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ORIGINAL RESEARCH

The influence of CEO and CFO power on accruals and real earnings management

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Abstract In this study, we examine the effect of CEO and CFO power on both accruals and real earnings management (AEM and REM, respectively), and the extent to which CEO and CFO power mitigate the effect of one another on AEM and REM. We further examine whether the passage of the Sarbanes-Oxley Act (SOX) altered these effects. In the pre-SOX period, we find that AEM (REM) is greater when the CEO (CFO) is powerful relative to the CFO (CEO). In the post-SOX period, however, we find that the effect of relative CEO power on AEM subsides, whereas the effect of relative CFO power on REM persists. Additionally, we find evidence to suggest that powerful CFOs inhibit the AEM preferences of powerful CEOs in both the pre- and post-SOX periods. Finally, we find evidence to suggest that powerful CEOs inhibit the REM preferences of powerful CEOs in the pre-SOX period, but not in the post-SOX period. Collectively, our results suggest that the power of the CEO relative to the CFO is an important factor in the both the type and magnitude of earnings management.

Keywords Earnings management · Accruals · Real earnings management · CEO power · CFO power

1 Introduction

The purpose of this study is to further our understanding of the financial reporting implications of the CEO/CFO relationship by examining the influence of CEO power in the presence of CFO power on the financial reporting process. In so doing, we extend the prior

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literature in at least two ways. First, we provide evidence on the relationship between executive power (both CEO and CFO) and preferences for accrual earnings management (AEM), and real earnings management (REM). Second, we investigate whether CFO (CEO) power mitigates the influence of powerful CEOs (CFOs) in managing earnings (AEM or REM).

Prior research suggests that CEOs and CFOs potentially have different preferences with respect to AEM and REM. CEOs are responsible for the strategic operations of the firm (i.e., current and future performance of the firm), while CFOs are ultimately responsible for the quality of financial reporting (Geiger and North 2006; Feng et al. 2011). Under the assumption that REM has negative consequences for the future performance of the firm (Bhojraj et al. 2009; Zang 2012), the presence of REM conflicts with the fiduciary responsibility of the CEO to the stakeholders of the firm. Similarly, assuming that AEM degrades the quality of financial reporting (Francis et al. 2008; Kim et al. 2012), the presence of AEM conflicts with the monitoring role of the CFO in the financial reporting process (Feng et al. 2011).

Consistent with the above scenario, Graham et al.'s (2005, p. 36) survey evidence suggests that CFOs indicate a preference for REM over AEM in order to meet earnings targets. Further, Feng et al. (2011) find that when both the CEO and the CFO are charged in an SEC enforcement action, the CEO is significantly more likely to have been accused of orchestrating the AEM. In summary, this literature suggests that CEOs who have the ability to influence the earnings management process will rely on AEM, while CFOs who have the ability to influence the earnings management process will rely on REM. Our study extends prior literature by empirically investigating whether CEOs and CFOs have different earnings management technique preferences.

While there is substantial evidence in the literature regarding the individual influence of both CEOs and CFOs over the financial reporting process (e.g., Geiger and North 2006; Jiang et al. 2010; Feng et al. 2011), how that influence is affected by the interplay between the two executives is not known. CFOs are the agent of CEOs (Graham and Harvey 2001), and a CEO has the power to replace a CFO who does not follow his/her preferences (Mian 2001; Fee and Hadlock 2004); thus, it may be the case that CEO preferences will dominate CFO preferences. However, power circulation theory challenges the notion that CEOs can indefinitely perpetuate their power (Ocasio 1994; Shen and Cannella 2002). Instead, the theory predicts that CEO power can be dissipated, in part due to contestation from other executives, who are viewed as rivals for the CEO's position. In the specific context of financial reporting, asymmetric benefits and costs across executives could be factors as well. For example, the argument that CFOs bear higher potential litigation costs and reap fewer benefits from accounting manipulations than do CEOs (Mian 2001; Feng et al. 2011), suggests that this is likely a setting where CFOs will contest the CEO.

The likelihood that CFOs, who are subordinate to the CEO, will be able to successfully contest the CEO may be conditional upon the power of the CFO relative to the CEO. Thus, we extend prior research by examining the possibility that the ability of CEOs or CFOs to influence the financial reporting process will be a function of the power of one executive relative to the other. Specifically, we expect to see more AEM when CEO power is high relative to the CFO, and more REM when CFO power is high relative to the CEO. Further, we expect that the level of AEM (REM) obtained by powerful CEOs (CFOs) will be mitigated when the CFO (CEO) is also powerful.

Prior research suggests that SOX altered firm-level earnings management behavior (e.g., Cohen et al. 2008; Koh et al. 2008; Bartov and Cohen 2009). However, while prior research provides compelling evidence that firms altered their earnings management

behavior around SOX, how SOX interacted with the relative power of CEOs and CFOs and their preferences for AEM versus REM is not known. We expect that CEO earnings management preferences were altered by SOX, which imposes significant penalties on CEOs and CFOs caught engaging in AEM. If CEOs' substitute REM for AEM in the post-SOX period, there are three implications regarding the interaction between CEO and CFO earnings management preferences. First, when the CEO is powerful, we may observe less AEM, and more REM in the post-SOX period relative to the pre-SOX period. Second, there may be less need for powerful CFOs to mitigate powerful CEO attempts at AEM in the post-SOX period. Finally, the level of REM obtained by a powerful CFO may not be mitigated when the CEO is also powerful in the post-SOX period.

When examining the earnings management preferences for CEOs and CFOs, we find that, when CEO power is high relative to CFO power, AEM is significantly larger, but only in the pre-SOX period, and that REM is not affected by the presence of a relatively powerful CEO. On the other hand, we find that when CFO power is high relative to CEO power, REM is larger in both the pre- and post-SOX periods, and that AEM is not affected by the presence of a relatively powerful CFO. Consistent with expectations, our evidence suggests that CEOs' preferred earnings management technique is AEM while the preferred technique of CFOs is REM.

Turning to the ability of powerful CEOs (CFOs) to mitigate the earnings management behavior of powerful CFOs (CEOs), we find that AEM is significantly lower for powerful CEOs in the presence of a powerful CFO and that this relationship holds for both the pre- and post-SOX periods. That is, powerful CFOs appear to limit the opportunity of powerful CEOs to engage in AEM. This evidence suggests that powerful CFOs have significant influence over the financial reporting process. Turning to REM, we find evidence that powerful CEOs inhibit the REM behavior of powerful CFOs in the pre-SOX period. In the post-SOX period our evidence suggests that powerful CEOs do not inhibit the aggressive influence of powerful CFOs on REM. That is, powerful CEOs appear to endorse powerful CFO attempts to engage in REM after SOX. Taken together our evidence is consistent with power circulation theory. In particular, our evidence suggests that powerful executives (whether it be the CEO or CFO) have strong incentives to monitor and act on the perceived shortcomings of other executives, especially for actions such as REM or AEM that will reflect negatively on the individual executive.

In summary, our results indicate that, in the pre-SOX period, AEM is more likely when CEO power is high relative to CFO power. In both the pre-SOX and post-SOX periods, REM is more likely when CFO power is high relative to CEO power. These results are consistent with the primary job responsibilities of CEOs and CFOs (e.g., Graham et al. 2005). Consistent with research finding that REM is substituted for AEM in the post-SOX period, we find that CEOs no longer prefer AEM over REM post-SOX. With respect to the interaction between CEOs and CFOs, we find that powerful CEOs are able to limit the REM obtained by powerful CFOs and that powerful CFOs are able to limit AEM obtained by powerful CEOs. Taken together, the results suggest that the power of the CEO relative to the CFO is an important factor in the type and the magnitude of earnings management. Essentially, the ability of a CEO or a CFO to influence the earnings management process is in part a function of his/her power relative to the opposing executive's power.

The remainder of this paper is organized as follows. In the next section, we review prior related literature and propose empirical hypotheses. Section 3 describes our research design, sample selection, and descriptive statistics. In Sect. 4, we present the results of multivariate testing. Finally, in Sect. 5, we offer conclusions and implications from our study.

2 Background literature and hypothesis development

2.1 Influence of CEO/CFO power on the financial reporting process

Adams et al. (2005) argue that the risk from judgment errors is not well-diversified in a firm in which the CEO primarily makes all of the consequential decisions. That is, they suggest the likelihood of either very good or very bad decisions is higher in an organization in which the CEO's power to influence decisions is greater than in an organization in which other executives are involved in the decision-making process. Adams et al. (2005) further suggest that more powerful CEOs can exert their will and thereby influence financial reporting to a greater extent than less powerful CEOs. Consistent with these notions, a number of studies report evidence that greater CEO power leads to a lower quality of earnings (e.g., Adams et al. 2005; Efendi et al. 2007; Feng et al. 2011).

Feng et al. (2011) report accounting manipulations are more likely when CEO power is high. They conclude that CFOs become involved in material accounting manipulations because they succumb to the power of the CEO.[1] Efendi et al. (2007) argue that combining the position of CEO and board chair reduces board independence, thus impairing the monitoring of the CEO. They suggest that less effective monitoring of the CEO will lead to a greater likelihood of misstated financial statements. Consistent with their hypothesis, Efendi et al. (2007) report that firms with a CEO who also serves as board chair are more likely to restate financial statements than firms without such duality. Adams et al. (2005) report that stock returns are more variable for firms run by powerful CEOs.[2] While the extant literature is consistent with the conclusion that powerful CEOs preside over firms that have significantly poorer earnings quality than firms with less powerful CEOs, it is not clear how powerful CFOs will alter the effect of CEO power on earnings quality.

Although the prior literature suggests the CFO has ultimate responsibility for the management of the financial system (Mian 2001; Jiang et al. 2010), CFOs are the agents of CEOs (Graham and Harvey 2001), and a CEO has the power to replace a CFO who does not follow his/her preferences (Mian 2001; Fee and Hadlock 2004). Importantly, recent work by Geiger and North (2006), Jiang et al. (2010), and Feng et al. (2011) suggest that the dynamic among executives is not consistent with the traditional notion of a homogenous, CEO-dominated management team. In particular, the evidence suggests that CEOs and CFOs in certain circumstances have conflicting incentives with respect to financial reporting. One potential explanation for the conflict between CEOs and CFOs is evidence which suggests that CFOs appear to suffer greater loss of reputation and wealth relative to CEOs upon termination of employment (Mian 2001; Feng et al. 2011).

Geiger and North (2006) examine 700 firms that hired a new CFO over the years 1994–2000. They report a firm's earnings quality significantly improves subsequent to hiring a new CFO. Consistent with that conclusion, they report that the firm's accrual position moves from abnormally income-increasing to abnormally income-decreasing subsequent to the hiring of a new CFO. They also report that this finding was not affected by the concurrent replacement of the CEO. The clear implication of this result is that CFOs appear to exert their own influence on the financial reporting process to improve reporting

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[1] Importantly for our analysis, Feng et al. (2011) do not include measures of CFO power in their analyses. Thus, the extent to which an interactive effect exists between powerful CEOs and CFOs is an unresolved empirical question.

[2] Adams et al. (2005) conclude that their results suggest that firms with powerful CEOs are those with the most extreme performance, both good and bad.

quality separate from that exerted by CEOs. That said, their results are also consistent with the "big bath hypothesis" whereby new managers suppress current earnings to improve the likelihood of positive future performance (Hazarika et al. 2012; DeAngelo 1988). Consistent with this notion, Zang (2008) finds that turnover among the firm's top managers (i.e., the three highest paid executives) is associated with larger goodwill impairment losses in the year of turnover (big bath behavior). As such, the Geiger and North (2006) result could be driven by turnover events rather than a long-term preference for conservative (i.e., higher quality) reporting.

Jiang et al. (2010) extend prior research (Bergstresser and Philippon 2006) by examining the influence of equity-based incentives on the earnings management behavior of CEOs and CFOs. They report that the magnitude of accruals and the likelihood of beating analysts' earnings forecasts are more sensitive to CFO equity incentives than to those of the CEO. As such, Jiang et al. (2010) suggest CFO equity incentives dominate the impact of CEO equity incentives with respect to financial reporting. They also report that the result for the likelihood of beating analysts' forecasts holds for both the pre- and post-SOX time periods. Their results suggest that CFOs have influence over the financial reporting process that is motivated by the strength of their equity incentives. Importantly, their results also suggest that the influence of the CFO may be dominant to that of the CEO in this regard. Consistent with prior studies which find that AEM diminishes post-SOX (e.g., Cohen et al. 2008), Jiang et al. (2010) find no evidence of a relation between AEM and equity-based incentives post-SOX.

Feng et al. (2011) report CFOs become involved in material accounting manipulations because they succumb to the pressure of powerful CEOs. They examine a sample of 74 firms (116 firm-year observations) that are subject to SEC enforcement actions for alleged accounting manipulations. In addition to relative equity incentives between CEO and CFO, Feng et al. also analyze the influence of CEO power. They measure power based on the CEO's dual service as board chair, role as a founder of the firm, and share of compensation paid to the senior management team. Feng et al. (2011) report that CFOs of manipulation firms bear substantial legal costs when involved in accounting manipulations. They also find that CEOs of manipulation firms have higher equity incentives and more power than CEOs of matched firms. On the other hand, they find no evidence that the equity incentives of CFOs for manipulation firms are different from CFOs of the matched sample. In this regard their evidence conflicts with Jiang et al. (2010) who report that CFO equity incentives dominate CEO equity incentives with respect to earnings management.

Our study adds to the literature beyond Geiger and North (2006), Jiang et al. (2010) and Feng et al. (2011) in several respects. First, Geiger and North (2006) and Feng et al. (2011) do not test for any potential SOX effect. Second, Geiger and North (2006) and Jiang et al. (2010) do not examine the influence of CEO or CFO power on the financial reporting process. Third, none of these studies include an examination of REM thus limiting their conclusions regarding the overall earnings management behavior of CEOs and CFOs. As we suggest above and document later in the text, REM may be the preferred method of managing earnings for CFOs. Fourth, our study is more related to financial reporting in routine circumstances rather than failed reporting associated with SEC sanctions (Feng et al. 2011) or hiring of new CFOs (Geiger and North 2006). Finally, while Feng et al. (2011) examine the influence of CEO power they do not do the same with regard to CFOs, and most importantly, none of these studies examine the influence of a powerful CEO (CFO) in the presence of a powerful CFO (CEO).

2.2 Hypotheses development

2.2.1 CEO and CFO earnings management technique preference: H1

The focus of this study is on accrual earnings management (AEM), and real earnings management (REM). We focus on these measures of earnings management for two reasons. First, investigating how preferences for these two earnings management activities differs between CEOs and CFOs allows us to provide evidence on the potential economic implications of accounting choices for specific executives (i.e., the CEO or CFO). In particular, we can provide evidence whether the costs that CEOs and/or CFOs bear for manipulating earnings affect their decisions about how to manage earnings. Second, different CEO and CFO preferences for the two earnings management techniques enables us to examine how differences in power between the CEO and the CFO may affect both the likelihood of earnings management and the method of earnings management used.

This insight could be especially relevant given that CEOs and CFOs have uniquely different responsibilities with the firm, potentially leading to different preferences for earnings management techniques. For example, CEOs are responsible for strategy and overall long-term performance of the firm. Consistent with that notion, prior research finds that firm under-performance is a significant predictor of CEO turnover (e.g., Farrell and Whidbee 2003; Brickley 2003; Murphy and Zimmerman 1993). In addition, prior research suggests that REM in certain circumstances has negative consequences for the future performance of the firm (Bhojraj et al. 2009; Zang 2012). Given the potential negative consequences of REM and the ultimate responsibility of the CEO, REM may not be the earnings management technique of choice of CEOs.

In contrast to the CEO, the primary responsibility of the CFO is monitoring the financial reporting process of the firm (Mian 2001; Indjejikian and Matejka 2009; Jiang et al. 2010). Consistent with that notion, prior research finds that CFOs are held more accountable for accounting irregularities than CEOs. Hennes et al. (2008) report CEO and CFO turnover rates are significantly higher in the months surrounding a financial restatement. However, they also find that the turnover rate is substantially higher for CFOs than for CEOs. Among restating firms experiencing turnover in the 13 months surrounding the restatements the turnover rate is 49% for CEOs and 64% for CFOs when the restatement is the result of an accounting irregularity (i.e., intentional misstatement). Similarly, the turnover rate is 8% for CEOs and 12% for CFOs when the restatement is the result of an unintentional error. Consistent with the findings in Hennes et al. (2008), Feng et al. (2011) report CFOs of manipulation firms bear substantial legal costs when involved in accounting manipulations. Further, prior research also suggests that AEM degrades the quality of financial reporting (Francis et al. 2008; Kim et al. 2012). Given the potential negative consequences of AEM and the ultimate responsibility of the CFO to monitor the financial reporting process, AEM may not be the earnings management technique of choice of CFOs.

Because CEOs are responsible for the overall long-term performance of the firm our expectation is that powerful CEOs are less likely to rely upon REM as their earnings management technique of choice. Given that the cost of REM for a CEO is potentially higher than the cost of AEM, we expect CEO power to be associated with higher levels of AEM and lower levels of REM. We also expect the relationship between CEO power and AEM to be stronger in the pre-SOX period because of the inhibiting effect of SOX on AEM documented in the prior literature (Cohen et al. 2008). On the other hand, given the potential negative consequences of AEM and the ultimate responsibility of the CFO to

monitor the financial reporting process, AEM may not be the earnings management technique of choice of CFOs. Accordingly, our expectation is that CFO power is positively related to the CFOs ability to pursue an earnings management that is more heavily weighted on REM than on AEM. Thus, we expect that REM (AEM) will be larger (lower) in magnitude in firms with a powerful CFO as compared to firms with a less powerful CFO.

The prior discussion leads to our first hypotheses (stated in the alternative form):

H1a   The presence of a CEO who is powerful relative to the CFO will be associated with higher levels of accrual earnings management in the pre-SOX period

H1b   The presence of a CFO who is powerful relative to the CEO will be associated with higher levels of real earnings management in both the pre- and post-SOX time periods

2.2.2 Interaction of joint CEO and CFO power: H2

Theories of individual power vary across the literatures on political science, economics, and organizations. Power circulation theory, initially developed to explain political dynamics, was extended to the organizational literature by Ocasio (1994). It challenges the notion that CEOs can indefinitely perpetuate their power (Ocasio 1994, Shen and Cannella 2002). Instead, the theory predicts that CEO power can be dissipated, in part due to contestation from other executives, who are viewed as rivals for the CEO's position. The degree of contestation is a function of the distribution of power among potential rivals. While the CEO's authority is recognized, other executives have strong incentives to monitor and act on perceived shortcomings of the CEO, or on overall poor performance of the firm. Prior research offers two factors behind this motivation: (1) other executives could gain greater prestige and wealth if they were to succeed the CEO (Henderson and Fredrickson 2001), and (2) poor performance by the firm damages the reputations of all executives, not just the CEO (Kesner and Dalton 1994, Cannella et al. 1995).

In power circulation theory, while the CEO's authority is accepted, other executives are highly motivated to detect and react to shortcomings of the CEO because each of them may have the potential to become CEO and accrue greater prestige and wealth if the incumbent is replaced (Henderson and Fredrickson 2001). Selection of an internal successor after a CEO's dismissal is thus viewed as a successful power challenge to the exiting CEO (Shen and Cannella 2002). Even a manager with little chance of becoming the next CEO is concerned with the incumbent's performance because poor performance increases the risk of termination for all top executives (Kesner and Dalton 1994), and the external labor market assesses candidates' competency based on their current firm's performance (Cannella et al. 1995). Given that the stain of poor performance tarnishes all of a firm's executives, not just the CEO, power circulation theory asserts that other executives are driven to scrutinize the CEO and form a coalition to oppose the CEO if necessary (Ocasio 1994). The theory and evidence strongly indicate that management teams are not necessarily homogenous in their decision-making (Ocasio 1994, Jiang et al. 2010, Feng et al. 2011).

In the specific context of financial reporting, asymmetric benefits and costs across executives could be factors as well. For example, one argument is that CFOs bear higher potential litigation costs and reap fewer benefits from accounting manipulations than do CEOs (Mian 2001, Feng et al. 2011). Although other top executives may have strong incentives to oppose the CEO, they are also subordinate to the CEO. On the other hand, monitoring of the CEO by other executives is likely most effective when the power of the

other executives is relatively high. In fact, prior research finds that the presence of powerful non-CEO top management facilitates the functioning of a corporation's internal monitoring system and reduces agency costs (Fama 1980; Ocasio 1994; Shen and Cannella 2002).

Since CFOs typically oversee the financial reporting of their firms (Mian 2001; Indjejikian and Matejka 2009; Jiang et al. 2010), it seems reasonable to expect that a powerful CFO has the greatest potential and incentives to promote a higher quality of earnings (i.e., lower accruals earnings management) in the presence of a powerful CEO with ulterior motives. On the other hand, given that CEOs are responsible for the overall long-term performance of the firm and prior research suggests that REM potentially has negative consequences for the future performance of the firm (Bhojraj et al. 2009; Zang 2012), it is equally reasonable to expect that a powerful CEO has substantial incentive to limit REM, at least in the pre-SOX period.

In summary, we expect that powerful CFOs (CEOs) will have the capability to block powerful CEO (CFO) earnings management strategies that use AEM (REM) relative to less powerful CFOs (CEOs). Since CEOs have a greater appetite for AEM in the pre-SOX period, we expect that CFO mitigation of CEO-driven AEM will be more pronounced in the pre-SOX period. However, it is possible it will persist into the post-SOX period if CEOs still use AEM (albeit at a lower level) in the post-SOX period. Since our expectation is that CEOs prefer more REM in the post-SOX period (i.e., the substitution effect), we do not expect powerful CEOs to block powerful CFO usage of REM in the post-SOX period. The above discussion leads to our final set of hypotheses which tests the joint effect of powerful CEOs (CFOs) in the presence of powerful CFOs (CEOs) (stated in the alternative form):

H2a A powerful CFO will mitigate the aggressive influence of a powerful CEO on accrual earnings management (AEM) in both the pre and post-SOX periods

H2b A powerful CEO will mitigate the aggressive influence of a powerful CFO on real earnings management (REM) in the pre-SOX period

3 Research design

3.1 Measures of CEO and CFO power

Prior studies have used a wide range of factors to represent executive power. In our view, the most relevant and comprehensive are those based on the constructs of duality and centrality (Mallette and Fowler 1992; Core et al. 1999; Grinstein and Hribar 2004). Duality captures the executive's ability to influence policy and decision-making through both the board and the senior management team. For the CEO, duality is determined by whether the CEO also serves as board chair, which conveys formal authority over the board (as chair) and over management (as chief executive). For the CFO, the analogous measure is whether the CFO is also a member of the board, thereby enabling the CFO to further monitor the actions of the CEO and to influence policy at the board and management team levels.

Centrality reflects the importance (ability, contribution, or power) of an executive, as indicated by relative pay share (Bebchuk et al. 2007, 2011). Following prior research we estimate relative pay share as the ratio of each executive's total pay (salary, bonus, and equity-based, as reported in item *tdc1* in ExecuComp) to the total pay of the firm's other

top executives.[3,4] Arguably, this share represents the value assigned to the executive by the board and the corresponding power of that individual within the executive team. We maintain that centrality complements the other component of executive power, duality, because it represents the executive's rank within the senior management team. We use the first lag of pay share to avoid any effect related to a contemporaneous relationship between accruals or discretionary expenditures and compensation.

Consistent with Henderson et al. (2010), we combine duality and centrality into a composite measure for each executive. In particular, we identify a CEO as powerful if (1) the CEO's pay share is in the sample top quartile (centrality power) and (2) the CEO also serves as board chair (duality power). Similarly, we identify a CFO as powerful if the CFO's pay share is in the sample top quartile and the CFO also serves as a member of the board.

3.2 Accrual earnings management estimation (AEM)

Consistent with Bergstresser and Philippon (2006) and Jiang et al. (2010) we use the absolute value of discretionary accruals as our proxy for accrual earnings management. Discretionary accruals are estimated using the forward-looking discretionary accrual model developed by Dechow et al. (2003) and used by Jiang et al. (2010). The model shown below is estimated for each two-digit SIC-year combination with at least 20 observations:

$$ACC_{i,t} = \alpha + \delta_1(1+k)\Delta SALES_{i,t} - \Delta AR_{i,t}) + \delta_2 PPE_{i,t} + \delta_3 ACC_{t-1} + \delta_4 REV\_GR_{t+1} + e_{i,t} \quad (A)$$

where: ACC = operating cash flows - income before extraordinary items)/average total assets, $\Delta SALES$ = the change in sales from year $t - 1$ to year t/average total assets, ΔAR = the change in accounts receivable from year $t - 1$ to year t/average total assets, k = coefficient from the following regression: $\Delta AR = \alpha + k\Delta SALES + e$ (by two-digit SIC-year), PPE = property plant and equipment/average total assets, and REV_GR = the change in sales revenue from year t to $t + 1$ scaled by sales revenue at t.

The residual from (A) is the estimate of discretionary accruals. We then calculate our dependent variable |DA| in two ways. First, |DA1| is the absolute value of discretionary accruals in year t. The second measure, |DA3|, is the three-year mean of the absolute value of discretionary accruals for years t through $t + 2$, which captures the effect of current accruals on future accruals (e.g., reversals), and is consistent with prior research (e.g., Francis et al. 2008). Larger values of |DA| represent a disparity between reported earnings and accounting fundamentals and are interpreted as evidence of AEM.

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[3] Bebchuk et al. (2011) examined pay share for the CEO only and defined pay share as the CEO's portion of the aggregate pay to the top 5 executives. Given that we include the CEO and CFO in our design, the Bebchuk et al. definition of pay share would lead to an arithmetic relationship in the measurement of the variable such that by definition higher pay for the CEO or CFO would lead to lower pay share for the CEO or CFO. To avoid such a mechanical relationship, we exclude the CEO and CFO from the denominator in the variable definition.

[4] Similar to Feng et al. (2011), when the firm reports compensation data for more than five executives, we use only the five highest paid executives. When the firm reports compensation data for fewer than five executives, we use the pay from the lowest paid executive in place of that of the missing executives.

3.3 Real earnings management estimation (REM)

Following Roychowdhury (2006) and Cohen et al. (2008), we use the following regression to estimate abnormal discretionary expenditures:

$$DE_{it} = \gamma_1\left(1/SIZE_{i,t-1}\right) + \gamma_2\left(SALES_{i,t-1}/SIZE_{i,t-1}\right) + \varepsilon \ (R)$$

where DE = the sum of advertising expense, R&D expense and SG&A expense for year t scaled by total assets in year $t - 1$[5]; SIZE = total assets in year $t - 1$, and SALES = net sales in year $t - 1$.

Equation (R) is estimated by two-digit SIC and year. The residual from equation (R) is our estimate of the deviation from predicted discretionary expenditure patterns and as such represents our estimate of abnormal discretionary expenditures (DE). The more negative is DE, the more likely discretionary expenses are being cut in order to increase current earnings (i.e., real earnings management—REM).

3.4 Empirical models

To test the influence CEO and CFO power on the choice between accruals earnings management (AEM) and real earnings management (REM) we begin with the following model:

$$\begin{aligned}
|DA|/DE = {} & \alpha_0 + \alpha_1 PRE - CEO\_POWER + \alpha_2 POST - CEO\_POWER \\
& + \alpha_3 PRE - CFO\_POWER + \alpha_4 POST - CFO\_POWER + \alpha_5 PRE - BOTH \\
& + \alpha_6 POST - BOTH + \alpha_7 PRE - CONTROLS + \alpha_8 POST - CONTROLS \\
& + \alpha_9 YEAR + \alpha_{10} IND + \varepsilon
\end{aligned}$$

$$(1)$$

where

Dependent measures:
$|DA_1|$ = absolute value of discretionary accruals in year t,
$|DA_3|$ = average $|DA|$ measured over years t to $t + 2$,
DE = abnormal discretionary expenditures,
Independent measures
CEO_POWER = 1 if CEO_SWAY = 1 and CFO_SWAY = 0,
CFO_POWER = 1 if CEO_SWAY = 0 and CFO_SWAY = 1,
BOTH = 1 if CEO_SWAY = 1 and CFO_SWAY = 1,
Where
CEO_SWAY = 1 if the CEO is the chairman of the board in year t and (CEO total compensation/mean total compensation for the top 3 executives not including the CEO or CFO) in year $t - 1$ is in the top quartile, otherwise 0,
CFO_SWAY = 1 if the CFO is on the board of directors in year t and (CFO total compensation/mean total compensation for the top 3 executives not including the CEO or CFO) in year $t - 1$ is in the top quartile, otherwise 0,
Control variables
SIZE = log of average cpi-adjusted total assets for the past 5 years (years t—year $t - 4$),

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[5] Advertising and R&D expense are set to zero if they are not reported in Compustat.

MB = market value of equity/book value of equity in year t,

σOPCASH = standard deviation of operating cash flows in the past 5 years (years t—year $t - 4$)/assets in year t,

σSALES = standard deviation of sales in the past 5 years (years t—year $t - 4$)/assets in year t,

OPCYCLE = the log of the past 5 year average of [365/(cog/inventory) + 365/(sales/accounts receivable)],

NEGEARN = the sum of negative earnings years in the past 5 years (years t—year $t - 4$),

OLDFIRM = 1 if the firm has been listed in Compustat for at least 20 years, and zero otherwise,

LEV = total liabilities/total assets,

σSALESΔ = standard deviation of sales growth for years t through $t - 4$,

NOA_IND = industry adjusted (shareholders equity—cash and marketable securities + total debt)/sales$_{t-1}$),

ZSCORE$_{t-1}$ = 3.3 * (NI$_t$/AT$_{t-1}$) + SALE$_t$/AT$_{t-1}$ + 1.4 * (RE$_t$/AT$_{t-1}$) + 1.2 * [(ACT$_t$ - LCT$_t$)/AT$_{t1}$],

CEO_INCENT = CEO equity incentives stemming from a 1% change in stock price in year $t - 1$/cash compensation in year $t - 1$,

CFO_INCENT = CFO equity incentives stemming from a 1% change in stock price in year $t - 1$/cash compensation in year $t - 1$,

YEAR = year indicator variables,

IND = two-digit SIC indicator variables,

PRE = 1 if YEAR < 2002, otherwise zero, and

POST = 1 if YEAR > 2001, otherwise zero.

In our design, more positive (negative) values of DA (DE) are consistent with greater AEM (REM). Prior research indicates a systematic shift from AEM to REM around implementation of SOX (e.g., Cohen et al. 2008). Accordingly, the CEO and CFO power variables are partitioned into PRE- and POST-SOX measures as are each of the control variables with the exception of the year and industry indicator variables.[6] Our definition of CEO_POWER and CFO_POWER allows for the isolation of situations where only one executive has power. In these situations, the executive will have the greatest ability to influence financial reporting, and/or operating decisions; thus, creating the strongest test possible of our hypotheses. In addition, this specification controls for the possibility that the power of the CEO (CFO) over financial reporting decisions is contingent upon the power of the CFO (CEO).

3.4.1 Control variables

The control variables included in Eq. (1) are drawn from Francis et al. (2008), Jiang et al. (2010) and Badertscher (2011). Positive values for |DA| represent more AEM, while negative values for DE represent more REM. Consistent with prior research, we expect that more volatile operating environments will lead to more AEM and REM. Thus, we expect the coefficients on σOPCASH and σSALES will be positively related to |DA|, and

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[6] We do not include an indicator variable for SOX because the correlation between SOX and the year indicator variables results in the SOX variable being dropped in some estimations. Additionally, the variance inflation factor for the SOX indicator variable exceeds 100 in the estimations. When the SOX indicator is included in the model, it has no effect on the coefficients of interest.

negatively related to DE. Firms with longer operating cycles, and firms with a history of negative earnings are expected to be positively associated with AEM (Francis et al. 2008). Therefore, OPCYCLE and NEGEARN are expected to be positively related to |DA|. Larger firms tend to be less volatile and under more scrutiny, therefore we expect SIZE to be negatively related to |DA| and positively related to DE. Greater growth opportunities (high MB) are likely to be related to increases in discretionary expenditures (Roychowdhury 2006) and are expected to be positively related to AEM (Francis et al. 2008). Therefore, MB is expected to be positively related to both DE and |DA|.

Firms with higher leverage may be under pressure to maintain earnings levels (Franz et al. 2014), therefore LEV is expected to be positively related to |DA| and negatively related to DE. Net operating assets, or bloat, restricts the use of DA (Barton and Simko 2002), and thus promotes the use of DE. Consistent with this notion, Badertscher (2011) finds that NOA is positively related to |DA| and negatively related to DE. Finally, firms that are close to bankruptcy are less likely to use REM (Badertscher 2011), thus larger values for ZSCORE (more financially healthy) are expected to be negatively related to DE. Jiang et al. (2010) find a positive relation between |DA| and both CEO and CFO equity incentives pre-SOX, but in the post-SOX period, they find no relationship between |DA| and CEO equity incentives, and a negative relationship between CFO equity incentives and |DA|.

4 Sample selection and descriptive statistics

We draw our sample data on executives from the ExecuComp database over the period 1992–2010 and merge it with firm financial data from Compustat and analyst forecast data from IBES.[7] The sample composition and selection criteria are presented in Table 1. Following prior research, we exclude firms in the financial services industry. Next, we eliminate firm-years with missing CEO or CFO data and control variables. For each firm we need data on the CFO as well as the CEO. Given that data is available for 97% of sample CEOs, but only for 89% of sample CFOs, this requirement results in substantial sample attrition. The sample is also truncated by the number of lagged and lead variable definitions in our model. Finally, the extent to which the different screening criteria impact the sample size depends on the earnings management variable of interest: one-year discretionary accruals, 3-year discretionary accruals, discretionary expenditures, or meeting or beating analysts' earnings forecasts.

In Table 2, we report descriptive statistics for the variables in the model. Recall that higher values of |DA| indicate the presence of AEM. The mean (median) values of |DA1| and |DA3| are 0.042 (0.028) and 0.042 (0.034), respectively. This suggests that the absolute value of discretionary accruals is, on average, approximately 4.2% of total assets which is very similar to the 4.4% reported in Francis et al. (2008). We find that the mean (median) value of DE is 0.023 (0.004) suggesting that discretionary expenditures for most firms tend to be income-decreasing. We find that 63.5% of the observations are in the post-SOX

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[7] We classified executives as "CEO" or "CFO" based on the position identifier field or job description in the database. When necessary, we also referred to original source documents to clarify classification. For example, we observed considerably more variation in the coding and description of chief financial officers than of chief executive officers. Our approach was to classify an executive as the CFO if (a) the indicator field = "CFO", or (2) the job description indicated a comparable role, such as "chief accounting officer." If neither of these criteria was clear, we referred to proxy statements and 10-Ks to identify the executive holding a position equivalent to CFO. We used a similar approach for data on board membership, discussed later.

Table 1 Sample selection criteria

	1-Year discretionary accrual model		3-Year discretionary accrual model[a]		Discretionary expenditures model	
	Firms	Firm-years	Firms	Firm-years	Firms	Firm-years
ExecuComp Database 1992–2010	3241	35,329	3241	35,329	3241	35,329
Less						
Financial firms	571	5239	571	5239	571	5239
Missing CEO or CFO data[b]	349	17,904	349	17,904	349	17,904
Missing data for model variables	627	3478	919	5822	716	4065
Final sample	1694	8708	1402	6364	1605	8121

[a] The 3-year discretionary accrual calculation requires data for years $t + 1$ and $t + 2$. This requirement results in fewer firms and firm-years compared to the 1-year discretionary accrual model

[b] Attrition is due to two factors: (1) Firm-years in which the CFO is not reported among the top five executives are omitted and (2) the CEO/CFO power and equity incentive variables require data for year $t - 1$

period. Finally, with respect to CEO and CFO power, we find that approximately 17% of sample CEOs meet the joint condition of serving as board chair and the top sample quartile of pay share, while 5% of CFOs meet the joint condition of holding a position on the board and top quartile pay share.

5 Empirical results

5.1 AEM estimation of EQ (1): empirical tests of H1a and H2a

In Table 3 Panel A, we report the results for the AEM estimation EQ (1), which provides empirical evidence to evaluate H1a. We report coefficient difference tests in Panel B (our empirical test of H2a). In Panel A, we find that the results with respect to the control variables are generally consistent with expectations. H1a predicts that CEO power will be associated with higher levels of AEM in the pre-SOX period. Consistent with H1a, we find that the coefficient on PRE-CEO_POWER is positive for both |DA1| and |DA3| indicating that powerful CEOs manage accruals to a greater extent than non-powerful CEOs; however, it is only significant at conventional levels (two-tailed p value < 0.05) with |DA3|. This evidence suggests that powerful CEOs are able to use AEM to a greater extent relative to non-powerful CEOs. On the other hand, POST-CEO_POWER is negatively related to both AEM measures in the post-SOX period. This most likely is related to the overall shift away from AEM following SOX (e.g., Lobo and Zhou 2006; Koh et al. 2008; Cohen et al. 2008; Bartov and Cohen 2009; Lobo and Zhou 2010). Also, we find no significant association between CFO_POWER and AEM in either the pre- or post-SOX time periods. This evidence is consistent with the notion that accrual earnings management is not the earnings management technique preferred by powerful CFOs.

H2a predicts that powerful CEOs in the presence of powerful CFOs will be constrained in the extent of their accrual earnings management. We find empirical support for H2a in both the pre- and post-SOX time periods. The test of the difference in AEM between CEOs with shared power and CEOs with sole power (BOTH—CEOPOWER) is negative and

Table 2 Descriptive statistics

	n	Mean	25%	Median	75%
Dependent variables					
|DA1|	8708	0.042	0.011	0.028	0.056
|DA3|	6364	0.042	0.020	0.034	0.055
DE	8121	0.023	−0.070	0.004	0.114
Sarbanes–Oxley indicator					
SOX	8708	0.635	0.000	1.000	1.000
CEO/CFO variables					
CEO_SWAY	8708	0.175	0.000	0.000	0.000
CFO_SWAY	8708	0.046	0.000	0.000	0.000
CEO_INCENT	8708	0.168	0.026	0.079	0.209
CFO_INCENT	8708	0.056	0.007	0.026	0.069
Control variables					
SIZE	8708	7.353	6.237	7.229	8.353
MB	8708	1.327	0.570	0.982	1.630
σOPCASH	8708	0.039	0.019	0.030	0.049
σSALES	8708	0.171	0.074	0.126	0.213
OPCYCLE	8708	4.687	4.369	4.769	5.084
NEGEARN	8708	0.746	0.000	0.000	1.000
OLDFIRM	8708	0.602	0.000	1.000	1.000
LEV	8708	0.519	0.364	0.524	0.661
σSALESΔ	8708	0.121	0.045	0.082	0.146
NOA_IND	8708	0.077	−0.119	0.037	0.265
$ZSCORE_{t-1}$	8708	2.052	1.183	2.036	2.886

Variable definitions:

|DA1| = absolute value of performance adjusted discretionary accruals in year t

|DA3| = mean absolute value of performance adjusted discretionary accruals in years $t - t + 2$

DE = abnormal discretionary expenditures in year t

CEO_SWAY = 1 if the CEO is the chairman of the board in year t and (CEO total compensation/mean total compensation for the top 3 executives not including the CEO or CFO) in year $t - 1$ is in the top quartile

CFO_SWAY = 1 if the CFO is on the board of directors in year t and (CFO total compensation/mean total compensation for the top 3 executives not including the CEO or CFO) in year $t - 1$ is in the top quartile

CEO/CFO_INCENT = CEO/CFO equity incentives stemming from a 1% change in stock price in year $t - 1$/cash compensation in year $t - 1$

SIZE = log of average cpi-adjusted total assets for the past 5 years (years $t -$ year $t - 4$)

MB = market value of equity/book value of equity in year t

σOPCASH = standard deviation of operating cash flows in the past 5 years (years $t -$ year $t - 4$)/assets in year t

σSALES = standard deviation of sales in the past 5 years (years $t -$ year $t - 4$)/assets in year t

OPCYCLE = the log of the past 5 year average of [365/(cog/inventory) + 365/(sales/accounts receivable)]

NEGEARN = the sum of negative earnings years in the past 5 years (years $t -$ year $t - 4$)

OLDFIRM = 1 if the firm has been listed in Compustat for at least 20 years, and zero otherwise

LEV = total liabilities/total assets

σSALESΔ = standard deviation of sales growth for years t through t – 4

NOA_IND = industry adjusted (shareholders equity − cash and marketable securities + total debt)/$sales_{t-1}$)

$ZSCORE_{t-1} = 3.3 * (NI_t/AT_{t-1}) + SALE_t/AT_{t-1} + 1.4 * (RE_t/AT_{t-1}) + 1.2 * [(ACT_t - LCT_t)/AT_{t-1}]$, and SOX = 1 if the year > 2001

Table 3 AEM on CEO and CFO Power, Sox Interactions and CEO/CFO Power Interactions. $|DA| = \alpha_0 + \alpha_1 PRE\text{-}CEO\_POWER + \alpha_2 POST\text{-}CEO\_POWER + \alpha_3 PRE\text{-}CFO\_POWER + \alpha_4 POST\text{-}CFO\_POWER + \alpha_5 PRE\text{-}BOTH + \alpha_6 POST\text{-}BOTH + \alpha_7 PRE\text{-}CONTROLS + \alpha_8 POST\text{-}CONTROLS + \alpha_9 YEAR + \alpha_{10} IND + \varepsilon$

	Predicted sign	|DA1|		|DA3|	
		Coefficient	t stat.	Coefficient	t stat.
Panel A					
Variable					
PRE-CEO_POWER (H1a)	+	0.0030	1.26	0.0050	2.38**
POST-CEO_POWER	?	−0.0023	−1.77*	−0.0028	−2.07**
PRE-CFO_POWER	?	0.0009	0.25	−0.0036	−1.19
POST-CFO_POWER	?	0.0011	0.32	0.0046	1.02
PRE-BOTH	?	−0.0129	−2.58**	−0.0125	−3.01**
POST-BOTH	?	−0.0067	−1.59	−0.0073	−2.90**
PRE-SIZE	−	−0.0028	−3.61**	−0.0032	−4.22**
POST-SIZE	−	−0.0022	−4.29**	−0.0015	−2.61**
PRE-MB	−	0.0019	2.07**	0.0025	3.31**
POST-MB	−	0.0001	0.17	−0.0009	−1.28
PER-σOPCASH	+	0.2863	6.05**	0.1540	4.67**
POST-σOPCASH	+	0.1614	4.73**	0.1253	3.76**
PRE-σSALES	+	−0.0028	−0.28	0.0089	1.06
POST-σSALES	+	0.0020	0.28	0.0093	1.45
PRE-OPCYCLE	+	0.0048	2.77**	0.0047	2.86**
POST-OPCYCLE	+	0.0017	1.18	0.0019	1.24
PRE-NEGEARN	+	0.0061	5.30**	0.0050	4.92**
POST-NEGEARN	+	0.0058	7.31**	0.0058	7.19**
PRE-OLDFIRM	?	−0.0037	−1.76*	−0.0043	−2.19**
POST-OLDFIRM	?	−0.0018	−1.29	−0.0025	−1.61
PRE-LEV	+	0.0164	2.34**	0.0105	2.02**
POST-LEV	+	0.0137	3.46**	0.0060	1.45
PRE-σSALESΔ	?	0.0234	1.60	0.0258	2.30**
POST-σSALESΔ	?	0.0140	1.58	0.0024	0.29
PRE-NOA_IND	−	0.0045	1.90*	0.0024	1.13
POST-NOA_IND	−	0.0013	0.76	−0.0004	−0.23
PRE-ZSCORE	?	0.0028	2.98**	0.0007	0.75
POST-ZSCORE	?	0.0000	0.12	−0.0000	−0.11
PRE-CEO_INCENT	+	0.0043	0.96	0.0032	0.70
POST-CEO_INCENT	?	0.0009	0.32	−0.0007	−0.24
PRE-CFO_INCENT	+	0.0056	0.47	0.0083	0.70
POST-CFO_INCENT	+	0.0075	0.96	0.0037	0.56
N		8708	6364		
ADJ-R^2		0.177	0.301		

Table 3 continued

	Predicted sign	|DA1|		|DA3|	
		Coefficient	t stat.	Coefficient	t stat.
Panel B					
Summed Coefficients					
POST-CEO_POWER − PRE-CEO_POWER	−	−0.0053	−1.98**	−0.0078	−3.25**
POST-CFO_POWER − PRE-CFO_POWER	?	0.0002	0.00	0.0082	1.55
PRE-BOTH − PRE-CEO_POWER (H2a)	−	−0.0159	−2.88**	−0.0175	−3.79**
POST-BOTH − POST-CEO_POWER (H2a)	−	−0.0044	−1.04	−0.0045	−1.64

*p ≤ .10, two-tailed; **p ≤ .05, two-tailed

Year and industry indicator variables are not tabulated

Pre (Post) variables are coded 0 in Post (Pre) years. CEO_POWER = 1 if CEO_SWAY = 1 & CFO_SWAY = 0, CFO_POWER = 1 if CEO_SWAY = 0 & CFO_SWAY = 1, and BOTH = 1 if CEO_SWAY = 1 & CFO_SWAY = 1. Otherwise, variables are as defined in Table 2

significant for both |DA1| and |DA3| in the pre-SOX period (two-tailed p value < 0.05), and is marginally significant for |DA3| in the post-SOX period (two-tailed p value = 0.101). The results in Table 3 suggest that prior to SOX, powerful CEOs used their influence to increase AEM, and that the provisions of SOX appear to have significantly diminished the ability or willingness of powerful CEOs to exert that influence. Additionally, powerful CFOs appear to limit the opportunity of powerful CEOs to engage in AEM in both the pre- and post-SOX periods. Overall, our results suggest that powerful CFOs mitigated CEO attempts to use AEM, and that SOX had a limiting effect on CEOs ability or willingness to engage in AEM.

5.2 REM estimation of EQ (1): empirical tests of H1b and H2b

In Table 4 Panel A, we report the results for the REM estimation EQ (1), which provides empirical evidence allowing us to evaluate H1b. We report coefficient difference tests in Panel B (our empirical test of H2b). H1b predicts that CFO power will be associated with higher levels of REM (i.e., a negative coefficient on CFO_POWER). Consistent with H1b, we find that the coefficient on CFO_POWER is negative and significant (two-tailed p value < 0.10 or better) in both the pre- and post-SOX time periods. This evidence suggests that powerful CFOs are able to use REM to a greater extent relative to non-powerful CFOs. We also find no evidence of a significant association between CFO power and AEM. This evidence is consistent with the notion that real earnings management is the earnings management technique preferred by powerful CFOs. Taken together with the AEM results in Table 3, our evidence is consistent with CEOs preferring accrual earnings management, while CFOs prefer real earnings management.

H2b predicts that the aggressive influence of powerful CFOs on real earnings management (REM) will be mitigated in the presence of powerful CEOs in the pre-SOX period. Consistent with the prediction of H2b, the test of the difference in REM between CFOs with shared power and CFOs with sole power in the pre-SOX period (PRE-BOTH—

Table 4 DE on CEO and CFO Power, Sox Interactions and CEO/CFO Power Interactions. $|DE| = \alpha_0 + \alpha_1 PRE\text{-}CEO\_POWER + \alpha_2 POST\text{-}CEO\_POWER + \alpha_3 PRE\text{-}CFO\_POWER + \alpha_4 POST\text{-}CFO\_POWER + \alpha_5 PRE\text{-}BOTH + \alpha_6 POST\text{-}BOTH + \alpha_7 PRE\text{-}CONTROLS + \alpha_8 POST\text{-}CONTROLS + \alpha_9 YEAR + \alpha_{10} IND + \varepsilon$

	Predicted sign	Coefficient	t stat.
Panel A			
Variable			
PRE-CEO_POWER	?	0.0081	0.64
POST-CEO_POWER	?	−0.0045	−0.53
PRE-CFO_POWER (H1b)	−	−0.0496	−1.82*
POST-CFO_POWER (H1b)	−	−0.0575	−2.49**
PRE-BOTH	?	0.0524	1.49
POST-BOTH	?	−0.0508	−1.41
PRE-SIZE	+	0.0065	1.23
POST-SIZE	+	0.0104	2.58**
PRE-MB	+	0.0454	8.97**
POST-MB	+	0.0442	6.74**
PER-σOPCASH	−	−0.0419	−0.17
POST-σOPCASH	−	0.2804	1.88*
PRE-σSALES	−	−0.0924	−1.41
POST-σSALES	−	−0.1405	−3.20**
PRE-OPCYCLE	?	0.1248	7.57**
POST-OPCYCLE	?	0.1125	7.65**
PRE-NEGEARN	?	0.0174	2.79**
POST-NEGEARN	?	0.0117	2.67**
PRE-OLDFIRM	?	−0.0410	−2.96*
POST-OLDFIRM	?	−0.0224	−2.21**
PRE-LEV	−	−0.0616	−1.63
POST-LEV	−	−0.0192	−0.70
PRE-σSALESΔ	?	−0.1319	−1.76*
POST-σSALESΔ	?	−0.0868	−1.84*
PRE-NOA_IND	−	−0.0155	−1.69*
POST-NOA_IND	−	0.0137	1.77*
PRE-ZSCORE	−	−0.0028	−0.61
POST-ZSCORE	−	−0.0120	−2.78**
PRE-CEO_INCENT	−	−0.0219	−0.72
POST-CEO_INCENT	?	0.0077	0.34
PRE-CFO_INCENT	−	−0.0547	−1.01
POST-CFO_INCENT	−	0.0166	0.39
N		8121	
ADJ-R^2		0.232	
Panel B			
Summed coefficients			
POST-CEO_POWER − PRE-CEO_POWER	−	−0.0126	−0.86
POST-CFO_POWER − PRE-CFO_POWER	?	−0.0079	−0.26
PRE-BOTH − PRE-CFO_POWER (H2b)	+	0.1020	2.50**

Table 4 continued

	Predicted sign	Coefficient	t stat.
POST-BOTH − POST-CFO_POWER	?	0.0067	0.17

* p ≤ .10, two-tailed. ** p ≤ .05, two-tailed

Year and industry indicator variables are not tabulated

Pre (Post) variables are coded 0 in Post (Pre) years. CEO_POWER = 1 if CEO_SWAY = 1 & CFO_S-WAY = 0, CFO_POWER = 1 if CEO_SWAY = 0 & CFO_SWAY = 1, and BOTH = 1 if CEO_S-WAY = 1 & CFO_SWAY = 1. Otherwise, variables are as defined in Table 2

PRE-CFO_POWER) is positive and significant (two-tailed p value < 0.05). In addition, consistent with expectations, there is no evidence that powerful CEOs constrain powerful CFO REM in the post-SOX period. The results suggest that powerful CEOs mitigate the aggressive REM of powerful CFOs in the pre-SOX period, but the decreased appetite of CEOs for AEM eliminates the CEOs incentive to mitigate REM in the post-SOX period (Cohen et al. 2008).

5.3 Alternate measure of earnings management

In this section we use an alternative measure of earnings management drawn from Jiang et al. (2010). Consistent with Jiang et al. (2010), we use IBES data to construct an indicator variable that is coded one if the firm met or exceeded the latest analyst consensus forecast. We use the control variables from Jiang et al. (2010), and add variables for CEO and CFO power. Since our hypotheses predict trade-offs between AEM and REM, rather than total earnings management, we make no predictions regarding the signs of the CEO and CFO power variables. The estimation of the meet or beat analysis is shown in Table 5.

The prior results suggest that the most likely scenario to find income-increasing AEM is when a powerful CEO is paired with non-powerful CFO in the pre-SOX period, while the most likely scenario to find income-increasing REM is when a powerful CFO is paired with a non-powerful CEO in either the pre- or post-SOX periods. Consistent with prior results, we find that powerful CEOs paired with non-powerful CFOs in the pre-SOX period (PRE-CEO_POWER) are positively related to the likelihood of meeting or beating analysts' earnings forecasts (two-tailed p value < 0.05). We find no similar evidence in the post-SOX period. Similarly, we find no evidence that powerful CFOs paired with non-powerful CEOs (PRE-CFO_POWER and POST-CFO_POWER) are associated with a greater likelihood of meeting or beating analysts' forecasts. We find marginally significant evidence (two-tailed p value = 0.13) that powerful CEOs are associated with a decreased likelihood of meeting or beating analysts' earnings forecasts post-SOX. (POST-CEO_-POWER − PRE-CEO_POWER) consistent with prior research which suggests a decline in accruals earnings management post-SOX (e.g., Cohen et al. 2008).

6 Conclusions

The primary objective of our study is to investigate the influence of joint CEO/CFO "power" on the financial reporting process. In so doing, we provide evidence on the relationship between executive power (both CEO and CFO); and (1) accrual earnings

Table 5 Meet/beat analyst forecasts on CEO and CFO power, sox interactions and power interactionsMBEAT $= \alpha_0 + \alpha_1$PRE-CEO_POWER $+ \alpha_2$POST-CEO_POWER $+ \alpha_3$PRE-CFO_POWER $+ \alpha_4$POST-CFO_POWER $+ \alpha_5$PRE-BOTH $+ \alpha_6$POST-BOTH $+ \alpha_7$PRE-CONTROLS $+ \alpha_8$POST-CONTROLS $+ \alpha_9$YEAR $+ \alpha_{10}$IND $+ \varepsilon$

	Predicted sign	Coefficient	t-stat.
Variable			
PRE-CEO_POWER	+	0.2703	1.96*
POST-CEO_POWER	+	0.0239	0.27
PRE-CFO_POWER	0	−0.0863	−0.38
POST-CFO_POWER	0	−0.1619	−0.80
PRE-BOTH	0	−0.1472	−0.39
POST-BOTH	0	−0.0569	−1.41
n		8254	
ADJ-R^2		0.055	
Summed Coefficients			
POST-CEO_POWER − PRE-CEO_POWER	?	−0.2464	−1.47
POST-CFO_POWER − PRE-CFO_POWER	?	−0.0756	−0.22
PRE-BOTH − POST-CEO_POWER	?	−0.4175	−1.05
POST-BOTH − PRE-CEO_POWER	?	−0.0808	−0.31
PRE-BOTH − POST-CFO_POWER	?	−0.0609	−0.14
POST-BOTH − PRE-CFO_POWER	?	0.1050	0.28

* $p \leq .10$, two-tailed. ** $p \leq .05$, two-tailed

Control variables are not tabulated but are available from the authors on request

Dependent measures

MBEAT $= 1$ if the analyst forecast error (actual quarterly earnings less that last consensus forecast of earnings prior to the earnings announcement for quarter q) is greater than or equal to zero, otherwise zero

Controls variables

ASSETS$_{t-1}$ = the log of cpi-adjusted total assets in year $t - 1$

MB$_{t-1}$ = market value of equity/book value of equity in year $t - 1$

SALEGROW = sales$_t$/sales$_{t-1}$, NOA $_{t-1}$ = (stockholders equity − cash + long-term debt + debt in current liabilities)/sales

SHARES = ln(common shares outstanding)

LITIGATION $= 1$ if SIC $=$ 2833–2826, 3570–3577, 3600–3674, 5200–5961, 7370–7374, 8731–8734

IMPLICIT $= 1 -$ (gross ppe/total assets)

#ANALYSTS = the number of analyst forecasts for the firm

DISP = forecast dispersion measures as the coefficient of variation of the consensus forecast

PRE- $= 1$ if year is prior to SOX (YEAR < 2002), and

POST- $= 1$ if year is after SOX (YEAR > 2001)

All other variables are as defined in Table 2

management, (2) real earnings management, and (3) meeting or beating analysts' earnings forecasts. In addition, we investigate whether CFO (CEO) power mitigates the influence of powerful CEOs (CFOs) in managing earnings. Our primary results can be summarized as follows: (1) powerful CEOs prefer AEM over REM particularly in the pre-SOX period; (2) powerful CFOs prefer REM over AEM power in both the pre and post-SOX periods; (3) powerful CFOs are able to limit the AEM of powerful CEOs; and (4) powerful CEOs limited the REM of powerful CFOs, but only in the pre-SOX period.

Overall, our results suggest that powerful CEOs prefer AEM to manage earnings, in the pre-SOX period, while powerful CFOs prefer REM in both the pre and post-SOX periods. This result is consistent with the survey evidence in Graham, et al. (2005, 36) where they report that CFOs prefer REM to AEM in order to meet earnings targets. Importantly, our results suggest that powerful CEOs and CFOs work to protect their primary areas of responsibility. Consistent with that notion, we find that powerful CFOs limit the AEM of powerful CEOs in both the pre- and post-SOX periods. Similarly, our results suggest that powerful CEOs limit the REM of powerful CFOs in the pre-SOX period. However, in the post-SOX period when CEOs limit their AEM, our evidence suggests that powerful CEOs do not limit the REM activity of powerful CFOs.

We conclude with two implications from our study. One, our results strongly suggest that senior management teams are not homogeneous in their preferences or dominated by their CEOs as often assumed in prior research. A direction for future research could be the impact of manager-specific characteristics on a broad range of decision-making within the firm including financing, investing, and operating decisions. Our study, along with evidence from other recent empirical work, suggests that the dynamics within senior management teams is more nuanced than researchers have typically assumed. Two, our results appear to be relevant to corporate governance practices and to the public policy debate over earnings quality. The evidence in our study indicates that firm's decisions relating to CEO and CFO power, specifically membership on the board and compensation share, can have a direct influence on the firm's financial reporting outcomes, and can, at times, lead to a tension between these top executives. Importantly, our evidence suggests that having both a powerful CEO and CFO leads to enhanced earnings quality. In addition, consistent with prior research on the efficacy of SOX, we find strong evidence that SOX systematically altered earnings management choices at both the firm and manager-specific levels.

References

Adams R, Almeida H, Ferreira D (2005) Powerful CEOs and their impact on corporate performance. Rev Financ Stud 18(4):1403–1432

Badertscher B (2011) Overvaluation and the choice of alternative earnings management mechanisms. Account Rev 86(5):1491–1518

Barton J, Simko P (2002) The balance sheet as an earnings management constraint. Account Rev 77(supplement):1–27

Bartov E, Cohen DA (2009) The "numbers game" in the pre- and post-Sarbanes–Oxley eras. J Account Audit Financ 24(4):505–534

Bebchuk L, Cremers M, Peyer U (2007) CEO centrality. Discussion Paper No. 13701. National Bureau of Economic Research, Cambridge, MA

Bebchuk L, Cremers M, Peyer U (2011) The CEO pay slice. J Financ Econ 102–1:199–221

Bergstresser D, Philippon T (2006) CEO incentives and earnings management. J Financ Econ 80–3:511–529

Bhojraj S, Hribar P, Picconi M, McInnis J (2009) Making sense of cents: an examination of firms that marginally miss or beat analyst forecasts. J Financ 64(5):2359–2386

Brickley J (2003) Empirical research on CEO turnover and firm-performance: a discussion. J Account Econ 36(December):227–234

Cannella A, Fraser D, Lee S (1995) Firm failure and managerial labor markets: evidence from Texas banking. J Financ Econ 38(June):185–210

Cohen D, Dey A, Lys T (2008) Real and accrual based earnings management in the pre- and post-Sarbanes Oxley periods. Account Rev 83–3:757–787

Core JE, Holthausen RW, Larcker DF (1999) Corporate governance, chief executive officer compensation, and firm performance. J Financ Econ 51:371–406

DeAngelo L (1988) Managerial competition, information costs, and corporate governance: the use of accounting performance measures in proxy contests. J Account Econ 10–1:3–36

Dechow P, Richardson A, Tuna I (2003) Why are earnings kinky? An examination of the earnings management explanation. Rev Acc Stud 8(2–3):355–384

Efendi J, Srivastava A, Swanson E (2007) Why do corporate managers misstate financial statements? The role of option compensation and other factors. J Financ Econ 85(September):667–708

Fama E (1980) Agency problems and the theory of the firm. J Polit Econ 88(April):288–307

Farrell K, Whidbee D (2003) Impact of firm performance expectations on CEO turnover and replacement decisions. J Account Econ 36(1–3):165–197

Fee C, Hadlock C (2004) Management turnover across the corporate hierarchy. J Account Econ 37:3–38

Feng M, Ge W, Luo S, Shevlin T (2011) Why do CFOs become involved in material accounting manipulations? J Account Econ 51(February):21–36

Francis J, Huang A, Rajgopal S, Zang A (2008) CEO reputation and earnings quality. Contemp Account Res 25(Spring):109–147

Franz D, Hassabelnaby H, Lobo G (2014) Impact of proximity to debt covenant violation on earnings management. Rev Acc Stud 19(March):473–505

Geiger M, North D (2006) Does hiring a new CFO change things? An investigation of changes in discretionary accruals. Account Rev 81(July):781–809

Graham J, Harvey C (2001) The theory and practice of corporate finance: evidence from the field. J Financ Econ 60:187–243

Graham JR, Harvey CR, Rajgopal S (2005) The economic implications of corporate financial reporting. J Account Econ 40(1):3–73

Grinstein Y, Hribar P (2004) CEO compensation and incentives: evidence from M&A bonuses. J Financ Econ 73(July):119–143

Hazarika S, Karpoff J, Nahata R (2012) Internal corporate governance, CEO turnover and earnings management. J Financ Econ 104(April):44–69

Henderson A, Fredrickson J (2001) Top management team coordination needs and the CEO pay gap: a competitive test of economic and behavioral views. Acad Manag J 44(February):96–117

Henderson C, Masli A, Richardson V, Sanchez J (2010) Layoffs and chief executive officer (CEO) compensation: does CEO power influence the relationship? J Account Audit Financ 25(Fall):709–748

Hennes K, Leone A, Miller B (2008) The importance of distinguishing errors from irregularities in restatement research: the case of restatements and CEO/CFO turnover. Account Rev 83(6):1487–1519

Indjejikian R, Matějka M (2009) CFO fiduciary responsibilities and annual bonus incentives. J Account Res 47(4):1061–1093

Jiang J, Petroni K, Wang I (2010) CFOs and CEOs: who have the most influence on earnings management? J Financ Econ 96(June):513–526

Kesner I, Dalton D (1994) Top management turnover and CEO succession: an investigation of the effects of turnover on performance. J Manag Stud 31(September):701–713

Kim Y, Park M, Wier B (2012) Is earnings quality associated with corporate social responsibility? Account Rev 87(3):761–796

Koh K, Matsumoto DA, Rajgopal S (2008) Meeting or beating analyst expectations in the post-scandals world: changes in stock market rewards and managerial actions. Contemp Account Res 25(4):1067–1098

Lobo G, Zhou J (2006) Did conservatism in final reporting increase after the Sarbanes–Oxley Act? Account Horiz 20–1:57–73

Lobo G, Zhou J (2010) Changes in discretionary financial reporting behavior following the Sarbanes–Oxley Act. J Account Audit Financ 25–1:1–26

Mallette P, Fowler KL (1992) Effects of board composition and stock ownership on the adoption of poison pills. Acad Manag J 35(December):1010–1035

Mian S (2001) On the choice and replacement of chief financial officers. J Financ Econ 60(April):143–175

Murphy K, Zimmerman J (1993) Financial performance surrounding CEO turnover. J Account Econ 16(1–3):273–315

Ocasio W (1994) Political dynamics and the circulation of power: CEO succession in U.S. industrial corporations, 1960-1990. Adm Sci Q 39(June):285–312

Roychowdhury S (2006) Earnings management through real activities manipulation. J Account Econ 42(December):335–370

Shen W, Cannella A (2002) Power dynamics within top management and their impacts on CEO dismissal followed by insider succession. Acad Manag J 45(December):717–734

Zang Y (2008) Discretionary behavior with respect to the adoption of SFAS no. 142 and the behavior of security prices. Rev Account Financ 7(1):38–68

Zang A (2012) Evidence on the trade-off between real activities manipulation and accrual-based earnings management. Account Rev 87(2):675–703