle	-0.055**	-0.024***	-0.056***	-0.022***
	(-2.26)	(-2.60)	(-2.64)	(-3.83)
Loss	-0.050***	0.072***	-0.058***	0.076***
	(-4.01)	(10.78)	(-4.82)	(17.49)
Big Auditor	0.005	-0.010**	0.000	-0.009***
	(0.85)	(-2.41)	(0.02)	(-3.19)
Δ Sales Growth	0.002	0.008***	-0.003	0.003**
	(0.32)	(4.38)	(-0.63)	(2.51)
CFO Age	-0.002	0.020*	-0.006	0.008
	(-0.35)	(1.87)	(-0.83)	(1.09)
Abnormal Returns	0.028***	0.020***	0.018**	0.010***
	(3.47)	(14.71)	(2.15)	(11.04)
Observations	14697	14697	11580	11580
Fixed Effect	Excluded	Firm	Excluded	Firm
R-square	0.161	0.100	0.170	0.129

Note: This table reports the results from OLS regressions between CFO outside directorships and earnings persistence for firms with positive earnings in year t. t-statistics are presented below the coefficients and are based on standard errors that are clustered by firm and year in specifications excluding firm fixed effects. Intercept is included, but not reported. The notation ***, **, and * denotes significance at the 1%, 5%, and 10% levels, respectively.

Table 12 Panel A: Accruals Quality and CFO Outside Directorship

	(1)	(2)
Dependent Variable: Accruals Quality	Full Sample	Full Sample
CFO Directorship	-0.005	-0.001
	(-0.89)	(-0.22)
Size	0.007***	0.014***
	(8.95)	(4.89)
Sales Volatility	-0.113***	-0.015
	(-2.98)	(-1.60)
Cash Flow Volatility	-0.075**	0.033
	(-2.00)	(1.38)
Oper Cycle	-0.014	0.035**
	(-1.61)	(2.57)
Negative Earnings	-0.010*	-0.001
	(-1.81)	(-0.12)
Big Auditor	0.002	0.002
	(0.33)	(0.55)
Δ Sales Growth	-0.001	-0.002
	(-0.93)	(-1.05)
CFO Age	-0.008	-0.010
	(-0.76)	(-0.71)
Abnormal Return	0.000	0.001
	(0.14)	(1.05)
Observations	6172	6172
Fixed Effect	Excluded	Firm
Adjusted R-square	0.192	0.026

Note: This table reports results from regressing the Dechow and Dichev (2002) measures of earnings quality on *CFO Directorship,* a dummy variable that equals one if the CFO of a firm holds outside board memberships. *t-Statistics* are presented in parentheses and standard errors are clustered by firm and year in specification excluding fixed effects. Intercept are included, but not reported. The notation ***, **, and * denotes significance at the 1%, 5%, and 10% levels, respectively.

Table 12 Panel B: Accruals Quality and CFO Outside Directorship

	(1)	(2)	(3)	(4)
Dependent Variable: Accruals Quality	Earnings Quality$_{t+1}$		Earnings Quality$_{t+1,t+3}$	
CFO Directorship	0.030*	0.010	0.039***	0.017**
	(1.64)	(1.10)	(2.66)	(2.33)
Size	-0.009***	0.126***	-0.003	0.201***
	(-2.64)	(29.72)	(-0.86)	(56.60)
Sales Volatility	-0.103***	0.056***	-0.183***	0.118***
	(-2.87)	(3.44)	(-3.46)	(8.55)
Cash Flow Volatility	0.077	-0.027	0.013	0.086**
	(1.35)	(-0.59)	(0.15)	(2.28)
Oper Cycle	0.108***	0.060***	0.104***	0.070***
	(4.59)	(4.27)	(4.01)	(5.81)
Big Auditor	0.017	0.009	0.017	0.011*
	(1.54)	(1.09)	(1.17)	(1.65)
Δ Sales Growth	-0.019***	-0.018***	-0.010	-0.004
	(-2.77)	(-5.30)	(-0.96)	(-1.33)
CFO Age	-0.003	-0.026	-0.023	-0.084***
	(-0.15)	(-1.36)	(-0.87)	(-4.95)
Abnormal Return	-0.083***	-0.053***	-0.057***	-0.019***
	(-4.79)	(-20.20)	(-2.69)	(-8.78)
Observations	21922	21922	17422	17422
Fixed Effect	Excluded	Firm	Excluded	Firm
Adjusted R-Square	0.046	0.087	0.028	0.210

Note: This table reports the results from the OLS regression of modified accruals quality on CFO Directorship, a dummy variable that equals one if the CFO of a firm holds outside board memberships. *t-statistics* is reported in parentheses below coefficients and are based on robust standard errors that are clustered by firm and year in specifications excluding firm-effects. Intercept is included, but not reported. The notation ***, **, and * denotes significance at the 1%, 5%, and 10% levels, respectively.

Table 13: Partial Adjustment Model and CFO Outside Directorship

	(1)	(2)	(3)	(4)	(5)
Dependent variable: Market Leverage $_{t+1}$	Full Sample	No Outside Directorships	Outside Directorships	Lagged Outside Directorship	Interaction Model
Market Leverage	0.616***	0.609***	0.476***	0.409**	0.621***
	(24.90)	(24.32)	(3.32)	(2.48)	(24.58)
Earnings	-0.005*	-0.006**	0.024**	0.006	-0.005*
	(-1.73)	(-1.99)	(2.21)	(0.60)	(-1.74)
Market-to-Book	0.001**	0.001**	0.000	-0.005**	0.001**
	(2.07)	(2.27)	(0.10)	(-2.40)	(2.11)
Depreciation	-0.028	-0.058	0.175	0.017	-0.031
	(-0.56)	(-1.13)	(1.02)	(0.06)	(-0.62)
Size	0.026***	0.028***	-0.005	-0.013	0.026***
	(9.90)	(10.19)	(-0.39)	(-0.86)	(9.71)
Fixed Assets	0.020**	0.025***	-0.056	-0.113**	0.019**
	(2.18)	(2.71)	(-1.26)	(-2.14)	(2.14)
R&D	0.017*	0.017	0.036	0.017	0.017
	(1.68)	(1.54)	(1.26)	(0.37)	(1.63)
Industry Leverage	0.039*	0.047**	-0.137	-0.095	0.037*
	(1.75)	(2.01)	(-1.48)	(-0.89)	(1.66)
CFO Age	0.005	0.006	0.058	0.043	0.007
	(0.58)	(0.59)	(0.73)	(0.79)	(0.78)
CFO Directorship					0.015***
					(2.81)
Market Leverage * CFO Directorship					-0.112***
					(-3.64)
Adjustment Speed $\lambda=(1 - \beta_{\text{Market Leverage}})$	0.384	0.391	0.524	0.591	
Observations	24376	22750	1369	988	24376
Fixed Effects	Firm/Year	Firm/Year	Firm/Year	Firm/Year	Firm/Year
Adjusted R-square	0.285	0.285	0.124	0.134	0.285

Note: This table reports results of market leverage partial adjustment models using two-stage least square instrumental variable approach following Flannery and Rangan (2006). The dependent variable is next period market leverage. All regressions include firm and year fixed effects. The key explanatory variable is the lagged dependent variable (current market leverage), which is instrumented using book leverage. The adjustment speed, λ, is one minus the coefficient estimate on market leverage. Intercept is included, but not reported. *Z-statistics* are presented in parentheses and standard errors are robust to heteroskedasticity and clustered by firm. Column 4 reports results with *CFO Directorship* at time t-1. The notation ***, **, and * denotes significance at the 1%, 5%, and 10% levels, respectively. The difference on the coefficient of Market Leverage between column 2 and 3 is statistically significant

Table 14: Cash Flow Sensitivity of Cash

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependent Variable: Change in Cash Flow	Full Sample	Unconstrained Firms	Constrained Firms	No Outside Directorships	Outside Directorships	Unconstrained Firms	Constrained Firms	IV (Constrained)
Cash Flow	0.227***	0.635***	0.192***	0.256***	-0.253	0.676***	0.211***	0.055
	(6.60)	(5.00)	(4.91)	(7.23)	(-1.32)	(5.30)	(5.44)	(0.22)
Tobin's Q	0.020***	0.008	0.021***	0.022***	-0.025	0.008	0.021***	0.007
	(4.78)	(1.17)	(4.06)	(5.01)	(-0.62)	(1.13)	(4.09)	(0.54)
Size	-0.067***	-0.093***	-0.025	-0.070***	-0.147	-0.090***	-0.026	0.140
	(-4.62)	(-4.17)	(-1.02)	(-4.58)	(-0.97)	(-4.02)	(-1.08)	(1.58)
CFO Directorship						0.025	-0.141*	-0.069
						(0.74)	(-1.77)	(-0.66)
Cash Flow * CFO Directorship						-0.528**	-0.254***	-0.298***
						(-2.47)	(-3.34)	(-2.91)
Δ NWC								-0.160
								(-0.81)
Capital Expenditures								-4.790***
								(-8.35)
Δ Short-term Debt								-0.746***
								(-2.72)
Acquisition								-4.595***
								(-10.71)
CFO Age								-0.059
								(-0.54)
F-Test: Cash Flow + Cash Flow * CFO Directorship						0.148	-0.043	-0.243
						(0.521)	(0.581)	(0.235)
Observations	24299	12150	12149	22865	1434	12150	12149	5614
Fixed Effect	Firm/Year	Firm/Year	Firm/Year	Firm/Year	Firm/Year	Firm/Year	Firm/Year	Firm/Year
Adjusted R-Square	0.016	0.023	0.016	0.016	0.063	0.023	0.018	0.084

Note: This table reports the results from OLS regressions of change in cash holdings on cash flow and interaction on *Cash Flow * CFO Directorship* for sample of manufacturing firms (SICs 2000 to 3999). All regressions include firm and year fixed effects. Unconstrained (Constrained) firms are those with total assets above (below) the sample median. Model 8 displays results for IV estimation of the augmented model in Table IV of Almeida, Campello and Weisbach (2004). The instruments are 2 lags of net plant, property and equipment, lagged acquisitions, lagged working capital, lagged short-term debt, lagged sales growth, and industry dummies. The standard errors are adjusted for heteroskedasticity and clustered by firm. *t-statistics* are presented in parentheses below coefficients. Intercept is included, but not reported. All tests are two-sided and the notation ***, **, and * denotes significance at the 1%, 5%, and 10% levels, respectively.

Table 15 Panel A: Accounting Quality and Non-Linearity of Outside Directorship

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent Variables	Restatement		Accruals Quality $_{t+1, t+3}$		Average Future Earnings $_{t+1, t+3}$	
No. of Outside Directorship	-0.2053	0.0283	0.037**	0.017*	-0.019***	0.002
	(-1.49)	(0.15)	(2.44)	(1.84)	(-3.20)	(0.43)
Square of No. of Outside Directorships	0.0157	-0.0892	-0.005	-0.002	0.002*	-0.001
	(0.59)	(-1.02)	(-1.16)	(-1.33)	(1.78)	(-0.94)
Earnings					0.444***	0.062**
					(11.80)	(2.16)
No. of Outside Directorships * Earnings					0.176*	-0.071
					(1.67)	(-1.20)
Square of No. of Outside Directorships * Earnings					-0.010	0.030
					(-0.25)	(1.57)
Size	0.0599**	0.3862***	-0.003	0.201***	0.002**	-0.024***
	(1.98)	(6.65)	(-0.85)	(23.13)	(2.45)	(-8.13)
Sales Volatility	0.2940**	-0.2767	-0.183***	0.118***	0.005	0.020**
	(2.09)	(-1.32)	(-3.46)	(3.93)	(0.58)	(2.16)
Cash Flow Volatility	0.1199	-0.6065	0.013	0.087	-0.146***	0.026
	(0.36)	(-1.29)	(0.15)	(0.94)	(-4.75)	(0.65)
Oper Cycle	-0.1428	0.1613	0.104***	0.070**	-0.058**	-0.021*
	(-1.26)	(0.92)	(4.00)	(2.37)	(-2.49)	(-1.78)
Loss	0.7140***	0.8386***			-0.057***	0.079***
	(5.10)	(5.79)			(-4.78)	(7.50)
Big Auditor	-0.2099*	0.4925***	0.017	0.011	0.000	-0.008
	(-1.68)	(4.74)	(1.17)	(0.80)	(0.02)	(-1.51)
Δ Sales Growth	0.0154	0.0196	-0.010	-0.004	-0.004	0.002
	(1.02)	(0.55)	(-0.96)	(-1.06)	(-0.92)	(0.89)
CFO Age	0.3323**	1.0951***	-0.023	-0.084***	-0.008	0.008
	(2.17)	(4.23)	(-0.87)	(-2.74)	(-1.10)	(0.57)
Abnormal Return	-0.0451	-0.0098	-0.057***	-0.019***	0.018**	0.009***
	(-1.02)	(-0.27)	(-2.69)	(-6.32)	(2.03)	(3.79)
Observations	24456	8614	17422	17422	11580	11580
Fixed Effects	Excluded	Firm	Excluded	Firm	Excluded	Firm
Adjusted R or Pseudo R-Square	0.01	0.014	0.028	0.210	0.153	0.121

Table 15 Panel B: Cash Flow Management and Non-Linearity of Outside Directorships

	(1)		(2)
Dependent variable: Market Leverage$_{t+1}$		Dependent variable: Change in Cash Flow	IV (Constrained)
Market Leverage	0.612***	Cash Flow	0.034
	(26.42)		(0.14)
No. of Outside Directorship	0.020***	No. of Outside Directorship	0.116
	(2.84)		(0.58)
Square of No. of Outside Directorships	-0.006**	Square of No. of Outside Directorships	-0.123
	(-2.21)		(-0.96)
Market Leverage * No. of Outside Directorship	-0.173***	Cash Flow * No. of Outside Directorship	-0.247
	(-3.59)		(-1.60)
Market Leverage * Square of No. of Outside Directorships	0.060***	Cash Flow * Square of No. of Outside Directorships	-0.023
	(2.61)		(-0.26)
Earnings	-0.006*	Tobin's Q	0.006
	(-1.92)		(0.48)
Market-to-Book	0.001*	Size	0.147*
	(1.89)		(1.69)
Depreciation	-0.030	Δ NWC	-0.148
	(-0.60)		(-0.75)
Size	0.027***	Capital Expenditures	-4.807***
	(9.86)		(-8.38)
Fixed Assets	0.020**	Δ Short-term Debt	-0.741***
	(2.18)		(-2.70)
R&D	0.016	Acquisition	-4.598***
	(1.59)		(-10.71)
Industry Leverage	0.041*	CFO Age	-0.061
	(1.85)		(-0.56)
CFO Age	0.007		
	(0.79)		
Observations	24376	Observations	5614
Fixed Effects	Firm/Year	Fixed Effects	Firm/Year
Adjusted R-square	0.287	Adjusted R-square	0.083

Note: This table reports the results from the OLS regression of the non-linear effect of the number of CFO outside directorships on accounting quality in panel A and cash flow management in panel B. In panel A, *t-statistics* is reported in parentheses below coefficients and are based on robust standard errors that are clustered by firm and year in specifications excluding firm-effects. In panel B, the standard errors are adjusted for heteroskedasticity and clustered by firm. Intercept is included, but not reported. The notation ***, **, and * denotes significance at the 1%, 5%, and 10% levels, respectively.

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