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Internal Governance and Real Earnings Management

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Abstract

We examine whether internal governance affects the extent of real earnings management. Internal governance refers to the process through which key subordinate executives provide checks and balances in the organization and affect corporate decisions. Using the number of years to retirement to capture key subordinate executives' incentives and using their compensation relative to CEO compensation to capture their influence within the firm, we find that the extent of real earnings management decreases with key subordinate executives' horizon and influence. In cross-sectional analyses, we find that the impact of internal governance is more important for firms with more complex operations where key subordinate executives' contribution is higher, is enhanced by the effectiveness of other governance mechanisms, and is stronger in the post-SOX period, when real earnings management is likely more prevalent. The results are also robust to controlling for potential endogeneity concerns and to using alternative measures of internal governance. This paper contributes to the literature by examining how internal governance affects the extent of real earnings management and by shedding light on how the members of the management team work together in shaping financial reporting quality.

Key words: internal governance, real earnings management

JEL codes: G32, M40

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1 Introduction

We examine whether internal governance affects the extent of real earnings management.[1] Internal governance refers to the process through which key subordinate executives provide checks and balances in the organization and affect corporate decisions.[2] We focus on key subordinate executives, or specifically the top five executives with the highest compensation other than the CEO, because we hypothesize that they are the most likely group of employees that have both the incentive and the ability to influence the CEO in corporate decisions. As argued in Acharya et al. (2011), key subordinate executives have strong incentives not to take actions that increase short-term performance at the expense of long-term firm value. This tradeoff between current and future firm value is particularly salient in the case of real earnings management as compared to accrual earnings management because overproduction and cutting of R&D expenditures are costly and can reduce the long-term value of the firm (e.g., Graham et al. 2005). Thus we focus on real earnings management in this paper.

The motivation for the research question is two-fold. First, the majority of the papers in the literature explicitly or implicitly assume that the CEO is the sole decision maker for financial reporting quality, which includes both accrual and real earnings management.[3] Focusing only on the CEO might not provide a complete picture because firm management is typically a shared

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[1] Following Roychowdhury (2006), we define real earnings management as "management actions that deviate from normal business practices, undertaken with the primary objective of meeting certain earnings thresholds (p.336)." Of course, real earnings management could also be undertaken to achieve other earnings management objectives at the same time – to increase bonus, to smooth earnings, to avoid covenant violations etc. Some papers in the literature refer to "real earnings management" as "real activities management."

[2] We use the term "internal governance" to be consistent with some of the closely related studies (e.g., Acharya et al. 2011). In some studies (e.g., Gillan 2006), board monitoring is also referred to as internal corporate governance and the monitoring by shareholders, such as institutional investors and blockholders, is referred to as external corporate governance. In this paper, we follow Brickley and Zimmerman's (2010) advice and do not distinguish between internal versus external governance. We refer to governance mechanisms other than the monitoring by the key subordinate executives broadly as "other governance mechanisms."

[3] Some papers pool all top five executives covered in the ExecuComp database together and examine their collective influence on financial reporting (e.g., Cheng and Warfield 2005). In such cases, it is unclear whether the documented effect is driven by the CEOs or the CEOs and CFOs. The distinct impact of other executives is not identified in such analyses.

effort of all top executives (Finkelstein 1992). Recently the literature starts to examine how the characteristics of CFOs affect the quality of financial reporting (e.g., Jiang et al. 2010; Feng et al. 2011). However, the impact of other executives has been largely overlooked. While CFOs are primarily responsible for the preparation of financial statements and the quality of accruals in financial reporting, other executives play a more important role in real activities such as sales promotions, production volumes and R&D expenditures. As discussed briefly below and in detail in Section 2, recent studies argue that subordinate executives usually have longer decision horizons and they can influence corporate decisions through various means. We hypothesize that differential preferences arising from differential horizons can affect the extent of real earnings management.

Second, while there are studies focusing on the impact of various corporate governance mechanisms on corporate decisions (e.g., board independence and institutional ownership), little is known about whether there are checks and balances within the management team. This lack of knowledge is an important omission because control is not just imposed from the top-down or from the outside, but also from the bottom-up (Fama 1980).

Key subordinate executives usually care more about long-term firm value than the CEO for several important reasons. First, as argued in Acharya et al. (2011), some of these executives have the desire to become the CEO in the future. As candidates for the CEO position in the future, key subordinate executives care about cash flows that the firm can generate in the future, which are in turn a function of the firm's current investments. As a result, these executives are less likely to sacrifice long-term investments to meet short-term earnings targets. Second, key subordinate executives have more to lose from corporate underperformance. They are usually younger, have more remaining years of employment and thus care more about their reputation in

the job market. Prior research indicates that corporate operating failures due to a lack of long-term investments or financial reporting failures have a disproportionate impact on subordinate executives' welfare than on CEOs' (e.g., Feng et al. 2011).

Not only do key subordinate executives have incentives to increase long-term firm value, they also have the means to influence corporate decisions toward their preferences. Prior research argues that because key subordinate executives' effort is an important determinant of current cash flows and the CEO's welfare, the CEO will consider key subordinate executives' preferences when making important corporate decisions; otherwise, subordinate executives might shirk, hence reducing current and future cash flows and the CEO's welfare (Allen and Gale 2000; Acharya et al. 2011).

The above discussion implies that the effectiveness of internal governance depends on the decision horizon of key subordinate executives and the influence they have on the CEO. In this paper, we use the number of years until retirement age (assumed to be 65) to capture these executives' decision horizon and the level of their compensation relative to the CEO's compensation to capture their influence on the CEO. We expect that the longer the horizon and the higher the relative compensation, the more effective is internal governance, and the lower the extent of real earnings management. Of course, subordinate executives might have the same incentives as the CEO to increase short-term performance at the expense of long-term value. Or, subordinate executives might be afraid of the consequences of disobeying the CEO's order (e.g., being demoted or fired) and hence do not exert discipline on the CEO.[4] In addition, it is possible that the key subordinate executives are in a tournament or competition for the CEO's job with external candidates; as a result, they could undertake real earnings management to increase short-

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[4] See Feng et al. (2011) for evidence on the role of powerful CEOs in influencing CFOs to undertake material accounting manipulations.

term earnings and/or to curry favor with the CEO who likely plays an important role in selecting his/her successor. These possibilities introduce tension into our research question and thus whether internal governance can effectively reduce the extent of real earnings management is an empirical question.

We test our hypothesis using 8,061 firm-year observations from the S&P 1500 firms in the period 1993-2011. The empirical results are consistent with our prediction. We find that the extent of real earnings management decreases with subordinate executives' horizon and relative compensation. The results hold after we control for CEO and firm characteristics that might affect the extent of real earnings management (e.g., CEO horizon, CEO compensation structure, firm age, analyst coverage, firm size, firm performance, leverage, firm growth opportunities, other governance mechanisms), when we use alternative measures of internal governance, and when we exclude the CFO from the list of key subordinate executives.

To corroborate the inference from the main analyses, we conduct a series of cross-sectional analyses. First, key subordinate executives' ability to influence the CEO's decision hinges on their contribution to firm performance and we argue that their contribution is greater when the firm's operations are more complex. Accordingly, we expect that the impact of internal governance is higher when operation complexity is higher. We use industry R&D intensity and a common factor based on the number of geographical segments, geographical sales concentration, and foreign sales to capture the complexity of a firm's operations. We find results consistent with our prediction that the impact of internal governance is higher when operation complexity is higher. Second, we find that the effect of internal governance is stronger when board monitoring is more effective (higher board independence) and when institutional ownership is higher. This result indicates that other effective governance mechanisms can enhance subordinate executives'

ability to influence the CEO's decisions.

We also conduct a series of additional tests to ensure the robustness of our results and to provide additional insights. First, we examine the impact of internal governance on accrual earnings management. Ex-ante, whether non-CFO subordinate executives can influence the extent of accrual earnings management is unclear. On one hand, key subordinate executives do not play a direct role in accrual management because unlike the CFO, they are not directly involved in the financial reporting process. On the other hand, they likely have an important influence over the corporate culture and the overall corporate attitude toward earnings management. If the key subordinate executives focus on the long-term value of the firm, their preference might manifest in better financial reporting quality and less accrual-based earnings management. We do not find robust evidence that subordinate executives have a significant impact on the extent of accrual earnings management after considering the interrelationship between real and accrual earnings management, consistent with these executives playing a more limited role in the financial reporting process.

Second, we recognize that our analyses might be subject to endogeneity concerns because firms' internal governance is arguably endogenously determined. We mitigate this concern by using the lagged values of internal governance in all our analyses and including a set of control variables that are likely related with both internal governance and the extent of real earnings management. Our cross-sectional analyses also mitigate this concern because it is arguably harder for an omitted variable to explain both our main and cross-sectional findings. In an additional analysis, we use an instrumental variable approach to further control for potential endogeneity concerns of internal governance. Specifically, following related prior studies, we use the number of named executives in the proxy statement and an indicator for outside CEOs as

instruments in a 2SLS approach to address this issue. Our inferences remain the same.

Third, in the main analyses, we use the relative compensation of the key subordinate executives to capture their ability to influence the CEO on key corporate decisions. In a sensitivity test, we use an alternative measure: whether the subordinate executives sit on other companies' board. The inferences are unchanged. Fourth, we find that our results are stronger in the post-SOX period when real earnings management is likely more prevalent than in the pre-SOX period. Lastly, in a falsification test, we find that internal governance is not correlated with the extent of real earnings management in a sample where we expect not to find results, further strengthening our main inference.

This paper contributes to the literature in two important ways. First, this paper is the first to examine the association between internal governance and the extent of real earnings management. This examination is important as it sheds light on how the members of the management team work together and shape financial reporting. This paper differs from and complements studies on the impact of CFOs' characteristics on accrual quality or the likelihood of earnings restatements/frauds by focusing on all key subordinate executives and by focusing on real earnings management.

Second, our examination of internal governance helps provide a more complete picture of how firms work. Unlike prior research which generally views top executives as a unified team, this paper provides evidence that key subordinate executives can serve an important monitoring role and that effective internal governance can reduce the extent of CEOs' myopic behavior. Our study answers Fama's (1980) call for research on internal governance. He argues that while each manager is concerned with the performance of others in the firm and as a consequence, undertakes certain monitoring of other managers, both above or below, "less well appreciated,

however, is the monitoring that takes place from bottom to top" (p.293).

The remainder of the paper is organized as follows. Section 2 provides a summary of prior research and develops hypotheses. Section 3 describes the sample and data and presents the research design. Section 4 reports the main analysis of the impact of internal governance on the extent of real earnings management, and cross-sectional analyses. Section 5 reports additional analyses, and Section 6 concludes.

2   Literature Review and Hypothesis Development

2.1   Literature Review

We rely and build on two steams of the earnings management literature: the impact of individual executives on financial reporting quality and real earnings management.

One of the fundamental drivers of earnings management is the pressure on managers to deliver short-term performance that is used in contracting and firm valuation. See, for examples, DeFond and Park (1997) on the pressure related to job security, Matsunaga and Park (2001) on the pressure related to meeting earnings benchmarks, Stein (1988) on takeover pressure, and Bartov et al. (2002), Kasznik and McNichols (2002), and Bhojraj and Libby (2005) on the capital market pressure to deliver short-term performance. Given the vast literature on earnings management, we do not provide a detailed literature review here and we refer readers to the review papers that discuss in greater detail the demand for earnings management and how managers benefit from this activity (e.g., Schipper 1989; Healy and Wahlen 1999; Dechow and Skinner 2000; Fields et al. 2001; Dechow et al. 2010).[5]

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[5] While the literature focusses primarily on accrual-based earnings management, the argument on the demand for and the benefit (to managers) of earnings management apply to real earnings management as well. Indeed, the recent development of the real earnings management literature builds on prior studies of accrual-based earnings management.

A recent survey study, Dichev et al. (2013), concludes that "about 20% of firms manage earnings to misrepresent economic performance, and for such firms 10% of EPS is typically managed." Using a different research methodology, Dyck et al. (2013) also conclude that earnings management and accounting frauds are prevalent.[6] In sum, prior work has documented the incentive for and the existence of earnings management.

Most prior studies tend to focus on the management team as a whole or solely on the CEO as the person(s) held primarily responsible for earnings management within the firm. Recently, the literature starts to examine the impact of CFOs on earnings quality. For example, Geiger and North (2006) isolate the impact of CFOs by focusing on the appointment of new CFOs. They find that the appointment of new CFOs is associated with a decrease in discretionary accruals and that the result is largely driven by new CFOs who are hired from outside. Focusing on CFO directors, Bedard et al. (2011) find that firms with CFOs who sit on their own board exhibit higher reporting quality (e.g., lower likelihood of internal control weaknesses, lower likelihood of restatements, and higher accruals quality). Ge et al. (2010) find that CFO style matters for various accounting choices, such as discretionary accruals, the likelihood of meeting or just beating earnings expectations, and the likelihood of restatements.[7]

There are also studies contrasting the impact of CFOs' incentives with that of CEOs' incentives on earnings management. Jiang et al. (2010) focus on the impact of CFOs' and CEOs'

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[6] Whether the prevalence of myopic behavior implies widespread market inefficiency is an interesting question. It is certainly possible that myopic behavior, including earnings management, is due to market inefficiency; investors are naïve and fixate on reported earnings. However, myopic behavior can also occur even when the capital markets are efficient. Stein (1989) develops a model of inefficient managerial behavior in the face of a rational stock market. He shows that when investors are sophisticated, in equilibrium, investors rationally expect managers to engage in earnings management, which they do. In other words, if the market has rational expectations of earnings management behavior but cannot completely undo earnings management of individual firms, it is optimal for market participants to price the reported earnings by adjusting for the impact of earnings management. Given investors' pricing behavior, managers find it optimal to manage earnings.
[7] Ge et al. (2010) capture the effect of CFO style by using a fixed effect model to track CFOs who work in multiple companies over their sample period.

equity incentives on earnings management. They find that the magnitude of accruals and the likelihood of meeting or just beating analysts' forecast are more sensitive to CFOs' than to CEOs' equity incentives in the pre-SOX period. In contrast, Feng et al. (2011) find that while CEOs of firms that are involved in material accounting manipulations (manipulations that violate GAAP) have higher equity incentives than their counterparts in other firms, CFOs of these accounting manipulation firms have similar levels of equity incentives as their counterparts in other firms. Despite their lack of incentives, CFOs who are involved in material accounting manipulations suffer substantial losses. Feng et al. conclude that the direct financial gain is not the main motivation for CFOs to be involved in earnings manipulation. Rather, CFOs likely succumb to powerful CEOs' pressure to manipulate financial statements.

We extend this line of research by focusing on a broader set of key subordinate executives, including not only CFOs but also other top executives, and examine their impact on the extent of real earnings management. We focus on real earnings management because the tradeoff between increasing short-term performance and increasing long-term firm value is more salient for real earnings management than for accrual management. For example, cutting R&D expenditures now to meet current year's earnings targets will lead to lower long-term investment and reduce the company's ability to compete in the product markets and to generate profits in the future. In addition, key subordinate executives have more direct control and influence over real activities, for example, R&D expenditures, production volumes, and sales decisions, than over accruals based earnings management.

To our knowledge, ours is the first study that explicitly examines the impact of individual subordinate executives on the extent of real earnings management. The extant literature on real earnings management has focused primarily on documenting the existence of real earnings

management. For example, Graham et al. (2005) report that 80 percent of surveyed CFOs stated that, in order to deliver earnings, they would decrease research and development (R&D), advertising, and maintenance expenditures, while 55 percent said they would postpone a new project, both of which are real activities manipulation. Roychowdhury (2006) documents the existence of real earnings management in firms that meet or just beat earnings benchmarks. Cohen et al. (2008) find that the extent of real earnings management is higher in the post-SOX period than in the pre-SOX period. We extend this line of research by examining how internal governance affects the extent of real earnings management, complementing studies that examine the impact on real earnings management of other governance mechanisms, such as institutional ownership and board independence (e.g., Bushee 1998; Carcello et al. 2006; Zhao 2011).

2.2 Hypothesis Development

2.2.1 Main Hypothesis

In this section, we discuss why key subordinate executives have both the *incentive* and *ability* to provide monitoring and reduce the extent of real earnings management.

As discussed above and studied in numerous prior studies, CEOs likely engage in earnings management to increase their compensation, to increase their job security, to meet earnings targets, and to reduce take-over threat. One of the fundamental drivers of earnings management is the pressure on CEOs to deliver short-term performance that is used in contracting and firm valuation. While it is possible that key subordinate executives are under similar or even greater pressure to deliver short-term performance, yet as compared to CEOs, key subordinate executives have longer horizons that induce them to care more about long-term firm value for three reasons. First, one of the career objectives of many key subordinate executives is to become the next CEO when the current CEO retires or resigns. As documented in Cremers and

Grinstein (2011), 68.6 percent of CEOs are insiders; in other words, in 68.6 percent of the CEO turnover cases, one of the key subordinate executives becomes the next CEO.[8] As the potential CEO in the future, these subordinate executives care about the cash flows that the firm can generate in the future. Since a company's performance depends critically on the capital stock (i.e., value enhancing assets), how the company performs when the subordinate manager becomes the CEO depends on the current capital investment. Thus, subordinate executives are hypothesized to care more about long-term investment than the CEO. As a result, these subordinate executives are less likely to support activities that sacrifice long-term positive NPV investments to meet short-term earnings targets.

Second, subordinate executives have more to lose in the event of corporate underperformance and operational failures. Key subordinate executives are usually younger than the CEO. In our sample, they are four years younger at the sample median, and this difference represents a 44% increase in the number of years of remaining employment (i.e., the number of years until the assumed retirement age of 65). Their future compensation likely represents a larger proportion of their overall income and wealth, and potentially more importantly, they care more about their reputation in the job market. Being affiliated with corporate underperformance or operational failures, either due to earnings manipulation or a lack of long-term investments, has a larger impact on these subordinate executives' welfare than on the CEO's (e.g., Feng et al. 2011).

Third, Fama (1980) argues that in general, a manager's outside opportunity wage depends on other managers', including the CEO's, actions and firm performance. This reputation effect

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[8] Based on data from ExecuComp, we find that 59.7% of the CEOs in our sample were promoted within the company. Within this group of CEOs, 36.0% were the Chief Operating Officer, 40.8% of them were the President, and 7.5% were the Vice President. These statistics confirm that inside-CEOs are generally selected from the set of key subordinate executives we study.

can motivate the key subordinate executives to be more long-term oriented and to exert monitoring on the CEO.

The above discussion implies that subordinate executives have longer horizons and are less myopic than the CEO. The longer the subordinate executives' horizon, the stronger their incentives not to sacrifice long-term value for short-term goals.

Not only do subordinate executives have incentives, they also have the means to influence the CEO's decision. Prior theoretical research argues that key subordinate executives can influence CEOs by threatening to work less (Acharya et al. 2011) or by not cooperating with the CEO (Allen and Gale 2000; Landier et al. 2009). By "working less" or "not cooperating," these scholars mean that subordinate managers likely exert less effort if the CEO's decision is not aligned with subordinate executives preferences. This is plausible because an individual's effort level is usually unobservable and subordinate executives have the best information to decide the appropriate effort level. (This is the same reason why top executives are given performance-based bonus and stock-based compensation, not just a fixed salary). The current CEO's welfare depends on the cash flow in the current period, which is affected by the key subordinate executives' effort levels.[9] If the CEO does not consider the subordinate executives' interests, subordinate executives can work less diligently, hence reducing the current cash flow and the CEO's welfare. Anticipating this, it is in the best interest of the CEO to consider subordinate executives' interests.

Of course, subordinate executives in some firms are more powerful, or are more influential on their CEOs, than their counterparts in other firms. The more influential are the subordinate executives, the more effective their monitoring of the CEO.

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[9] The importance of these key subordinate executives is self-evident. In a recent study, Graham et al. (2013) find that only about 15% of the surveyed CEOs and CFOs indicate that the CEO is the sole-decision maker in their firms regarding important corporate decisions, such as M&A, capital allocation and investments.

Applying the above general discussion to the real earnings management setting, if the CEO chooses real activity manipulation that decreases long-term firm value, key subordinate executives will choose a lower effort level. Anticipating this, the CEO will be less likely to engage in real earnings management. In other words, if the CEO does not engage in real earnings management, then subordinate executives' interest is aligned and they will work harder to improve both current and future firm performance. In addition, the CEO needs the subordinate executives' cooperation to engage in real earnings management because subordinate executives are usually more informed than the CEO in their own functional areas. For example, the president in charge of production likely has more information about the supply of raw materials and the demand from customers. Hence, he or she will play an important role if the firm decides to overproduce in order to increase the current period's earnings. Similarly, the executive in charge of R&D is better informed and can influence whether and how much the firm can reduce the current period's R&D. That is, while the CEO has the formal authority to make the decision, subordinate executives have the real authority, e.g., effective control over the decisions, due to their information advantage (Aghion and Tirole 1997). As such, the CEO will take the subordinate executives' preferences into consideration.

Overall, the effectiveness of key subordinate executives' influence in curbing myopic behavior depends on their horizon and their ability to influence CEOs' decisions. The longer the horizon and the more influence the key subordinate executives have, the more effective the internal governance, and the less likely that the company will engage in real earnings management. Thus, our first hypothesis (in alternative form) is as follows:

H1: The extent of real earnings management is negatively associated with the effectiveness of internal governance.

As discussed below, we use key subordinate executives' horizon (i.e., the number of years until

retirement) and their relative pay (i.e., the average pay of subordinate executives divided by CEO pay) to capture the effectiveness of internal governance.

There are two critical assumptions underlying H1. First, we rely on prior research to argue that the CEO has incentives to increase short-term performance at the expense of long-term value, such as to increase job security (DeFond and Park 1997) and to increase compensation (e.g., Healy 1985; Cheng and Warfield 2005). One might argue that subordinate executives might be as myopic as the CEO. In addition, it is possible that the key subordinate executives are in a tournament or competition for the CEO's position with external candidates. As a result, they might undertake real earnings management to increase short-term earnings and/or to curry favor with the CEO who likely plays a role in selecting his/her successor. If this is the case, we will not find results consistent with H1. Second, prior research indicates that key subordinate executives have the power to influence CEOs' decisions. However, at the same time, CEOs have the power to demote or fire these subordinate executives. Job security concerns can motivate subordinates to cooperate with CEOs in carrying out myopic behavior (Feng et al. 2011). Of course, firing key subordinate executives because they do not engage in myopic behavior can backfire. Having nothing to lose after being fired, subordinate executives can become "whistle-blowers" and reveal the inappropriate behavior to the board, investors, and the press or seek legal action against the firm for inappropriate dismissal.[10] Such potential outcome will deter CEOs from freely firing subordinate executives who choose not to engage in myopic behavior. Again, if subordinate executives have no influence on CEOs' myopic behavior or if CEOs have no

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[10] Unlike accounting frauds, real earnings management practices are usually revealed to the press. However, there are cases where inappropriate practices are revealed to the SEC. For example, Ronald Sorisho, one of the divisional CFOs in Solectron, "files a whistleblower suit alleging that Solectron fired him for trying to force the company to write down substantial quantities of obsolete inventory (Dyck et al. 2010)." As quoted in Dyck et al. (2010), "Ronald Sorisho contends that he was fired on July 31 [2002] after spending several months unsuccessfully trying to persuade Solectron's top management to write off $45 million of obsolete inventory at Solectron's Technology Solution business unit."

incentive to engage in earnings management, we will not find results consistent with H1. Thus, whether we find results consistent with H1 is an empirical question.

2.2.2 Cross-sectional Analyses

Variation in subordinate executives' contribution

One key assumption underlying H1 is that subordinate executives can influence corporate decisions to reflect their preferences. As discussed above, key subordinate executives can influence CEOs' decision because their effort is critical to the performance of the company and CEOs rely on subordinate executives in generating current cash flows (Allen and Gale 2000; Landier et al. 2009; Acharya et al. 2011). However, key subordinate executives' influence likely varies across firms. The more influential the key subordinate executives are in the firm's operations, the stronger is the effect of internal governance. Because one of the fundamental reasons why key subordinate executives can influence CEOs' decisions is their contribution to firm performance, the higher the subordinate executives' contribution, the higher is their potential influence on CEOs (Finkelstein 1992; Acharya et al. 2011). Prior research indicates that complex firms are more difficult to manage and requires the collective efforts of all executives (e.g., Graham et al. 2013). We thus expect the impact of internal governance to be stronger in more complex firms than in other firms. Our next hypothesis (in alternative form) is as follows:

> H2: The effectiveness of internal governance in reducing the extent of real earnings management is stronger in more complex firms than in other firms.

We discuss the proxy for firm complexity in the empirical section.

Other governance mechanisms

While we emphasize the impact of internal governance on the extent of real earnings management, it is important to understand how internal governance and other governance mechanisms interact in affecting the extent of real earnings management. Acharya et al. (2011)

analytically show that "a combination of internal governance and a rudimentary form of outside governance by shareholders can improve the efficiency of the firm dramatically (p. 691)." By "rudimentary form of outside governance by shareholders," they refer to shareholders' ability to take over the firm and replace the CEO if necessary. That is, the effectiveness of internal governance can be enhanced by the monitoring of shareholders who care about long-term value and have the ability to discipline the CEO if needed.[11] Thus, we expect internal governance and other governance mechanisms to be complements.

Relying on prior research, we focus on two commonly studied governance mechanisms that have the ability to discipline the CEO: the monitoring by the board of directors and by institutional shareholders. Numerous prior studies document that the effectiveness of board monitoring increases with board independence (e.g., Weisbach 1988; Klein 2002). The literature on institutional ownership finds that institutional investors are better monitors than other shareholders (e.g., Bushee 1998; Parrino et al. 2003; Chen et al. 2007). Thus, we predict that the effectiveness of internal governance increases with board independence and institutional ownership.[12]

The above discussion leads to our last hypothesis (in alternative form):

H3: The effectiveness of internal governance in reducing the extent of real earnings management is stronger for firms with higher board independence and for firms with higher institutional ownership, than for other firms.

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[11] The Rite Aid Corp fraud case is a good example illustrating this point. As discussed in Dyck et al. (2010), "Joseph Speaker, a senior finance executive at Rite Aid, informs the board of large accounting irregularities at Rite Aid. After firing the CFO, naming Speaker as CFO, and conducting an internal audit, the board admits to the firm's overstating earnings by $1.1 billion, primarily in inventory overvaluation." The board later also fired the CEO. Had the board not taken disciplinary action on the CEO, Joseph Speaker would not have succeeded. This example illustrates that having a strong board can enhance the effectiveness of internal governance.

[12] Acharya et al. (2011) do not specify the exact form of other governance mechanisms in their discussion. We extend their logic and argue that the effectiveness of internal governance increases with the common proxies for the strength of other governance mechanisms, which prior research shows improves shareholders' ability to monitor and discipline the CEO (e.g., firing the CEO). While the monitoring by the board of directors and institutional investors is probably the most commonly examined dimensions of corporate governance, there are other dimensions of corporate governance. Examining all possible dimensions of corporate governance is beyond the scope of this paper.

It is possible that internal governance and other governance mechanisms work as substitutes. For example, a firm with an effective board will have a lower extent of myopic behavior due to the strong monitoring by the board. If so, the marginal impact of internal governance will be lower. Thus, whether we can find results consistent with H3 is an empirical question.

3   Research Design

3.1   Sample

We obtain our initial sample of firms from Compustat ExecuComp in the period from 1993 to 2011. We limit our examination to firms with compensation details of the top five executives and require at least five executives (including the CEO) to be reported in the annual proxy statement.[13] To ensure that we have an appropriate measure of CEO's influence within the firm, we require the CEO to be in office for the entire year. We exclude firms in financial industries (2-digit SICs between 60 and 69) and utility companies (2-digit SICs of 49) because firms in regulated industries have different financial reporting incentives from other firms. We then merge the sample of executive-level data with Compustat, CRSP and I/B/E/S to obtain the data for the other variables required for the analyses and we drop the observations that have missing values for these variables.

To increase our ability to detect real earnings management, we focus on firm-years where CEOs have the greatest incentives to engage in earnings management – when firms meet or just beat an important earnings benchmark (e.g., Burgstahler and Dichev 1997; Degeorge et al.

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[13] About 9% of firm-year observations in ExecuComp report compensation information for fewer than five executives. Following Bebchuk et al. (2011), we exclude these observations from our sample to ensure that our measure of key subordinate executives' influence is comparable across firms.

1999). For this purpose, we follow prior research (e.g., Roychowdhury 2006) and limit our sample to firm-years with earnings surprise between zero and one percent of share price, where earnings surprise is defined as actual earnings minus the most recent consensus analyst forecast before the earnings announcement. We obtain quantitatively similar results if we use alternative cutoff points for earnings surprises, such as 0.5 percent of share price. Our final sample consists of 8,061 firm-years. Panel A of Table 1 reports the sample selection process.

Table 1, Panel B reports the job titles of the key subordinate executives in our sample firms.[14] In our empirical tests, key subordinate executives refer to the top executives included in the ExecuComp database other than the CEO. We limit our scope of subordinate executives to the top four executives other than the CEO because most firms only disclose the compensation details of the top five executives (including the CEO) in their proxy statements. The CFO is usually included in the top four executives, with an increased frequency in recent years, possibly because of the increasing influence of CFOs in the post Sarbanes-Oxley era. Other key executives reported in the proxy statements usually hold job titles such as Chief Operating Officer (COO), President, Executive or Senior Vice President, and Vice President. These titles suggest that the key subordinate executives in our sample usually hold very important positions and thus have significant responsibilities within the firm, leading to their ability to monitor the CEO and to influence real earnings management.

3.2 Measure of Internal Governance

In this paper, we posit that the effectiveness of internal governance increases with key subordinate executives' incentives and ability to monitor the CEO. We measure key subordinate

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[14] Ideally, we would like to categorize the job title of the key subordinate executives based on their job function, such as sales, production, R&D. However, the job titles in ExecuComp do not indicate the job scope of the key executives, and many firms categorize their job titles by business segments (e.g. subsidiaries), geographical segments or product segments rather than by function. As such, we can only provide generic job titles.

executives' monitoring incentives based on their decision horizon, which we proxy for using the

number of years until the age of retirement (assumed to be 65):[15,16]

Exec_Horizon = 65 – the average age of key subordinate executives

Next, we measure key subordinate executives' ability to monitor the CEO based on their

influence within the organization. We posit that competitive labor markets dictate the

compensation of top executives and hence their compensation reflects their contribution to, and

their influence within, the firm.[17] In addition, Finkelstein (1992) argues that an executive's

compensation reflects her power derived from her structural position in the firm. Therefore, our

measure of key subordinate executives' ability to monitor the CEO is defined as follows:[18]

Exec_PayRatio = Average annual compensation of key subordinate executives ÷ CEO's

annual compensation

We scale the average compensation of key subordinate executives by the annual

compensation of the CEO because the hypothesis development implies that we should use a

measure of key subordinate executives' influence *within* the firm. The level of key executives'

compensation varies across firms and does not capture how much influence the executives have

within the firm. For example, subordinate executives in an S&P500 large cap company might

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[15] We use the horizon of the key subordinate executives, not their horizon relative to the CEO's, because it is the horizon itself that leads subordinate executives to care about long-term firm value. The difference in horizon does not necessarily capture executives' incentives to increase long-term firm value. For example, in company A, subordinate executives are on average 50 years old and the CEO is 55 years old; in company B, subordinate executives are on average 60 years old and the CEO is 65 years old. While the difference in horizon between subordinate executives and the CEO is the same for the two companies, company A's subordinate executives have longer horizon, arguably care more about the firm's long-term value, than their counterparts in Company B. In the empirical analyses, we include CEO horizon to control for its impact on the extent of real earnings management. Nevertheless, we obtain qualitatively similar results when using the difference in horizon.
[16] Assuming a different retirement age, such as 70, does not change the regression results (except the intercept) because the retirement age is assumed to be a cross-sectional constant and is thus just a scalar.
[17] Executives' compensation is also closely related to their outside opportunity wage, which is then related to their influence within the firm. An executive with a higher outside opportunity wage is more likely to stand by his or her position and is less concerned with the CEO's reaction (e.g., being demoted or fired).
[18] Some prior studies use variations of the inverse of this measure, or pay slice, to capture tournament incentives (Kale et al. 2009) or CEO dominance (Bebchuk et al. 2011; Feng et al. 2011).

erroneously be regarded as having more influence than their counterparts in an S&P600 small cap company if one uses the unscaled level of compensation as the proxy for their influence within the firm. Hence, it is imperative that we define the subordinate executives' ability to influence the CEO using their relative compensation to the CEO's.

Finally, we derive an aggregate measure of a firm's overall internal governance effectiveness based on both the incentives and ability of key subordinate executives to monitor the CEO. In particular, we standardize both *Exec_Horizon* and *Exec_PayRatio* and sum these two standardized measures as our proxy for the firm's overall internal governance effectiveness (*Int_Governance*).[19] We also explore an alternative aggregate measure based on a non-linear combination of *Exec_Horizon* and *Exec_PayRatio* and obtain quantitatively similar results (untabulated).[20] Note that *Int_Governance* is not a common factor of *Exec_Horizon* and *Exec_PayRatio*. We are not assuming these two variables are highly correlated and capture the same underlying construct. Instead, we argue that these two variables capture different dimensions of internal governance; executives with long horizon and high pay relative to the CEO (a high value of *Int_Governance*) have both the incentive and the ability to monitor CEOs than their counterparts with short horizon and low pay relative to the CEO (a low value of *Int_Governance*).

3.3 Measure of Real Earnings Management

We derive our measure of real earnings management following prior studies (Roychowdhury 2006; Cohen and Zarowin 2010). In particular, we use three individual metrics, abnormal levels of cash flows from operations (*RM_CFO*), production costs (*RM_PROD*) and

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[19] Specifically, for each of the two variables, we deduct the sample mean and then divide the difference by the sample standard deviation of the variable.

[20] In particular, we form tercile ranks on *Exec_Horizon* and *Exec_PayRatio,* sum the tercile rank of both variables, and then rescale the aggregate measure to lie within zero and one.

discretionary expenses (*RM_DISX*), and two aggregate metrics (*RM1* and *RM2*) to measure the

level of real earnings management. To estimate the normal levels of real activities, we estimate

the following models by industry (at the 2-digit SIC level) and year and require at least ten

observations for each industry-year combination, using firms from the Compustat universe:

Cash flows from operations (*CFO*) model:

$$\frac{CFO_{it}}{Assets_{it-1}} = \alpha_1 \frac{1}{Assets_{it-1}} + \alpha_2 \frac{SALES_{it}}{Assets_{it-1}} + \alpha_3 \frac{\Delta SALES_{it}}{Assets_{it-1}} + \varepsilon_{it}$$

Production Costs (*PROD*) model:[21]

$$\frac{PROD_{it}}{Assets_{it-1}} = \alpha_1 \frac{1}{Assets_{it-1}} + \alpha_2 \frac{SALES_{it}}{Assets_{it-1}} + \alpha_3 \frac{\Delta SALES_{it}}{Assets_{it-1}} + \alpha_4 \frac{\Delta SALES_{it-1}}{Assets_{it-1}} + \varepsilon_{it}$$

Discretionary Expenses (*DISX*) model:

$$\frac{DISX_{it}}{Assets_{it-1}} = \alpha_1 \frac{1}{Assets_{it-1}} + \alpha_2 \frac{SALES_{it}}{Assets_{it-1}} + \alpha_3 \frac{\Delta SALES_{it}}{Assets_{it-1}} + \varepsilon_{it}$$

We then use the residuals from the above estimation models as the proxies for real earnings

management. Executives can artificially inflate reported earnings by: 1) accelerating sales using

aggressive price discounts and/or more lenient credit terms which results in abnormally low

CFO; 2) reducing the costs of sales by increasing production so as to spread the fixed costs of

production over a larger number of units, thereby resulting in abnormally high *PROD*; 3)

reducing the amount of discretionary research and development (R&D), advertising, and selling,

general and administrative (SG&A) expenses which result in abnormally low *DISX*. Therefore,

higher abnormal *PROD,* lower abnormal *CFO,* and lower abnormal *DISX* are consistent with

earnings-increasing real earnings management. For ease of interpretation, all real earnings

management measures (*RM_CFO*, *RM_PROD,* and *RM_DISX*) are defined to be increasing in

reported earnings; that is, we use the negative of the residuals from the *CFO* and *DISX* models to

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[21] *PROD* is defined as the sum of the cost of goods sold (*COGS*) and the change in inventory (*ΔINVT*).

define *RM_CFO* and *RM_DISX*.

Following Cohen and Zarowin (2010), we define two aggregate measures of real earnings management, *RM1* and *RM2*, as follows, to capture the total amount of real earnings management engaged by the firm in a particular fiscal year:[22]

$$RM1 \quad = RM\_DISX + RM\_PROD$$

$$RM2 \quad = RM\_CFO + RM\_DISX$$

3.4 Empirical Model

Below we describe the research design for the main test of H1. The design for other tests is described in the corresponding empirical analysis sections. To test H1, we estimate the following regression:

$$RM_{i,t} = \alpha + \beta \, Int\_Governance_{i,t-1} + \gamma \, CEO\_Controls_{i,t-1} + \psi \, Firm\_Controls_{i,t} \\ + Industry\_FE + Year\_FE + \varepsilon_{i,t} \qquad (1)$$

where $RM_{i,t}$ is the measure of real earnings management and $Int\_Governance_{i,t-1}$ is the measure of a firm's internal governance strength, as discussed above. Hypothesis H1 predicts a negative coefficient on *Int_Governance*. $CEO\_Controls_{i,t-1}$ are CEO characteristics included to control for the CEO's incentives and power in the prior fiscal year; $Firm\_Controls_{i,t}$ are contemporaneous firm-level control variables; *Industry_FE* and *Year_FE* are industry and year fixed-effects, respectively.[23] We used the lagged value of all variables relating to internal governance and CEO's characteristics to alleviate potential endogeneity issues. We also utilize an instrumental variable approach to further mitigate this concern, as discussed in Section 5.2. Appendix A

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[22] We do not use an aggregate measure based on all three real earnings management proxies because, as suggested in Roychowdhury (2006) and Cohen and Zarowin (2010), some activities that lead to abnormally high production costs might also lead to abnormally low CFO. Therefore, combining these two measures can result in double counting. Further, we note that the three individual measures capture different types of real earnings management. As a result, we do not use a common factor based on these three measures in the analyses. Instead, as in prior studies (e.g. Cohen and Zarowin 2010), we use the aggregate measure to capture the total amount of real earnings management.

[23] Because of the inclusion of industry and year fixed effects, the intercept (α) captures the extent of real earnings management for firms in the industry and year that do not have corresponding indicators in the regression and when all independent variables have values of zero. As such, we do not present the estimates of the intercept in the tables.

includes the detailed definition of all variables. To mitigate the influence of extreme values, all continuous variables are winsorized at the 1% and 99% levels. Because we use a pooled sample, we use firm and year clustered standard errors to control for cross-sectional and time-series dependence in the data (Petersen 2009; Gow et al. 2010).

We include CEO control variables to mitigate the concern that our proxies for key subordinate executives' incentives and ability to monitor the CEO merely capture the effect of CEO's incentives and power on real earnings management. Specifically, we include the CEO's decision horizon (*CEO_Horizon*), proxied by the number of years until the age of retirement (assumed to be 65), the CEO's annual compensation (*CEO_Comp*), and the normalized CEO's pay-for-performance sensitivity (*CEO_PPS*), measured as the sensitivity of the CEO's equity portfolio to the firm's stock performance (Core and Guay 2002).

Following prior studies, we include several firm-level control variables to capture the impact of firm characteristics on the extent of real earnings management. The inclusion of these variables can also help address omitted correlated variable concern arising from potential endogeneity of internal governance. Firm age (*Firm_Age*) is included because younger firms, which are usually high-growth firms and are expected to obtain additional financing in the future, likely face greater capital markets pressure to deliver and hence are more likely to engage in real earnings management to meet earnings targets (Skinner and Sloan 2002; Erickson et al. 2006; Armstrong et al. 2012). We include the number of analysts following (*N_Analyst*) as a control because monitoring by financial analysts is likely to constrain real earnings management (Cohen and Zarowin 2010). Firm performance (*ROA*), firm size (*Size*), the book-to-market ratio (*B/M*), and leverage (*Leverage*) are included as controls for other firm-specific characteristics such as capital structure and growth opportunities that likely affect real earnings management

(Roychowdhury 2006; Cohen and Zarowin 2010).[24]

Lastly, because we focus on suspect firms, we include an inverse-mills ratio (*IMR*) to control for the potential sample selection bias.[25] For this purpose, we estimate a probit model of an indicator variable for suspect firm-year observations on various explanatory variables (e.g. Cohen and Zarowin 2010): an indicator for habitual beaters, future equity issuance, analysts following, firm growth, shares outstanding, and firm performance. From this estimation model, we obtain the *IMR* and include it in all our regression models.

3.5   Descriptive Statistics

Table 1, Panel C reports descriptive statistics on the regression variables. Because the model for real earnings management is estimated using the Compustat universe, the means of the individual real earning management proxies are not zero. The statistics on real earnings management proxies are similar to those reported in prior research (e.g., Cohen et al. 2008). The mean (median) decision horizon of key subordinate executives (*Exec_Horizon*) is 12.57 (13.00) years, which is longer than that of the CEO's mean (median) decision horizon (*CEO_Horizon*) of 9.46 (9.00) years by 32.9% (44.4%). This comparison supports the notion that key subordinate executives have longer decision horizons and have incentives to monitor the CEO. The mean (median) annual compensation of the key subordinate executive relative to the CEO's annual compensation is 0.548 (0.429), i.e., 54.8% (42.9%) of the CEO's annual compensation. By construction, the summary measure of internal governance, *Int_Governance*, has a mean of zero.

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[24] We also control for other variables that might affect the extent of real earnings management, such as the G-index, an indicator for CEO-Chairman duality, the pay for performance sensitivity of key subordinate executives, and the squared term of internal governance measures. The untabulated analyses indicate that the results on the variables of interest are qualitatively similar. The G-index and the CEO-Chairman duality exhibit significantly positive coefficients in some specifications, consistent with the extent of real earnings management being higher when there are more anti-takeover measures and when the CEO is more likely to be entrenched. The other aforementioned variables are insignificant in most specifications. We omit these controls in our main analyses in favor of a more parsimonious empirical model.

[25] That is, we use Heckman's (1979) two-stage approach to address the concern that our sample is not a random sample in terms of the propensity to just meet or beat earnings expectations.

As our sample firms are from ExecuComp which only includes firms from the S&P1500, our sample firms are significantly more mature (mean *Firm_Age* of 23.4 years), have more analysts following (mean *N_Analyst* of 11.9 analysts), are better performing (mean *ROA* of 7.5%), and are larger (mean *Size* of 7.5) as compared to the firms covered in the Compustat universe in the same time period (results untabulated).[26] The average book-to-market ratio is 0.44 and the average leverage is 0.50.

Table 2 reports the Pearson correlation table of the variables in our main analysis. The three measures of real earnings management (*RM_CFO*, *RM_PROD* and *RM_DISX*) are highly positively correlated with each other except for the correlation between *RM_CFO* and *RM_DISX*. These high correlations suggest that firms manage various real activities in tandem with other real activities. By construction, RM1 and RM2 are highly correlated with individual components and with each other. The correlation between *Exec_Horizon* and *Exec_PayRatio* is positive, but the relatively low correlation coefficient (0.07) suggests that key subordinate executives' decision horizon and influence capture different aspects of firms' internal governance. Consistent with H1, almost all real earnings management measures are negatively associated with the proxies of internal governance. None of the correlations between control variables are high enough to impose a multicollinearity problem.

4   Results

4.1   Main Analyses – Tests of H1

In this section, we report our main tests of H1. We first analyze the separate impact of executive horizon and pay ratio on the extent of real earnings management, and then the impact

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[26] For comparison purposes, the average firm in the Compustat universe in the same period is 13.1 years old, is followed by 4.4 analysts, has an *ROA* of -0.8% and *Size* of 5.8.

of the combined internal governance measure. Table 3 presents the results. For ease of exposition, all measures of real earnings management are multiplied by 100.

Table 3, Panel A presents the separate impact of subordinate executives' decision horizon and pay ratio on real earnings management. We find that as predicted in H1, both executives' decision horizon and influence are significantly negatively associated with the extent of real earnings management, whether proxied by the three individual measures (with the exception of the association between *Exec_PayRatio* and *RM_CFO*) or by the two summary measures.

The results on control variables are generally consistent with prior studies. We find some evidence that firms with CEOs that have longer horizon are less likely to engage in real earnings management. CEOs with higher compensation (which also signifies their ability in the competitive labor market) are less likely to engage in real earnings management, which suggests better-ability CEOs are associated with better earnings quality (Demerjian et al. 2013). We also find that firms with more analysts following and better performance are less likely to engage in real earnings management and firms with higher book-to-market and leverage are more likely to engage in real earnings management. There is also some evidence that large firms and younger firms are more likely to engage in real earnings management. Finally, the inverse-mills ratio (*IMR*) is significant in most specifications, although the results on the variable of interest remain the same when we do not include *IMR*.

Table 3 Panel B reports the analysis of the impact of the overall internal governance on real earnings management. Consistent with the results reported above, the overall internal governance (*Int_Governance*) is significantly associated with a lower extent of real earnings management, after controlling for CEO and firm characteristics. The effect of internal governance on real earnings management is also economically significant. A one standard deviation increase in

Int_Governance is associated with a decrease in *RM1* and *RM2* of 2.9% and 2.1% of total assets, respectively.[27]

We conduct a series of additional analyses to ensure the robustness of the results and we do not tabulate the results to save space. First, we examine whether our results are driven by CFOs' incentives and ability to monitor the CEO. For this purpose, we exclude CFOs from our measurement of internal governance. The untabulated results are quantitatively similar, suggesting that other key subordinate executives do influence real earnings management. Second, in the main analyses, we use the average of executive horizon and relative compensation to construct internal governance measures. We find similar results (1) when we use the median of key executives' decision horizon and pay ratio in order to mitigate the concern that our results are driven by extreme values in the internal governance variables, and (2) when we use the maximum value of key executives' decision horizon and pay ratio (internal governance can arguably be exerted by the executive who has the greatest incentive and ability to monitor the CEO).

Overall, the results reported above are consistent with H1 that the extent of real earnings management is negatively associated with the effectiveness of internal governance.

4.2 Cross-sectional Analyses

4.2.1 Research Design

To test H2 and H3, we estimate the following regression:

$$
\begin{aligned}
RM_{i,t} ={}& \alpha + \beta\, Int\_Governance_{i,t-1} + \eta\, Conditional\_VAR_{i,t} \\
& + \varphi\, Int\_Governance_{i,t-1} \times Conditional\_VAR_{i,t} + \gamma\, CEO\_Controls_{i,t-1} \quad (2) \\
& + \psi\, Firm\_Controls_{i,t} + Industry\_FE + Year\_FE + \varepsilon_{i,t}
\end{aligned}
$$

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[27] The impact on *RM1* expressed as a percentage of total assets is computed as -2.014 (the coefficient on *Int_Governance*) × 1.464 (the sample standard deviation of *Int_Governance*). Note that all measures of real earnings management are already multiplied by 100 and hence presented as a percentage of total assets. The impact on *RM2* is computed analogously.

where $Conditional\_VAR_{i,t}$ is a conditioning variable that moderates the association between a firm's internal governance effectiveness and real earnings management. For sake of space, we focus on the two aggregate measures of real earnings management (*RM1* and *RM2*) and the aggregate measure of the firm's internal governance (*Int_Governance*). All other variables are defined as above. The estimation of regression (2) is similar to that of regression (1). To test H2 (H3), $Conditional\_VAR_{i,t}$ refers to proxies for key subordinate executives' contribution to the firm's performance (proxies for the strength of other governance mechanisms). We explain the proxies below.

4.2.2   The Conditioning Effect of Firm Complexity – Test of H2

To test H2, we examine whether the relationship between the effectiveness of internal governance and real earnings management is stronger in firms where key subordinate executives' contribution to the firm's performance is expected to be higher. We expect key subordinate executives' contribution to the firm's performance to be more important when the firm operates in an R&D intensive industry where technological complexity is high and when the complexity surrounding operating in diverse geographical locations is high (e.g., Finkelstein 1992; Graham et al. 2013). We proxy for operation complexity using the following two measures: (1) an indicator (*IND_RD*) that equals one (zero) for firm-year observations in the top (bottom) tercile of industry R&D intensity; and (2) an indicator (*GEO_Complexy*) that equals one (zero) for firm-year observations in the top (bottom) tercile of the first principle component of the following three variables: the number of geographical segments, geographical sales concentration and the percentage of foreign sales.[28] (To increase the power of the test, we exclude firm-years in the middle tercile.) To test H2, we replace $Conditional\_VAR_{i,t}$ in equation (2) with each of the two

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[28] We do not combine *IND_RD* and *GEO_Complexy* into one common factor because unreported factor analysis results in two principle components each with an eigenvalue greater than one, suggesting that these two measures appear to capture different constructs.

measures and we expect a negative coefficient on the interaction term.

Table 4 reports the regression results. We find the negative impact of internal governance on the extent of real earnings management is significantly stronger in industries with higher R&D intensity (Panel A, *t-statistic* = -2.86 and -2.93, respectively). The impact of internal governance is also stronger in firms with more diverse geographical operations, although only marginally significant in the case of *RM2* (Panel B, *t-statistic* = -0.98 and -1.28, respectively). Overall, the results in Table 4 are consistent with hypothesis H2 that the impact of internal governance is stronger in more complex firms where key subordinate executives are expected to play a greater role in the firm's operations.

4.2.3   The Conditioning Effect of Other Governance Mechanisms – Test of H3

In H3, we predict that other governance mechanisms strengthen the effectiveness of internal governance. To represent the strength of other governance mechanisms, we recognize that there are a number of governance measures which are highly correlated with each other and that it is an empirical challenge to find one single measure that represents the overall governance (Larcker et al. 2008). Hence, we rely on extant literature and utilize two commonly used proxies for the other corporate governance mechanisms: board independence and institutional ownership. Prior literature finds that independent directors and institutional investors exert significant discipline over poor-performing CEOs (e.g., Weisbach 1988; Parrino et al. 2003). We construct an indicator (*CORP_GOV*) that equals one (zero) if a firm-year observation is in the top (bottom) tercile of the first principal component of the two variables: the percentage of independent directors and institutional ownership.[29] To test H3, we replace *Conditional_VAR$_{i,t}$* with this

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[29] We also conduct additional analyses by redefining institutional ownership to only include the ownership of independent and long-term institutions that specialize in monitoring, as argued in Chen et al. (2007) and we find qualitatively similar results. Independent and long-term institutions include those who are: 1) either investment companies, independent investment advisors or pension funds; 2) the top 5 institutional owners in the current and

measure of corporate governance and we expect a negative coefficient on the interaction term.

Table 5 presents the regression results. We find that the negative impact of internal governance on real earnings management is significantly stronger for firms that have stronger governance mechanisms (*t-statistic* = -1.86 and -1.94, respectively). These results are consistent with hypothesis H3 that effective board oversight and higher institutional ownership can enhance key subordinate executives' ability to monitor the CEO. It is interesting to note that *Int_Governance* becomes statistically insignificant, suggesting that internal governance requires the presence of other governance mechanisms to function effectively. Also note that the other governance mechanisms (*CORP_GOV*) have a negative impact on real earnings management (*t-statistic* = -3.02 and -3.14 respectively). Overall, these results are consistent with hypothesis H3 that internal governance and other governance mechanisms are complements in constraining real earnings management.

5   Additional Analyses and Sensitivity Checks

5.1   Internal Governance and Accrual-based Earnings Management

In this paper, we find that internal governance is associated with lower extent of real earnings management. A natural extension is to examine whether internal governance is associated with accrual-based earnings management. The relationship between internal governance and accrual-based earnings management is less straightforward. On one hand, key subordinate executives (other than the CFO) are less likely to have a direct influence over the financial reporting process and accruals management.[30] Hence, we would not expect a significant

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prior fiscal year; and 3) dedicated or quasi-indexers according to Bushee (1998) classification. We thank Brian Bushee for sharing his data on institutional classification with us.

[30] In a similar vein, we do not study whether key subordinate executives play a role in other types of activities, such as expectation management (e.g., walking down analysts' expectations) and re-classification of certain items in the

relation between internal governance and accrual-based earnings management. On the other

hand, key executives are likely to have an important influence over the corporate culture and the

overall corporate attitude toward earnings management. Key executives' focus on the long-term

value of the firm and their control over operational activities may in turn manifest in better

financial reporting quality and less accrual-based earnings management. Thus, whether internal

governance has an impact on the extent of accrual-based earnings management is an empirical

question. This investigation is also important because of the potential interaction between accrual

and real earnings management. As discussed in detail later, firms might jointly determine the

extent of these two types of earnings management – the extent of one type of earnings

management might affect the use of the other type.

To test this potential effect, we measure accrual-based earnings management using the

Modified Jones model (*ACCEM*) and replace *REM* with *ACCEM* as the dependent variable in

equation (1). Panel A of Table 6 reports the results. As reported in Column (1) of Panel A, we

find that the extent of internal governance is associated with lower extent of accrual-based

earnings management (*t-statistic* = -2.22). This finding is consistent with the idea that strong

internal governance has a positive spillover effect on the overall corporate culture that restrains

short-termism and hence results in lower accrual-based earnings management.

Prior studies (e.g. Cohen and Zarowin 2010; Zang 2012) suggest that executives could use

both real and accruals-based earnings management strategies to meet earnings targets. Both real

and accrual earnings management are costly, although the costs manifest in different forms. Real

earnings management has direct adverse consequences on future performance, but accrual

earnings management is costly because it might lead to litigation and reputation risk if it is

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financial statements. Generally, the CEO and/or the CFO, play a critical role in these activities and other key
subordinate executives have little direct influence over such activities.

discovered to be noncompliant with GAAP. Compared to real earnings management, accrual earnings management is under greater scrutiny by auditors and regulators. In contrast, real operating activities are under managers' discretion and thus real earnings management is harder for outsiders, including outside directors, to unravel. As such, recent studies argue and show that managers increasingly rely more on real earnings management than on accrual-based earnings management (Graham et al. 2005; Cohen et al. 2008). Zang (2012) further suggests that real earnings management usually occurs before accrual earnings management. To test the robustness of the results in Column (1), in columns (2) and (3), we control for *RM1* and *RM2* in the regressions. As reported, both *RM1* and *RM2* are significantly positively associated with *ACCEM* *(t-statistic* = 8.57 and 13.08 respectively), which suggests that real and accrual-based earning management are used in tandem with one another.[31] Interestingly, *Int_Governance* is no longer significant after controlling for the extent of real earnings management *(t-statistic* = -1.36 and -0.29 respectively).

To ensure that our results on real earnings management are not affected by accrual-based earnings management, we add *ACCEM* to our main analyses of real earnings management and report the results in Panel B of Table 6. We find that *Int_Governance* is still negative and significant *(t-statistic* = -3.77 and -4.34, respectively) after controlling for *ACCEM*. Overall, the results suggest that key executives exert more significant influence over real, rather than accrual-based, earnings management.

5.2 An Instrumental Variable Approach to Address Endogeneity Concerns

We recognize that our analyses might be subject to endogeneity concerns because firms'

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[31] In untabulated analyses, we use a simultaneous equations approach to estimate the relation. Specially, we simultaneously estimate the two models, one for accrual-based earnings management and one for real earnings management, with both dependent variables as endogenous variables and including one as an independent when explaining the other. The inferences are the same: the coefficient on real earnings management proxy is positive when explaining accrual-based earnings management, and vice versa.

internal governance is arguably endogenously determined. As highlighted earlier, we mitigate this concern by using the lagged values of internal governance and including variables that are likely related to both internal governance and the extent of real earnings management (to address the omitted correlated variable problem). In addition, our cross-sectional analyses also mitigate this concern because it is arguably harder for an omitted variable to explain both our main and cross-sectional findings. Furthermore, in the later falsification test (Section 5.5) we do not find an impact of internal governance in subsamples where we do not expect to find one. In this section, we employ an instrumental variable approach to further address endogeneity concerns.

Following related studies (e.g., Kale et al. 2009; Bebchuk et al. 2011), we utilize two instruments: 1) an indicator that equals one if the current CEO is recruited from outside, and zero otherwise (*Outside_CEO)*; 2) the number of named executives in the annual proxy statement besides the CEO (*Named_Exec*). When the CEO is recruited from outside, the CEO is less likely to possess as much firm-specific knowledge as compared to an inside-CEO and hence the influence of other executives is likely higher, improving the effectiveness of internal governance. In a similar vein, a higher the number of named executives in the annual proxy statement implies a greater number of highly-paid executives and a stronger presence of divisional managers who can arguably increase the effectiveness of internal governance. However, we do not think that whether the CEO is recruited from inside or outside or the number of divisional managers is associated with the incentive to manipulate earnings through real earnings management.

We report the first stage regression results in Column (1) of Table 7, where we regress *Int_Governance* on the two instruments as well as the controls used in the second stage regression. As predicted, we find that both *Outside_CEO* and *Named_Exec* are significantly positively associated with *Int_Governance* (*t-statistic* = 5.03 and 3.48, respectively). The weak

identification test suggests that these two instruments are powerful: the F statistic for the joint explanatory power of the instrument variables is 16.65, significantly higher than the critical value suggested in Stock et al. (2002).[32] This diagnostic test provides some assurance that our two instruments are jointly relevant.

Columns (2) and (3) of Table 7 report the second stage regression results. We find that the predicted internal governance estimated from the first-stage regression is significantly negatively associated with *RM1* and *RM2* (*t-statistic* = -3.47 and -3.56, respectively). The result from the over-identification test of all instruments is insignificant (*J-statistic* = 0.002 and 0.005, respectively), suggesting that the instruments are valid (i.e. uncorrelated with the error term in the second stage). Overall, the results from the instrumental variable approach indicate that our results still hold after controlling for potential endogeneity concern.

5.3 An Alternative Measure of Key Subordinate Executives' Power

Throughout the paper, we use a compensation-related measure to capture key executives' influence within the firm. In this subsection, we explore an alternative measure of key subordinate executives' influence that is based on the number of directorships in other firms held by these executives (*Other_Director*). Finkelstein (1992) argue that sitting on other firms' boards reflects an executive's power. Masulis and Mobbs (2011) also argue that these executives are more influential and are more likely to serve as the CEO in the future, and consistent with this notion, they find that firms with executives who serve on other companies' boards are associated with lower manager-shareholder agency costs. Accordingly, we expect that key subordinate executives who have directorships in other firms to exert greater influence over the current CEO and that the more directorships they have, the stronger their influence. To test this prediction, we

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[32] We use the ivreg2 module in Stata 12 written by Baum et al. (2010) to conduct our instrumental variables analyses.

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include this alternative measure of key executives' power in our regression and report the results in Table 8. In our sample, 8.9% of firm-year observations have at least one key executive who holds directorship(s) in other firms.[33]

In columns (1) and (2) of Table 8, we use *Other_Director* in place of *Exec_PayRatio* as an alternative proxy for key subordinate executives' influence. As predicted, we find that *Other_Director* is negatively associated with *RM1* and *RM2*, significant at the 0.01 level in both models (*t-statistic* = -2.61 and -2.32, respectively). This result suggests that key subordinate executives with outside directorships exert greater influence in constraining real earnings management. In columns (3) and (4), we explore whether *Other_Director* captures a different dimension of executives' influence as compared to *Exec_PayRatio* by including both variables in the same regression. We find that both variables have significantly negative coefficients, suggesting that *Other_Director* represents a different aspect of executives' influence within the firm. The results on other variables, including executive horizon, are similar to those reported above.

5.4   The Effectiveness of Internal Governance: Pre- versus Post-SOX Period

The Sarbanes-Oxley Act (hereafter, "SOX"), passed on July 30, 2002, aims at strengthening corporate governance and mitigating managerial incentives to manipulate earnings via accruals. Prior research (e.g. Graham et al. 2005; Cohen et al. 2008) finds that the passage of SOX and the increased regulatory scrutiny on accrual-based earnings management led many firms to switch to real earnings management. When CEOs switch to value-decreasing real activities manipulations, we expect key subordinate executives to exert more influence over real

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[33] Within the group of firms with key subordinate executives serving as directors in other firms, 63% of the firms have one key subordinate executive serving as directors in other firms, 25% have two key subordinate executives serving as directors in other firms, and 12% have three or more key subordinate executives serving as directors in other firms.

earnings management in the post-SOX period than in the pre-SOX period. In addition, the passage of SOX increases the overall emphasis on corporate governance and hence, key subordinate executives are likely to obtain greater support from other governance mechanisms, such as the board of directors, in the monitoring of the CEO, also leading to more effective internal governance. To test this prediction, we create an indicator variable (*Post_SOX*) that equals one if the fiscal year is 2002 or later, and zero otherwise, and replace *Conditional_VAR* in equation (2) with *Post_SOX*.[34] Because of the inclusion of the *Post_SOX* variable, we cannot include year fixed-effects; instead we include a time trend variable (*Time*). The results are presented in Table 9. Consistent with our predictions, the coefficient on the interaction term is significantly negative (*t-statistic* = -3.09 and -2.88, respectively), implying that the effectiveness of internal governance in constraining real earnings management is strengthened in the post-SOX period.

5.5 Falsification Test

For the empirical tests in this study, we restrict our sample to observations that meet or just beat earnings expectations because this is the sample where CEOs have heightened incentives to engage in earnings management (Roychowdhury 2006). As a falsification test, we re-run our main analyses on a sample where we do not expect earnings management and hence internal governance is less likely to matter. Specifically, we construct a sample of firm-years with earnings surprises less than -0.5% of stock price (big miss) and larger than 1% of stock price (big beat). We exclude the sample of firm-years with earnings surprises between -0.5% and 0% of stock price for two reasons. First, given the potential stock price penalty associated with missing analyst forecast, it is possible that managers engaged in earnings management but failed to meet

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[34] The results are quantitatively similar if we drop 2002 and 2003 from the post-SOX period as these two years might be regarded as a transition period when many sections of SOX were not yet fully effective.

the benchmark. Second, managers near the important earnings benchmark may still manage earnings upwards to meet other internal and unobservable targets (Roychowdhury 2006; Zang 2012). Table 10 presents the results of this falsification test.

As expected, *Int_Governance* is not significantly associated with the extent of real earnings management at conventional levels in this subsample of firm-years where the incentive to manage earnings upward is expected to be low.[35] This result reinforces our inference that internal governance plays a more important role in constraining real earnings management when the incentives to meet or beat earnings target is high.

6   Conclusion

In this paper, we examine whether key subordinate executives have the incentives and ability to restrain the extent of real earnings management. Compared to the CEO, key subordinate executives are usually younger, have longer horizon, and care more about future performance. Also, key subordinate executives have the ability to influence CEOs' decisions because of their significant involvement in the firm's operations as well as their contribution to the firm's current performance, which are important to the CEO. Using the number of years to retirement to capture key subordinate executives' incentives and their compensation relative to the CEO's to capture their influence within the firm, we find that the extent of real earnings management decreases with key subordinate executives' horizon and influence.

We then examine whether the impact of internal governance varies with proxies for key subordinate executives' contribution and the strength of other governance mechanisms. We find

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[35] One potential reason why we fail to find statistical significance in these falsification tests is the lack of test power because we conduct these analyses on a smaller subsample. We do not think that test power is a significant concern because we still find statistical significance in many of the control variables, and the adjusted R^2 is relatively similar to the main analyses, which suggest that there is sufficient test power in these empirical tests.

that the impact of internal governance is stronger in more complex firms where key subordinate executives play a more important role and in firms with stronger other governance mechanisms. We conduct a series of additional tests to ensure the robustness of our results and to provide additional insights. First, our inferences remain the same after we control for the potential endogeneity concerns using an instrumental variable approach. Second, we use an alternative measure of key subordinate executives' ability to influence corporate decisions: whether the subordinate executives sit on other companies' boards, and the inference remains the same. Third, we find that our results are stronger in the post-SOX period when real earnings management is likely more prevalent than in the pre-SOX period. Lastly, in a falsification test, we find that internal governance is not correlated with the extent of real earnings management in a sample where we expect not to find results, further strengthening our main inference.

We contribute to the literature by examining the impact of internal governance on the extent of real earnings management. This examination is important because it sheds light on how the members of the management team work together and shape financial reporting. Unlike prior research which generally views executives as a unified team, this paper provides evidence that subordinate executives can provide an important monitoring role on the CEOs from the bottom up and that effective internal governance can reduce the extent of real earnings management. This paper differs from and complements studies on the impact of CFO characteristics on accrual quality or the likelihood of earnings restatements/frauds by focusing on all subordinate executives and by focusing on real earnings management.

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APPENDIX
Variables Definition

ACCEM   Measure of discretionary accruals computed using the Modified Jones model.

B/M   The book to market ratio in the current fiscal year, defined as book value of equity (CEQ) divided by the market value of equity (CSHO*PRCC_F).

CEO_Comp   The CEO's logged total compensation in the prior fiscal year.

CEO_Horizon   CEO's decision horizon, defined as retirement age of 65 minus the age of the CEO.

CEO_PPS   The normalized pay-for-performance sensitivity of the CEO's portfolio of equity in the prior fiscal year, measured similarly to Core and Guay (2002).

CORP_GOV   An indicator equals one (zero) if the firm-year observation is in the top (bottom) tercile of the first principle component of the following two variables: 1) percentage of independent directors and; 2) institutional ownership.

Exec_Horizon   Subordinate executives' decision horizon, defined as retirement age of 65 minus the average age of other executives.

Exec_PayRatio   Subordinate executives' ability to influence the CEO, defined as the average total compensation of other executives, scaled by the CEO's total compensation, measured in the prior fiscal year.

EQ_Issue   An indicator equals one if the firm issues equity in the following fiscal year, and zero otherwise.

Firm_Age   The age of the firm, defined as the number of years since the firm's stock returns is first reported in the monthly stock files of CRSP.

GEO_Complexy   An indicator equals one (zero) if the firm-year observation is in the top (bottom) tercile of the first principle component of the following three variables: 1) number of geographical segments; 2) geographical sales concentration and; 3) percentage of foreign sales.

Hab_Beat   The number of times that the firm has just meet or beat earnings expectations in the prior four quarters.

IMR	The inverse mills ratio from the following probit regression: $Prob[SUSPECT = 1] = Probit(\beta_0 + \beta_1 Hab\_Beat_t + \beta_2 EQ\_Issue_{t+1} + \beta_3 N\_Analyst_t + \beta_4 PB/M_t + \beta_5 Shares_t + \beta_6 ROA_t + \varepsilon_t)$
IND_RD	An indicator equals one (zero) if the firm-year observation is in the top (bottom) tercile of industry research and development intensity.
Int_Governance	Firm's overall internal governance, measured as the sum of the standardized value of *Exec_Horizon* and *Exec_PayRatio*.
Leverage	The leverage ratio in the current fiscal year, defined as total liabilities (AT – CEQ) divided by total assets (AT).
N_Analyst	The number of analysts following the firm in the current fiscal year, obtained from I/B/E/S.
Named_Exec	The number of named executives in the annual proxy statement besides the CEO in the prior fiscal year.
Other_Director	The number of independent directorships in other firms held by key subordinate executives.
Outside_CEO	An indicator equals one if the current CEO is recruited from outside, and zero otherwise.
PB/M	The book to market ratio in the prior fiscal year, defined as book value of equity (CEQ) divided by the market value of equity (CSHO*PRCC_F).
Post_SOX	An indicator equals one if fiscal year is on or after 2002, and zero otherwise.
RM_CFO	A real earnings management proxy that negatively affects cash flows from operations.
RM_DISX	A real earnings management proxy that negatively affects discretionary expenses.
RM_PROD	A real earnings management proxy that negatively affects production.
RM1	An aggregate measure of real earnings management, defined as the sum of *RM_PROD* and *RM_DISX*.
RM2	An aggregate measure of real earnings management, defined as the sum of *RM_CFO* and *RM_DISX*.

ROA	Return on assets in the current fiscal year, defined as earnings before extraordinary items (IB), scaled by beginning total assets (AT).
Shares	The logged number of shares outstanding in the current fiscal year.
Size	The logged value of total assets (AT) in the current fiscal year.
SUSPECT	An indicator equals one for firm-year observations with earnings surprise between zero and one percent of share price, and zero otherwise.
Time	A time trend variable which equals to the difference between the current fiscal year and 1992.

TABLE 1
Sample Selection and Descriptive Statistics

Panel A: Sample Selection

	Obs.
Total number of firm-year observations from 1993-2011 with Compustat, ExecuComp and I/B/E/S data	23,647
Less: financials (2-digit SIC between 60 and 69) and utilities (2-digit SIC 49) firms	(5,133)
Less: missing values for variables used in the regressions	(5,987)
Less: firm-year observations with earnings surprise outside the range of 0% and 1% of stock price	(4,466)
Final sample	8,061
Number of unique firms	1,825

Panel B: Titles of Key Subordinate Executives

Title	Obs.	%
Chief Financial Officer (CFO)	6,415	19.90
Chief Operating Officer (COO)	3,521	10.92
President	4,818	14.94
Executive Vice President	4,997	15.50
Senior Vice President	4,838	15.00
Vice President	4,199	13.02
Others	3,456	10.72
Total	32,244	100.00

TABLE 1(Cont'd)

Panel C: Sample and Descriptive Statistics

Variables	Obs.	Mean	Median	Std. Dev.	Q1	Q3
RM_CFO	8,061	-0.060	-0.051	0.109	-0.116	0.004
RM_PROD	8,061	-0.036	-0.028	0.197	-0.140	0.072
RM_DISX	8,061	0.043	0.047	0.212	-0.059	0.160
RM1	8,061	0.008	0.023	0.375	-0.181	0.210
RM2	8,061	-0.017	-0.005	0.227	-0.133	0.108
Exec_Horizon	8,061	12.571	13.000	6.462	9.000	16.750
Exec_PayRatio	8,061	0.548	0.429	0.502	0.320	0.589
Int_Governance	8,061	0.000	-0.131	1.464	-0.777	0.583
CEO_Horizon	8,061	9.464	9.000	7.789	5.000	15.000
CEO_Comp	8,061	7.957	7.955	1.069	7.199	8.709
CEO_PPS	8,061	0.299	0.225	0.237	0.120	0.412
Firm_Age	8,061	23.360	17.000	19.233	9.000	32.000
N_Analyst	8,061	11.942	10.000	7.791	6.000	17.000
ROA	8,061	0.075	0.071	0.087	0.037	0.114
Size	8,061	7.483	7.334	1.494	6.382	8.437
B/M	8,061	0.444	0.389	0.295	0.247	0.579
Leverage	8,061	0.499	0.505	0.205	0.351	0.631

RM_CFO is a real earnings management proxy that negatively affects cash flows from operations. RM_PROD is a real earnings management proxy that negatively affects production. RM_DISX is a real earnings management proxy that negatively affects discretionary expenses. RM1 and RM2 are aggregate measures of real earnings management. Exec_Horizon is the subordinate executives' decision horizon. Exec_PayRatio is the subordinate executives' ability to influence the CEO. Int_Governance is the firm's overall internal governance, measured as the sum of the standardized value of Exec_Horizon and Exec_PayRatio. CEO_Horizon is the CEO's decision horizon. CEO_Comp is the CEO's logged total compensation. CEO_PPS is the pay-for-performance sensitivity of the CEO's portfolio of equity. Firm_Age is the age of the firm. N_Analyst is the number of analysts following the firm. ROA is the return on assets in the current fiscal year. Size is the logged value of total assets in the current fiscal year. B/M is the book-to-market ratio in the current fiscal year. Leverage is the leverage ratio in the current fiscal year.

TABLE 2
Pearson Correlation Table

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1 RM_CFO	1.00																
2 RM_PROD	0.48	1.00															
3 RM_DISX	-0.11	0.67	1.00														
4 RM1	0.19	0.91	0.92	1.00													
5 RM2	0.37	0.86	0.88	0.95	1.00												
6 Exec_Horizon	-0.08	-0.07	-0.04	-0.06	-0.07	1.00											
7 Exec_PayRatio	-0.05	-0.02	-0.01	-0.01	-0.03	0.07	1.00										
8 Int_Governance	-0.09	-0.06	-0.03	-0.05	-0.07	0.73	0.73	1.00									
9 CEO_Horizon	-0.04	-0.03	-0.03	-0.03	-0.04	0.16	0.04	0.14	1.00								
10 CEO_Comp	-0.06	-0.01	0.04	0.02	0.00	-0.05	-0.47	-0.35	-0.03	1.00							
11 CEO_PPS	-0.18	-0.10	0.01	-0.05	-0.08	0.12	0.29	0.28	-0.06	0.02	1.00						
12 Firm_Age	0.07	0.03	0.00	0.02	0.04	-0.26	-0.14	-0.27	-0.16	0.30	-0.14	1.00					
13 N_Analyst	-0.20	-0.11	0.00	-0.06	-0.10	-0.01	0.05	0.03	0.00	0.42	0.25	0.15	1.00				
14 ROA	-0.37	-0.31	0.00	-0.16	-0.19	-0.01	-0.01	-0.01	-0.04	0.02	0.14	-0.02	0.14	1.00			
15 Size	-0.02	0.10	0.12	0.12	0.10	-0.17	-0.06	-0.16	-0.11	0.65	0.12	0.48	0.61	-0.05	1.00		
16 B/M	0.27	0.26	0.08	0.18	0.20	-0.03	-0.06	-0.06	-0.03	-0.10	-0.21	-0.01	-0.27	-0.35	-0.06	1.00	
17 Leverage	0.25	0.20	0.06	0.14	0.17	-0.12	-0.10	-0.14	-0.06	0.24	-0.16	0.27	0.05	-0.22	0.42	-0.13	1.00

RM_CFO is a real earnings management proxy that negatively affects cash flows from operations. RM_PROD is a real earnings management proxy that negatively affects production. RM_DISX is a real earnings management proxy that negatively affects discretionary expenses. RM1 and RM2 are aggregate measures of real earnings management. Exec_Horizon is the subordinate executives' decision horizon. Exec_PayRatio is the subordinate executives' ability to influence the CEO. Int_Governance is the firm's overall internal governance, measured as the sum of the standardized value of Exec_Horizon and Exec_PayRatio. CEO_Horizon is the CEO's decision horizon. CEO_Comp is the CEO's logged total compensation. CEO_PPS is the pay-for-performance sensitivity of the CEO's portfolio of equity. Firm_Age is the age of the firm. N_Analyst is the number of analysts following the firm. ROA is the return on assets in the current fiscal year. Size is the logged value of total assets in the current fiscal year. B/M is the book-to-market ratio in the current fiscal year. Leverage is the leverage ratio in the current fiscal year. All correlations except those in shaded cells are statistically significant at the 0.05 level or better.

TABLE 3
Internal Governance and Real Earnings Management

Panel A: Key Executives' Decision Horizon, Power and Real Earnings Management

	Pred. H1	(1) RM_CFO		(2) RM_PROD		(3) RM_DISX		(4) RM1		(5) RM2	
		Coef.	*t-stats*	*Coef.*	*t-stats*	*Coef.*	*t-stats*	*Coef.*	*t-stats*	*Coef.*	*t-stats*
Exec_Horizon	—	-0.072	-3.22 ***	-0.147	-3.12 ***	-0.111	-1.90 **	-0.252	-2.52 ***	-0.178	-2.97 ***
Exec_PayRatio	—	-0.329	-1.03	-2.141	-3.25 ***	-3.042	-3.40 ***	-5.141	-3.51 ***	-3.524	-4.27 ***
CEO_Horizon		-0.024	-1.15	-0.052	-1.28	-0.085	-1.77 *	-0.137	-1.64	-0.101	-2.16 **
CEO_Comp		-0.234	-0.90	-2.441	-4.44 ***	-2.896	-4.53 ***	-5.334	-4.71 ***	-3.313	-5.36 ***
CEO_PPS		-0.990	-1.52	-1.091	-0.63	-0.339	-0.16	-1.091	-0.30	-1.402	-0.64
Firm_Age		0.033	3.41 ***	-0.050	-2.10 **	-0.088	-3.28 ***	-0.134	-2.79 ***	-0.050	-1.85 *
N_Analyst		-0.151	-4.44 ***	-0.396	-6.26 ***	-0.432	-5.70 ***	-0.831	-6.14 ***	-0.575	-7.57 ***
ROA		-35.760	-11.42 ***	-49.310	-7.93 ***	16.170	2.72 ***	-32.930	-2.86 ***	-22.370	-3.18 ***
Size		-0.510	-2.14 **	3.631	7.80 ***	5.335	10.51 ***	8.890	9.75 ***	4.855	8.56 ***
B/M		4.723	8.17 ***	12.830	7.52 ***	10.800	6.28 ***	23.720	7.08 ***	15.120	8.10 ***
Leverage		10.550	7.70 ***	15.400	5.62 ***	8.046	2.65 ***	23.550	4.21 ***	18.350	6.15 ***
IMR		-0.232	-0.31	-2.934	-1.96 **	-3.356	-2.10 **	-6.109	-2.10 **	-3.560	-2.02 **
Industry and Year FE		YES		YES		YES		YES		YES	
Adjusted R^2		0.310		0.231		0.155		0.167		0.182	
Observations		8,061		8,061		8,061		8,061		8,061	

Panel B: Overall Internal Governance and Real Earnings Management

	Pred. H1	(1) RM_CFO		(2) RM_PROD		(3) RM_DISX		(4) RM1		(5) RM2	
		Coef.	*t-stats*	*Coef.*	*t-stats*	*Coef.*	*t-stats*	*Coef.*	*t-stats*	*Coef.*	*t-stats*
Int_Governance	—	-0.345	-3.37 ***	-1.001	-4.27 ***	-1.043	-3.73 ***	-2.014	-4.11 ***	-1.401	-4.81 ***
CEO_Horizon		-0.024	-1.17	-0.052	-1.27	-0.084	-1.75 *	-0.136	-1.63	-0.100	-2.14 **
CEO_Comp		-0.378	-1.59	-2.380	-4.65 ***	-2.506	-4.36 ***	-4.877	-4.68 ***	-3.017	-5.21 ***
CEO_PPS		-0.894	-1.32	-1.132	-0.65	-0.600	-0.29	-1.396	-0.39	-1.600	-0.74
Firm_Age		0.033	3.44 ***	-0.050	-2.11 **	-0.089	-3.33 ***	-0.136	-2.82 ***	-0.051	-1.89 *
N_Analyst		-0.149	-4.42 ***	-0.397	-6.27 ***	-0.436	-5.77 ***	-0.835	-6.18 ***	-0.578	-7.61 ***
ROA		-35.750	-11.42 ***	-49.310	-7.94 ***	16.150	2.73 ***	-32.950	-2.87 ***	-22.380	-3.18 ***
Size		-0.443	-1.91 *	3.603	7.94 ***	5.153	10.48 ***	8.676	9.73 ***	4.717	8.40 ***
B/M		4.682	8.17 ***	12.850	7.56 ***	10.910	6.38 ***	23.850	7.15 ***	15.200	8.19 ***
Leverage		10.520	7.69 ***	15.420	5.64 ***	8.127	2.68 ***	23.650	4.24 ***	18.410	6.19 ***
IMR		-0.206	-0.27	-2.945	-1.96 **	-3.427	-2.14 **	-6.192	-2.12 **	-3.614	-2.04 **
Industry and Year FE		YES		YES		YES		YES		YES	
Adjusted R^2		0.309		0.231		0.155		0.166		0.182	
Observations		8,061		8,061		8,061		8,061		8,061	

TABLE 3 (Cont'd)

Notes to Table 3:

RM_CFO is a real earnings management proxy that negatively affects cash flows from operations. RM_PROD is a real earnings management proxy that negatively affects production. RM_DISX is a real earnings management proxy that negatively affects discretionary expenses. RM1 and RM2 are aggregate measures of real earnings management. All measures of real earnings management are multiplied by 100 for the ease of exposition. Exec_Horizon is the subordinate executives' decision horizon. Exec_PayRatio is the subordinate executives' ability to influence the CEO. Int_Governance is the firm's overall internal governance, measured as the sum of the standardized value of Exec_Horizon and Exec_PayRatio. CEO_Horizon is the CEO's decision horizon. CEO_Comp is the CEO's logged total compensation. CEO_PPS is the pay-for-performance sensitivity of the CEO's portfolio of equity. Firm_Age is the age of the firm. N_Analyst is the number of analysts following the firm. ROA is the return on assets in the current fiscal year. Size is the logged value of total assets in the current fiscal year. B/M is the book-to-market ratio in the current fiscal year. Leverage is the leverage ratio in the current fiscal year. IMR is the inverse mills ratio from the first-stage probit regression of just meet-or-beat earnings expectations on its determinants. Standard errors are corrected for cross-sectional and time-series dependence (Petersen 2009; Gow et al. 2010). ***, **, and * indicate statistical significance at the 0.01, 0.05 and 0.10 level or better, respectively (one-tailed test where there is a prediction, two-tailed test otherwise).

TABLE 4
Internal Governance and Real Earnings Management conditioning on Key Executives' Contribution

Panel A: Industry Research and Development Intensity

	Pred. H2	(1) RM1		(2) RM2	
		Coef.	*t-stats*	*Coef.*	*t-stats*
Int_Governance		-0.437	-0.61	-0.542	-1.18
IND_RD		8.102	1.02	6.111	1.25
Int_Governance*IND_RD	—	-3.308	-2.86 ***	-1.924	-2.93 ***
CEO_Horizon		-0.119	-1.18	-0.085	-1.54
CEO_Comp		-5.693	-4.64 ***	-3.706	-5.75 ***
CEO_PPS		-0.442	-0.09	-0.584	-0.21
Firm_Age		-0.178	-2.66 ***	-0.064	-1.71 *
N_Analyst		-0.907	-4.61 ***	-0.573	-5.30 ***
ROA		-45.540	-3.35 ***	-27.400	-3.56 ***
Size		9.618	8.36 ***	5.113	7.68 ***
B/M		24.360	6.17 ***	15.730	7.42 ***
Leverage		21.760	3.43 ***	18.280	4.99 ***
IMR		-6.460	-1.75 *	-3.672	-1.63
Industry and Year FE		YES		YES	
Adjusted R^2		0.168		0.181	
Observations		5,226		5,226	

Panel B: Factor Analysis of Geographical Operating Complexity

	Pred. H2	(1) RM1		(2) RM2	
		Coef.	*t-stats*	*Coef.*	*t-stats*
Int_Governance		-1.255	-1.98 **	-0.833	-2.06 **
GEO_Complexy		-12.820	-4.76 ***	-6.939	-4.30 ***
Int_Governance*GEO_Complexy	—	-1.253	-0.98	-0.989	-1.28 *
CEO_Horizon		0.033	0.29	-0.005	-0.07
CEO_Comp		-4.986	-3.94 ***	-3.066	-4.22 ***
CEO_PPS		-1.685	-0.42	-1.898	-0.77
Firm_Age		-0.179	-2.82 ***	-0.075	-2.05 **
N_Analyst		-0.910	-6.22 ***	-0.601	-6.53 ***
ROA		-30.420	-1.82 *	-20.120	-2.10 **
Size		9.813	8.78 ***	5.346	7.73 ***
B/M		23.370	6.71 ***	15.220	7.89 ***
Leverage		30.620	5.94 ***	21.620	7.04 ***
IMR		-8.472	-2.29 **	-4.097	-1.81 *
Industry and Year FE		YES		YES	
Adjusted R^2		0.188		0.200	
Observations		4,943		4,943	

TABLE 4 (Cont'd)

Notes to Table 4:

RM1 and RM2 are aggregate measures of real earnings management. All measures of real earnings management are multiplied by 100 for the ease of exposition. Int_Governance is the firm's overall internal governance, measured as the sum of the standardized value of Exec_Horizon and Exec_PayRatio. IND_RD is an indicator equals one (zero) if the firm-year observation is in the top (bottom) tercile of industry research and development intensity. GEO_Complexy is an indicator equals one (zero) if the firm-year observation is in the top (bottom) tercile of the first principle component of the following three variables: 1) number of geographical segments; 2) geographical sales concentration and; 3) percentage of foreign sales. CEO_Horizon is the CEO's decision horizon. CEO_Comp is the CEO's logged total compensation. CEO_PPS is the pay-for-performance sensitivity of the CEO's portfolio of equity. Firm_Age is the age of the firm. N_Analyst is the number of analysts following the firm. ROA is the return on assets in the current fiscal year. Size is the logged value of total assets in the current fiscal year. B/M is the book-to-market ratio in the current fiscal year. Leverage is the leverage ratio in the current fiscal year. IMR is the inverse mills ratio from the first-stage probit regression of just meet-or-beat earnings expectations on its determinants. Standard errors are corrected for cross-sectional and time-series dependence (Petersen 2009; Gow et al. 2010). ***, **, and * indicate statistical significance at the 0.01, 0.05 and 0.10 level or better, respectively (one-tailed test where there is a prediction, two-tailed test otherwise).

TABLE 5
Internal Governance and Real Earnings Management conditioning on Corporate Governance

	Pred. H3	(1) RM1		(2) RM2	
		Coef.	*t-stats*	*Coef.*	*t-stats*
Int_Governance		-0.772	-1.20	-0.516	-1.30
CORP_GOV		-7.580	-3.02 ***	-4.646	-3.14 ***
*Int_Governance*CORP_GOV*	—	-2.326	-1.86 **	-1.389	-1.94 **
CEO_Horizon		-0.139	-1.22	-0.098	-1.41
CEO_Comp		-3.810	-3.49 ***	-2.070	-3.23 ***
CEO_PPS		-8.910	-1.96 *	-5.839	-2.19 **
Firm_Age		-0.139	-2.25 **	-0.058	-1.69 *
N_Analyst		-0.741	-3.95 ***	-0.533	-4.75 ***
ROA		-19.190	-1.21	-11.400	-1.10
Size		8.668	7.71 ***	4.787	6.86 ***
B/M		23.680	5.81 ***	15.810	6.86 ***
Leverage		16.880	2.39 **	14.460	3.63 ***
IMR		-3.926	-0.76	-3.348	-0.98
Industry and Year FE		YES		YES	
Adjusted R^2		0.166		0.178	
Observations		3,209		3,209	

Notes to Table 5:

RM1 and RM2 are aggregate measures of real earnings management. All measures of real earnings management are multiplied by 100 for the ease of exposition. Int_Governance is the firm's overall internal governance, measured as the sum of the standardized value of Exec_Horizon and Exec_PayRatio. CORP_GOV is an indicator equals one (zero) if the firm-year observation is in the top (bottom) tercile of the first principle component of the following two variables: 1) percentage of independent directors and; 2) institutional ownership. CEO_Horizon is the CEO's decision horizon. CEO_Comp is the CEO's logged total compensation. CEO_PPS is the pay-for-performance sensitivity of the CEO's portfolio of equity. Firm_Age is the age of the firm. N_Analyst is the number of analysts following the firm. ROA is the return on assets in the current fiscal year. Size is the logged value of total assets in the current fiscal year. B/M is the book-to-market ratio in the current fiscal year. Leverage is the leverage ratio in the current fiscal year. IMR is the inverse mills ratio from the first-stage probit regression of just meet-or-beat earnings expectations on its determinants. Standard errors are corrected for cross-sectional and time-series dependence (Petersen 2009; Gow et al. 2010). ***, **, and * indicate statistical significance at the 0.01, 0.05 and 0.10 level or better, respectively (one-tailed test where there is a prediction, two-tailed test otherwise).

TABLE 6
Internal Governance and Accrual-based Earnings Management

Panel A: Internal Governance and Accruals-based Earnings Management

	Pred.	(1) ACCEM		(2) ACCEM		(3) ACCEM	
		Coef.	*t-stats*	*Coef.*	*t-stats*	*Coef.*	*t-stats*
Int_Governance	+/—	-0.193	-2.22 **	-0.121	-1.36	-0.027	-0.29
CEO_Horizon		-0.025	-1.75 *	-0.020	-1.39	-0.013	-0.87
CEO_Comp		-0.496	-3.33 ***	-0.322	-2.14 **	-0.137	-0.89
CEO_PPS		-0.859	-1.68 *	-0.807	-1.57	-0.663	-1.23
Firm_Age		0.035	4.33 ***	0.040	4.95 ***	0.041	5.20 ***
N_Analyst		-0.062	-2.27 **	-0.032	-1.18	0.007	0.26
ROA		37.490	9.63 ***	38.710	10.31 ***	40.240	11.30 ***
Size		0.054	0.31	-0.258	-1.51	-0.509	-3.28 ***
B/M		4.323	6.76 ***	3.465	5.42 ***	2.510	3.99 ***
Leverage		2.397	2.50 **	1.550	1.56	0.196	0.20
RM1				0.036	8.57 ***		
RM2						0.120	13.08 ***
IMR		0.167	0.31	0.387	0.72	0.599	1.14
Industry and Year FE		YES		YES		YES	
Adjusted R^2		0.134		0.149		0.195	
Observations		8,005		8,005		8,005	

Panel B: Internal Governance and Real Earnings Management

	Pred.	(1) RM1		(2) RM2	
		Coef.	*t-stats*	*Coef.*	*t-stats*
Int_Governance	—	-1.887	-3.77 ***	-1.269	-4.34 ***
CEO_Horizon		-0.125	-1.50	-0.087	-1.86 *
CEO_Comp		-4.533	-4.28 ***	-2.685	-4.59 ***
CEO_PPS		-1.015	-0.28	-1.124	-0.51
Firm_Age		-0.153	-3.18 ***	-0.072	-2.68 ***
N_Analyst		-0.801	-6.03 ***	-0.538	-7.40 ***
ROA		-52.160	-4.40 ***	-44.960	-6.06 ***
Size		8.571	9.94 ***	4.645	9.05 ***
B/M		21.460	6.42 ***	12.510	6.79 ***
Leverage		22.120	3.86 ***	16.870	5.53 ***
ACCEM		0.492	6.47 ***	0.590	8.43 ***
IMR		-6.125	-2.11 **	-3.691	-2.17 **
Industry and Year FE		YES		YES	
Adjusted R^2		0.179		0.238	
Observations		8,005		8,005	

TABLE 6 (Cont'd)

Notes to Table 6:
ACCEM is the measure of discretionary accruals computed using the Modified Jones model, multiplied by 100 for the ease of exposition. Int_Governance is the firm's overall internal governance, measured as the sum of the standardized value of Exec_Horizon and Exec_PayRatio. CEO_Horizon is the CEO's decision horizon. CEO_Comp is the CEO's logged total compensation. CEO_PPS is the pay-for-performance sensitivity of the CEO's portfolio of equity. Firm_Age is the age of the firm. N_Analyst is the number of analysts following the firm. ROA is the return on assets in the current fiscal year. Size is the logged value of total assets in the current fiscal year. B/M is the book-to-market ratio in the current fiscal year. Leverage is the leverage ratio in the current fiscal year. RM1 and RM2 are aggregate measures of real earnings management, multiplied by 100 for the ease of exposition. IMR is the inverse mills ratio from the first-stage probit regression of just meet-or-beat earnings expectations on its determinants. Standard errors are corrected for cross-sectional and time-series dependence (Petersen 2009; Gow et al. 2010). ***, **, and * indicate statistical significance at the 0.01, 0.05 and 0.10 level or better, respectively (one-tailed test where there is a prediction, two-tailed test otherwise).

TABLE 7
Internal Governance and Real Earnings Management - Instrumental Variables
(2SLS) Approach

	Pred.	(1)		(2)		(3)	
	H1	Int_Governance		RM1		RM2	
		Coef.	*t-stats*	*Coef.*	*t-stats*	*Coef.*	*t-stats*
Predicted_Int_Governance	—			-23.910	-3.47 ***	-14.880	-3.56 ***
CEO_Horizon		0.017	4.11 ***	0.222	1.33	0.120	1.22
CEO_Comp		-0.706	-13.04 ***	-20.200	-3.90 ***	-12.450	-3.96 ***
CEO_PPS		1.181	8.24 ***	24.840	2.48 **	14.540	2.43 **
Firm_Age		-0.010	-6.70 ***	-0.354	-3.81 ***	-0.185	-3.34 ***
N_Analyst		0.017	3.98 ***	-0.429	-1.90 *	-0.328	-2.45 **
ROA		-0.724	-2.08 **	-51.470	-3.58 ***	-33.770	-3.84 ***
Size		0.184	4.49 ***	12.570	6.99 ***	7.115	6.32 ***
B/M		-0.256	-2.47 **	18.290	4.06 ***	11.780	4.62 ***
Leverage		-0.175	-1.01	19.500	2.59 ***	15.860	3.81 ***
IMR		0.008	0.08	-5.605	-1.41	-3.252	-1.34
Outside_CEO		0.249	5.03 ***				
Named_Exec		0.065	3.48 ***				
Industry and Year FE		YES		YES		YES	
Adjusted R^2		0.320		0.176		0.190	
Observations		8,061		8,061		8,061	
Kleibergen-Paap rk Wald F statistic				16.65 ***		16.65 ***	
(Weak identification test)							
Hansen J-statistic				0.002		0.005	
(Over-identification test of all instr.)							

Notes to Table 7:

RM1 and RM2 are aggregate measures of real earnings management. All measures of real earnings management are multiplied by 100 for the ease of exposition. Int_Governance is the firm's overall internal governance, measured as the sum of the standardized value of Exec_Horizon and Exec_PayRatio. CEO_Horizon is the CEO's decision horizon. CEO_Comp is the CEO's logged total compensation. CEO_PPS is the pay-for-performance sensitivity of the CEO's portfolio of equity. Firm_Age is the age of the firm. N_Analyst is the number of analysts following the firm. ROA is the return on assets in the current fiscal year. Size is the logged value of total assets in the current fiscal year. B/M is the book-to-market ratio in the current fiscal year. Leverage is the leverage ratio in the current fiscal year. IMR is the inverse mills ratio from the first-stage probit regression of just meet-or-beat earnings expectations on its determinants. Outside_CEO is an indicator equals one if the current CEO is recruited from outside, and zero otherwise. Named_Exec is the number of named executives in the annual proxy statement besides the CEO. Standard errors are corrected for cross-sectional and time-series dependence (Petersen 2009; Gow et al. 2010). ***, **, and * indicate statistical significance at the 0.01, 0.05 and 0.10 level or better, respectively (one-tailed test where there is a prediction, two-tailed test otherwise).

TABLE 8
Alternative Measure of Key Executives' Power and Real Earnings Management

	Pred.	(1) RM1		(2) RM2		(3) RM1		(4) RM2	
		Coef.	*t-stats*	*Coef.*	*t-stats*	*Coef.*	*t-stats*	*Coef.*	*t-stats*
Exec_Horizon	—	-0.279	-2.77 ***	-0.194	-3.21 ***	-0.264	-2.63 ***	-0.184	-3.05 ***
Other_Director	—	-2.718	-2.61 ***	-1.381	-2.32 ***	-2.672	-2.57 ***	-1.350	-2.28 **
Exec_PayRatio	—					-5.101	-3.45 ***	-3.504	-4.21 ***
CEO_Horizon		-0.150	-1.78 *	-0.110	-2.32 **	-0.138	-1.65 *	-0.102	-2.17 **
CEO_Comp		-3.322	-3.59 ***	-1.941	-3.83 ***	-5.281	-4.61 ***	-3.286	-5.26 ***
CEO_PPS		-3.345	-0.94	-2.908	-1.36	-1.320	-0.37	-1.517	-0.70
Firm_Age		-0.125	-2.57 **	-0.044	-1.62	-0.131	-2.73 ***	-0.048	-1.79 *
N_Analyst		-0.856	-6.53 ***	-0.594	-8.02 ***	-0.826	-6.22 ***	-0.573	-7.65 ***
ROA		-32.040	-2.80 ***	-21.780	-3.10 ***	-32.800	-2.86 ***	-22.300	-3.17 ***
Size		8.280	9.17 ***	4.408	7.77 ***	9.047	9.92 ***	4.935	8.64 ***
B/M		24.180	7.24 ***	15.460	8.34 ***	23.570	7.05 ***	15.050	8.07 ***
Leverage		23.810	4.31 ***	18.560	6.29 ***	23.360	4.20 ***	18.250	6.15 ***
IMR		-6.216	-2.14 **	-3.660	-2.08 **	-5.959	-2.05 **	-3.484	-1.97 **
Industry and Year FE		YES		YES		YES		YES	
Adjusted R^2		0.165		0.179		0.168		0.183	
Observations		8,061		8,061		8,061		8,061	

Notes to Table 8:

RM1 and RM2 are aggregate measures of real earnings management. All measures of real earnings management are multiplied by 100 for the ease of exposition. Other_Director is the number of independent directorships in other firms held by key subordinate executives. Exec_Horizon is the subordinate executives' decision horizon. Exec_PayRatio is the subordinate executives' ability to influence the CEO. CEO_Horizon is the CEO's decision horizon. CEO_Comp is the CEO's logged total compensation. CEO_PPS is the pay-for-performance sensitivity of the CEO's portfolio of equity. Firm_Age is the age of the firm. N_Analyst is the number of analysts following the firm. ROA is the return on assets in the current fiscal year. Size is the logged value of total assets in the current fiscal year. B/M is the book-to-market ratio in the current fiscal year. Leverage is the leverage ratio in the current fiscal year. IMR is the inverse mills ratio from the first-stage probit regression of just meet-or-beat earnings expectations on its determinants. Standard errors are corrected for cross-sectional and time-series dependence (Petersen 2009; Gow et al. 2010). ***, **, and * indicate statistical significance at the 0.01, 0.05 and 0.10 level or better, respectively (one-tailed test where there is a prediction, two-tailed test otherwise).

TABLE 9

Internal Governance and Real Earnings Management conditioning on the passage of SOX

	Pred.	(1) RM1		(2) RM2	
		Coef.	t-stats	Coef.	t-stats
Int_Governance		-1.037	-1.86 *	-0.913	-3.09 ***
Post_SOX		-2.705	-0.95	-1.403	-0.80
*Int_Governance*Post_SOX*	—	-2.114	-3.09 ***	-1.094	-2.88 ***
CEO_Horizon		-0.143	-1.71 *	-0.106	-2.26 **
CEO_Comp		-5.125	-4.64 ***	-3.195	-5.15 ***
CEO_PPS		-1.443	-0.40	-1.815	-0.84
Firm_Age		-0.144	-2.97 ***	-0.055	-1.99 **
N_Analyst		-0.848	-6.38 ***	-0.571	-7.64 ***
ROA		-32.420	-2.74 ***	-21.150	-3.01 ***
Size		8.868	10.05 ***	4.804	8.47 ***
B/M		22.900	7.23 ***	14.630	8.07 ***
Leverage		23.130	4.21 ***	18.170	6.07 ***
Time		-0.182	-0.84	-0.079	-0.52
IMR		-7.360	-2.66 ***	-3.844	-2.28 **
Industry FE		YES		YES	
Adjusted R^2		0.163		0.178	
Observations		8,061		8,061	

Notes to Table 9:

RM1 and RM2 are aggregate measures of real earnings management. All measures of real earnings management are multiplied by 100 for the ease of exposition. Int_Governance is the firm's overall internal governance, measured as the sum of the standardized value of Exec_Horizon and Exec_PayRatio. Post_SOX is an indicator equals one if fiscal year is on or after 2002, and zero otherwise. CEO_Horizon is the CEO's decision horizon. CEO_Comp is the CEO's logged total compensation. CEO_PPS is the pay-for-performance sensitivity of the CEO's portfolio of equity. Firm_Age is the age of the firm. N_Analyst is the number of analysts following the firm. ROA is the return on assets in the current fiscal year. Size is the logged value of total assets in the current fiscal year. B/M is the book-to-market ratio in the current fiscal year. Leverage is the leverage ratio in the current fiscal year. Time is a time trend variable which equals to the difference between the current fiscal year and 1992. IMR is the inverse mills ratio from the first-stage probit regression of just meet-or-beat earnings expectations on its determinants. Standard errors are corrected for cross-sectional and time-series dependence (Petersen 2009; Gow et al. 2010). ***, **, and * indicate statistical significance at the 0.01, 0.05 and 0.10 level or better, respectively (one-tailed test where there is a prediction, two-tailed test otherwise).

TABLE 10
TABLE 10
Internal Governance and Real Earnings Management – Falsification Test

	(1) RM1		(2) RM2	
	Coef.	*t-stats*	*Coef.*	*t-stats*
Int_Governance	-0.971	-1.15	-0.367	-0.69
CEO_Horizon	-0.265	-1.79 *	-0.178	-2.16 **
CEO_Comp	-1.219	-0.90	-0.732	-1.12
CEO_PPS	0.832	0.09	0.671	0.12
Firm_Age	-0.133	-2.53 **	-0.071	-2.26 **
N_Analyst	-0.806	-2.87 ***	-0.471	-2.88 ***
ROA	13.700	1.15	4.081	0.53
Size	8.118	4.89 ***	4.187	5.12 ***
B/M	11.190	7.07 ***	7.314	7.59 ***
Leverage	17.450	2.76 ***	17.100	5.19 ***
IMR	-2.358	-0.66	0.286	0.12
Industry and Year FE	YES		YES	
Adjusted R^2	0.147		0.154	
Observations	1,869		1,869	

Notes to Table 10:
RM_CFO is a real earnings management proxy that negatively affects cash flows from operations. RM_PROD is a real earnings management proxy that negatively affects production. RM_DISX is a real earnings management proxy that negatively affects discretionary expenses. RM1 and RM2 are aggregate measures of real earnings management. All measures of real earnings management are multiplied by 100 for the ease of exposition. Int_Governance is the firm's overall internal governance, measured as the sum of the standardized value of Exec_Horizon and Exec_PayRatio. CEO_Horizon is the CEO's decision horizon. CEO_Comp is the CEO's logged total compensation. CEO_PPS is the pay-for-performance sensitivity of the CEO's portfolio of equity. Firm_Age is the age of the firm. N_Analyst is the number of analysts following the firm. ROA is the return on assets in the current fiscal year. Size is the logged value of total assets in the current fiscal year. B/M is the book-to-market ratio in the current fiscal year. Leverage is the leverage ratio in the current fiscal year. IMR is the inverse mills ratio from the first-stage probit regression of just meet-or-beat earnings expectations on its determinants. Standard errors are corrected for cross-sectional and time-series dependence (Petersen 2009; Gow et al. 2010). ***, **, and * indicate statistical significance at the 0.01, 0.05 and 0.10 level or better, respectively (one-tailed test where there is a prediction, two-tailed test otherwise).