# Can CFOs Resist Undue Pressure from CEOs to Manage Earnings?

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## Abstract

Building upon the premise that, under certain conditions, the ability of the Chief Executive Officer (CEO) to pressure the Chief Financial Officer (CFO) is limited, we develop a measure of CFO resistance that captures the ability of the CFO to resist undue pressure from the CEO to manage earnings. In doing so, we consider various sources of power for both the CEO and CFO, and a market setting where CFO resistance is perceived to be high. We find that firms with resistant CFOs are less likely to engage in earnings management than firms with non-resistant CFOs, *ceteris paribus*. Additionally, while confirming prior evidence that CEOs with strong incentives are more likely to manage earnings, we show that this effect is significantly less pronounced in the presence of resistant CFOs. Overall, our findings suggest that firms can improve the quality of financial reporting by creating conditions that enable CFO resistance.

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# 1 Introduction

Despite various checks and balances that firms put in place to prevent it, Chief Financial Officers (CFOs) often engage in earnings management (Graham et al., 2005). According to a survey of 169 public company CFOs by Dichev et al. (2013), 20% of firms manage their earnings to misrepresent performance, and the magnitude of such misrepresentation is about 10% of earnings per share in any given period. Internal pressure from powerful Chief Executive Officers (CEOs) is widely considered to be one of the most important reasons why CFOs engage in earnings management (Fink, 2002; Adams et al., 2005; Matejka, 2007; Dichev et al., 2013).[1] While CFOs are primarily responsible for safeguarding financial reporting integrity (Indjejikian and Matějka, 2009), they are subordinates to CEOs (Mian, 2001) and hence vulnerable to CEO pressure to manipulate accounting reports (Friedman, 2014). Prior research shows that CEOs of manipulating firms use their power and authority to exert pressure on CFOs regarding financial reporting practices. This helps CEOs achieve personal financial gains (Feng et al., 2011; Dikolli et al., 2020) and/or maintain their reputation for beating earnings expectations (Chu et al., 2019).[2,3]

In this study, we argue that, while most CFOs are constantly subjected to CEO pressure, some CFOs are less susceptible to it, and hence less likely to engage in earnings management. Recent research by Friedman (2014) provides theoretical evidence showing that, under certain conditions, even powerful CEOs cannot force CFOs to manage earnings. Drawing upon Friedman's (2014) agency model, we introduce the concept of *CFO Resistance* and develop an empirical measure that attempts to capture the ability of the CFO to resist undue pressure from the CEO. In doing so, we focus on several important sources of resistance that directly relate to the capacity of the CFO to remain uninfluenced by the CEO. Specifically,

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[1] In their CFO survey, Dichev et al. (2013) report that more than 90% of CFOs in their sample acknowledge that internal pressures to hit earnings benchmarks are important motivating factors for earnings management.

[2] A recent article in the *Financial Times* entitled, "How to spot companies at risk of earnings manipulation" states that "there are rewards for manipulation – stronger earnings will be greeted by higher share prices. That means cheaper equity finance for the company, and more pay for any executives whose remuneration is linked to share performance" (published on September 7, 2017).

[3] More evidence on the internal pressure placed by the CEO on the CFO is documented by Leone and Liu (2010), Bishop et al. (2017) and Li and Zeng (2019). More specifically, Leone and Liu (2010) show that CFOs are more likely to be fired (as the designated "scapegoat") after accounting irregularities occur in firms where CEOs are more powerful. In their CFO survey, Bishop et al. (2017) find that "compliance" and "obedience" pressures from the CEO significantly affect CFOs' financial reporting decisions. In a similar spirit, Li and Zeng (2019) show that CFOs become involved in bad news hoarding activities because of pressure from powerful CEOs.

as analytically discussed in Section 3, we conjecture that a CFO's resistance to CEO pressure arises from the CFO's formal power within the firm's hierarchical structure (Shen and Cannella, 2002; Greve and Mitsuhashi, 2007; Bedard et al., 2014), the CFO's firm-level expertise (Beck and Mauldin, 2014), the CFO's personal ties with other influential members of the board (Bruynseels and Cardinaels, 2014; Hoitash and Mkrtchyan, 2020), the CFO's reputation as reflected by the number of non-executive directorships he or she holds on other firms' boards (Masulis and Mobbs, 2011; Mobbs, 2013; Badolato et al., 2014; Cunningham et al., 2020), the CFO's career considerations as reflected by the time left to retirement (Cheng et al., 2016) and the CFO's professional commitment (Aranya and Ferris, 1984; Mayhew and Murphy, 2014; Hoitash et al., 2016). We consider and analyze these sources of CFO resistance *vis-á-vis* the CEO. Our measure enables us to distinguish between CFOs who are more likely to resist CEO pressure and those who are more sensitive to it. We expect CFOs with higher levels of resistance to be less likely to engage in earnings management.

We formally examine the relationship between CFO resistance and earnings management in a market setting, the United Kingdom (UK), where CFOs are expected to have a high level of resistance to CEO pressure. CFOs in the UK are core and highly-influential members of the top management team, who typically possess high structural power[4], as demonstrated by the fact that they sit on the board of directors in the vast majority of public firms (above 80% in our sample) This particularly high percentage is in contrast to the US experience, where only about 11% of CFOs hold board positions (see e.g. Mobbs, 2018). The resistance capacity of CFOs in the UK is also reflected in their higher relative compensation, which leads to a lower CEO-CFO pay gap. Specifically, the average CFO compensation in our sample is about 69% of that of the CEO, while it is only about 41% in the US (see Jiang et al., 2010). Another factor that encourages resistance in the UK setting is the strong presence of CFOs on outside boards as non-executive directors, which increases the potential reputational penalty

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[4]For instance, a recent article by the *KPMG Board Leadership Centre* entitled "The CFO on the board", states that "the CFO [in the UK] needs to fulfil two roles: the executive role and the fellow board member role; CFO board members have exactly the same duties as other members of a unitary board – and that the board will also look to the CFO for an informed and independent contribution as a fellow board member – not as a member of the CEO's team, but as a genuine peer on all the key issues on the board agenda" (KPMG, 2019). See also "The evolving role of the CFO in the UK" in the *Wall Street Journal* (published on December 8, 2014).

for aggressive accounting (Desai et al., 2006; Mira et al., 2019). In particular, more than 27% of CFOs in our sample hold outside board seats as compared to only about 13% in the US.[5]

By focusing on a large sample of UK-listed firms over the period 1999-2015, we firstly document a significant negative association between our measure of CFO resistance and absolute discretionary accruals, which suggests that firms with resistant CFOs (i.e., high values on CFO resistance) are *less* likely to engage in earnings management. We then show that, in addition to its direct effect, CFO resistance has a moderating (indirect) effect on the relationship between CEO incentives and earnings management. More specifically, while confirming prior evidence that CEOs with strong incentives are more likely to manage earnings, we show that this effect is significantly *less* pronounced in the presence of resistant CFOs. We also provide evidence on a particular channel through which CFO resistance matters. Specifically, we find that firms with resistant CFOs exhibit better audit committee quality – in terms of independence and financial expertise – and a higher likelihood of being audited by a Big 4 accounting firm.

An empirical challenge for us is to address the potential endogeneity issue that applies to our setting. We first address concerns that omitted variables bias and/or unobserved time-invariant heterogeneity might explain our results. In additional tests, we control for firm-, board-, and audit-level characteristics, and also for firm-, CEO- and CFO-fixed effects, in the models. Our results remain robust to the inclusion of these controls. We then present several tests showing that endogenous CFO-firm matching is unlikely to drive our results. We first employ a propensity score matching technique. In this analysis, we compare firms with resistant CFOs to a matched sample of peer firms with non-resistant CFOs that are similar in terms of several firm, board and audit characteristics. The analysis suggests that firms with resistant CFOs are less likely to engage in earnings management as compared to their non-resistance counterparts. We then exploit a sample of firms experiencing most likely exogenous turnovers *from* non-resistant *to* resistant CFOs. We find that such turnovers are associated with a significant decline in discretionary accruals. Finally, we adopt an instrumental variable

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[5]For example, Mobbs (2018) reports that only about 11% of CFOs in US firms sit on outside boards over the period 1997-2014. Similar figures are reported by Cunningham et al. (2020) with 13% over the period 2005-2014, and Khan (2019) with 8% over the period 2003-2014.

(IV) approach using two instruments for CFO resistance, namely, (i) the number of financial experts sitting on *other* firms' boards where the CFO also serves as a director (termed *NOFE*) and (ii) a dummy variable indicating whether the CEO left the company in the previous year (*t*-1) for exogenous reasons (e.g. death, poor health). The results from the IV estimation confirm a negative association between CFO resistance and discretionary accruals.

Our study relates to the wider literature on the effect of personal characteristics of the CEO[6] and CFO[7] on firms' accounting-related outcomes. More specifically, it builds upon a growing strand in the literature that looks at how the balance of power between the CEO and the CFO, as well as their relative financial incentives, influence key financial/reporting policies. For example, Jiang et al. (2010) and Feng et al. (2011) examine the relative importance of CFO and CEO equity incentives on earnings management. Jiang et al. (2010) find that the role of CFO equity incentives in financial reporting – in particular the magnitude of accruals and the likelihood of beating analyst forecasts – is greater than that of the CEO. By focusing on a sample of material accounting manipulations, Feng et al. (2011) show that CFOs do not manipulate financial reports for immediate personal financial gain, but rather because of pressure from CEOs. Baker et al. (2019) find that CEO (CFO) power (proxied by board status and/or compensation) is associated with accruals (real) earnings management; Wu (2019) focuses on CFO awards as a means for increasing CFO power over the CEO and finds that more CFO power is associated with less earnings management; Dikolli et al. (2020) look at CEO tenure relative to the CFO and find that longer-tenured CEOs have the ability to pressure newly-appointed CFOs to inflate earnings in order to enhance their own compensation. These studies typically focus on a single or a small set of managerial attributes that can influence the balance of power between the CEO and the CFO. We extend this strand of literature by considering multiple conditions that enable CFO resistance, which are combined through a simple yet effective measure for capturing the extent to which CFOs

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[6]For example, Francis et al. (2008) look at CEOs' reputation; Malmendier and Tate (2009) focus on award-winning CEOs; Baik et al. (2011) and Demerjian et al. (2013) study CEOs' ability; Huang et al. (2012) look at CEOs' age; Schrand and Zechman (2012) focus on CEO overconfidence; Ali and Zhang (2015) focus on CEOs' tenure; Chen et al. (2015) look at CEO contractual protection; Burns and Kedia (2006), Bergstresser and Philippon (2006) and Efendi et al. (2007) analyze the role of CEO compensation incentives.

[7]For example, Aier et al. (2005) examine CFOs' financial expertise; Ge et al. (2011) study CFO style; Chava and Purnanandam (2010) study CFO incentives; Bedard et al. (2014) focus on CFO board membership.

succumb to pressure from CEOs. Our measure and its underlying methodology, which is intuitive and easily implementable, may be used to examine board-and firm-level implications arising from differences or shifts in the balance of power between the CEO and the CFO.

Second, we expand on studies that directly associate CEO power with earnings management. For example, Feng et al. (2011) show that CEOs of manipulating firms are more powerful and exert more pressure on the CFO to manage earnings than do CEOs of non-manipulating firms. Rather than focusing merely on CEO power, we argue that the ability of CEOs to exert pressure on CFOs is limited to the CEO's power relative to the CFO. Our study hence responds to Friedman's (2014) call for empirical research on how CEO power, after it is adjusted for CFO power, influences the use of earnings management. We show that the effect of CEO power on earnings management is significantly less pronounced in firms with resistant CFOs. Our study thus provides new evidence on how the power of the CEO *vis-á-vis* the CFO matters in the financial reporting process, especially in firms where powerful CEOs with self-serving motives are in place.

Third, we contribute to the literature on the substitution effect between accrual earnings management (AEM) and real earnings management (REM).[8] Prior literature shows that firms often use REM as a substitute for AEM in an attempt to achieve certain earnings targets (Cohen et al., 2008; Cohen and Zarowin, 2010; Zang, 2012). Survey evidence provided by Graham et al. (2005) suggests that CFOs themselves engage in both AEM and REM.[9] Yet, there is limited empirical evidence on how the balance of power between the CEO and CFO influences the substitution effect between AEM and REM. Notable exceptions are the studies by Baker et al. (2019) and Wu (2019), yet these only consider a subset of attributes (or power sources) that can influence the power of the CEO *vis-á-vis* the CFO. We add to this literature by developing a comprehensive measure of CFO resistance and by showing that resistant CFOs help constrain earnings management through real activities as well as

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[8]REM commonly occurs through the cutting of spending on R&D, advertising and maintenance (Roychowdhury, 2006).

[9]For example, Graham et al. (2005) note that "80 percent of survey participants [CFOs] report that they would decrease discretionary spending on research and development (R&D), advertising, and maintenance expenditures [real activities manipulation] to meet an earnings target. More than half (55.3%) state that they [CFOs] would delay starting a new project to meet an earnings target, even if such a delay entailed a small sacrifice in value."

through the means of discretionary accruals.

The remainder of the paper proceeds as follows: In Section 2, we discuss the theoretical motivation for this study and develop our main hypothesis. Section 3 describes our data and variable construction, and presents key descriptive statistics. In Section 4, we present our main empirical results. Section 5 provides more evidence on the relation between CFO resistance and earnings management, while Section 6 presents a series of robustness tests. Finally, Section 7 concludes.

## 2    Theoretical Motivation and Hypothesis Development

CFOs are widely viewed as "watchdogs" of financial reporting integrity and together with the audit committee and the external auditor, they play a critical role in ensuring financial reporting quality.[10] CFOs, however, often become susceptible to pressure from *powerful* CEOs. Such pressure results into actions that may benefit CEOs (e.g. they lead into higher CEO compensation) at the expense of the quality of financial reporting (see e.g. Feng et al., 2011; Dichev et al., 2013; Friedman, 2014; Chu et al., 2019; Dikolli et al., 2020).

While both CEOs and CFOs may have strong financial incentives to misreport earnings (Chava and Purnanandam, 2010; Jiang et al., 2010), the latter ones bear substantial direct and indirect costs for committing accounting manipulations. This is because, unlike CEOs, they cannot credibly claim unawareness or lack of understanding of accounting matters. Accordingly, prior studies have shown that CFOs are more likely to face significant labour market costs in the presence of earnings management, including job turnovers (Hennes et al., 2008; Karpoff et al., 2008; Leone and Liu, 2010), loss of previously awarded compensation through clawback provisions (Kroos et al., 2018) and significant reduction in compensation levels (Hoitash et al., 2012). Additionally, as Feng et al. (2011) shows, CFOs of manipulating firms are more likely to face severe legal penalties, including future employment restrictions,

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[10]For example, Aier et al. (2005) show that firms whose CFOs have greater financial expertise are less likely to restate their earnings; Geiger and North (2006) find that the appointment of a new CFO is associated with a significant reduction in earnings management activities. By explicitly controlling for CEO effects, Ge et al. (2011) find that CFO style matters for various accounting choices (such as discretionary accruals); Bedard et al. (2014) document that firms whose CFOs sit on their boards are associated with higher financial reporting quality (e.g. lower discretionary accruals).

fines, disgorgement of illegal gains, and even criminal charges while they gain similar level of financial incentives as their counterparts in other firms. Feng et al. (2011) concludes that CFOs manipulate financial reports because they succumb to powerful CEOs' pressure, rather than for their personal financial benefit.

While prior research mainly focuses on CEO power, its sources and its potential to compromise the independence of a CFO, such research largely ignores the ability of CFOs to resist CEO pressure. Based on a large body of literature on power dynamics within top management teams (Goodstein and Boeker, 1991; Ocasio, 1994; Shen and Cannella, 2002; Greve and Mitsuhashi, 2007; Acharya et al., 2011; Joseph et al., 2014), we view power not only as the capacity of an individual to exert his/her will and *influence* over others but also as the ability to remain *uninfluenced* by others (Galinsky et al., 2008). CEO power is a relative concept, which, in our context, is best understood in relation to the power of the CFO. In the spirit of Friedman (2014), we argue that, under certain conditions, CFOs have the ability to resist to CEO pressure.

We consider several sources of resistance, one of the most important of which is the CFO's *formal power* within the organization (Greve and Mitsuhashi, 2007). Formal power allows top executives (such as the CFO) to reduce the power gap *vis-á-vis* the CEO and thus makes them less susceptible to CEO pressure (Shen and Cannella, 2002). A CFO can acquire formal power relative to the CEO through a seat on the board of directors. Board membership helps the CFO to establish direct links with other board members and build relationships of mutual trust through their frequent meetings and interactions (Westphal, 1999). This increases the CFO's ability to resist undue pressure from the CEO. Formal power is also reflected in a CFO's compensation relative to the CEO. As Finkelstein (1992) notes, relative compensation captures to a large degree relative influence within the top management team. We therefore expect CFOs with board membership and those with higher compensation relative to the CEO/board to have more capacity to resist CEO pressure.

Another source of resistance lies within the CFO's skills and expertise relative to the CEO. Firm-level tenure is a key determinant of the process of building skills and expertise within an organization (Beck and Mauldin, 2014). As firm tenure increases, managers acquire

deeper knowledge of the firm's resources, and operating environment (Westphal and Zajac, 1995), and, in the case of CFOs, become more informed about the firm's financial reporting and internal control systems. A longer firm tenure also provides executives with more time and opportunities to develop interpersonal relationships with other directors and obtain the resources and coalitions needed to "orchestrate, nurture, and support" any resisting actions (Simsek, 2007). We expect CFOs with longer firm tenure (relative to the CEO) to have a greater level of resistance to CEO pressure.

Social capital, as reflected in a CFO's personal social ties with other influential members of the board, serves as a further source of resistance. Social ties are often characterized by a high level of trustworthiness, loyalty, and intimacy, which enable individuals to share information, seek advice and gain support from their connections (Gibbons, 2004; Engelberg et al., 2012). Recent evidence by Hoitash and Mkrtchyan (2020) suggests that, contrary to CEO-board ties that could make CEOs more entrenched, social ties between the board and non-CEO executives provide an informal channel to these executives to share private information regarding CEOs' actions/decisions, which, in turn, improve board members' capacity to more diligently monitor and discipline CEOs. In our context, we argue that CFOs with stronger social ties with other directors, especially those who have competence in accounting-related matters (e.g. audit committee members), are more likely to both (i) highlight controversial issues such as CEOs' aggressive accounting and (ii) seek coalitions to oppose them. Accordingly, we expect CFOs with greater social capital to be more resistant to CEO pressure.

A CFO's external reputation or status (relative to the CEO) is also a critical determinant of his/her ability to resist. Executives with higher reputations in the external labor market are more likely to influence and gain respect from others (Badolato et al., 2014; Khan, 2019). Prior literature suggest that highly reputed managers are not only more influential on their boards, but are also less reliant on their CEOs for career advancement (Fama and Jensen, 1983; Masulis and Mobbs, 2011; Mobbs, 2013). Managers' outside opportunity wage also reflects the market value of their credibility and reputation, which in turn is subject to CEOs' (and other managers') actions and firm outcomes (Fama, 1980). This means that,

while CFOs with high reputational capital have a greater ability to resist, they also have stronger incentives to resist collusion with CEOs on earnings management. In fact, CFOs are more likely to constrain CEOs' opportunistic behavior to protect against their reputations being severely damaged.[11] We thus expect CFOs with higher reputational capital to be better equipped than others to resist CEO pressure.

Career considerations are also expected to influence the level of CFO resistance over misreporting behavior. Younger CFOs have long-term goals that are better defined than those of CFOs who are approaching retirement age (e.g. internal promotion goals). They also have more to lose from potential firm under-performance due to aggressive earnings management (Cheng et al., 2016).[12] For example, the potential loss of income from failing to find a comparable job in the future is higher for younger executives (Cannella et al., 1995). Accordingly, we expect that CFOs with longer career horizons will be less likely to put at risk the long-term value of the firm by trying to boost short-term profits through the means of earnings management. To the contrary, CFOs with fewer remaining years of employment with the firm (relative to the CEO) are more likely to succumb to CEO pressure.

In addition to their career horizon, a significant strand of literature in accounting, psychology and organizational behavior argues that individuals' professional concern and commitment also affect their decisions under pressure (see e.g. Raelin, 1985; Lord and DeZoort, 2001). Professional commitment is defined as the acceptance of (and belief in) the values and standards of a profession, a willingness to exert substantial effort on behalf of the profession, as well as the desire to maintain membership of that profession (Aranya and Ferris, 1984). In the context of our study, we argue that a professional, such as a Certified Public Accountant (CPA) or a Chartered Accountant (CA), in the CFO role will respond differently to internal pressures to manage earnings. This is because such professionally qualified

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[11]The loss of reputation leads to a decline in future wages and also to a decline in social prestige, disapproval from one's peers and loss of self-esteem (Francis et al., 2008). Consistent with the notion that the firm's financial reporting outcomes provide a direct signal of the CFO's reputation in the CFO labor market, an article on *CFO.com*, entitled "Why Is CFO Turnover So High" states that those CFOs who are associated with financial restatements or accounting manipulations "are almost invariable tainted beyond repair"; and "even if you [CFO] win your case, you're finished" (published on February 29, 2008).

[12]For instance, Jensen (2004) describes how short-term managerial goals can serve as potential sources of overvalued equity that end up destroying firm value.

CFOs, most likely, have been trained in ethics, have had to adhere to a code of ethics and have a strong sense of accountability, given the nature of the professional standards they must follow in the financial reporting process (Mayhew and Murphy, 2014; Hoitash et al., 2016).[13] In the spirit of Hoitash et al. (2016), we argue that professionally qualified CFOs (i.e. chartered accountants) may be more risk averse in their earnings management choices than non-professionally qualified CFOs. Accordingly, we expect them to be more resistant to CEO pressure.

We combine the aforementioned sources of power and develop a composite measure of *CFO Resistance*, analytically defined in Section 3.2 below, which captures the ability of the CFO to resist undue pressure from the CEO. Figure 1 presents the conceptual framework for our measure and its association with earnings management. We expect that CFOs with higher levels of resistance will be less likely to engage in earnings management. This leads to the following testable hypothesis:

**Hypothesis**: *CFO resistance is negatively associated with earnings management, ceteris paribus.*

## 3 Data, Construction of Variables and Descriptive Statistics

### 3.1 Sample

The dataset used in our analysis combines information from several sources. Specifically, the variables used for measuring CFO resistance are obtained from BoardEx. We use the BoardEx summary file to track the CFOs of all UK-listed companies over the period 1999-2015. We identify CFOs based on the data item "individual role" and by pinpointing the following titles[14]: CFO, chief financial officer, finance director (FD), group finance

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[13]In their paper, Mayhew and Murphy (2014) note that "the socialization process of becoming a CPA/CA and identifying with the associated ethics could produce a strong self-regulation mechanism within an individual when faced with a misreporting decision. Perhaps individuals holding such designations would be less likely to misreport and feel greater negative affect if they did" (see p.440). Also, professional bodies (in the UK and elsewhere), such as ICAEW, provide a conceptual framework for their members (qualified accountants) to help eliminate or reduce pressure (from immediate superiors, managers or colleagues), including attempts to exercise undue influence over them regarding unethical or illegal earnings management strategies (see Sections 100, 110 and 300 of the ICAEW Code of Ethics).

[14]UK firms do not uniformly use the title CFO. Many firms use other equivalent titles, such as Finance Director (FD) or Group Finance Director (GFD), to designate the head of the finance department. For ease of exposition, the common term CFO is used in this study.

director (GFD) and executive director (finance). Board and Audit Committee characteristics are obtained from BoardEx and Refinitiv Eikon. Firm characteristics and accounting information, including that used to estimate abnormal accruals, are taken from Refinitiv DataStream, while data on analysts consensus earnings forecasts are collected from the Institutional Brokers Estimate System (I/B/E/S). Data on firms' auditors are accessed from Financial Analysis Made Easy (FAME) and Bloomberg. Panel A of Table 1 describes the sample selection process. We start with a merged sample of 25,542 observations. We then exclude from the analysis financial institutions and utility firms, which account for 7,582 firm-years. We also exclude 6,311 firm-years with missing values for the variables used in our benchmark analysis. Our final sample contains 11,649 firm-year observations.

## 3.2 Variables

### 3.2.1 *CFO Resistance*

To construct our measure of CFO resistance, we consider a range of variables based on several sources of resistance, as analytically discussed in Section 2. Our first set of variables is intended to capture a CFO's formal position relative to the CEO. Specifically, we use *CFO Inside Director*, a dummy variable that identifies whether the CFO is an inside director or not, as in Bedard et al. (2014); *CFO/CEO Compensation*, defined as the ratio of the CFO's total compensation, excluding equity-based compensation,[15] to the CEO's total compensation, as in Ellul and Yerramilli (2013); and *CFO Salary Rank*, a dummy variable that identifies whether the CFO is one of the three most highly compensated executives at the firm (based on cash compensation in the form of salary and bonus), as in Ellul and Yerramilli (2013), Hopkins et al. (2015) and Koo and Lee (2018).

We then use variables that proxy for relative experience/expertise and social capital. Specifically, we use the variable *CFO/CEO Tenure*, which is the ratio of the CFO's to the CEO's tenure at the firm (in years). Beck and Mauldin (2014) also use tenure to measure

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[15]We exclude equity-based compensation because Ellul and Yerramilli (2013) argue that managers with a high proportion of equity compensation might have different incentives to affect corporate policies. Nevertheless, as a robustness test, we include equity-based compensation in the calculation of CFO/CEO compensation as an alternative measure and obtain similar results.

the CFO's expertise relative to that of the audit committee members. For social capital, we use *CFO Social Ties*, which is a dummy variable that identifies cases where the CFO has a social connection with at least one audit committee member but the CEO does not. We follow Bruynseels and Cardinaels (2014) and count social ties based on past education (i.e., graduating from the same school) and other social activities (such as memberships of the same leisure clubs, charities, country clubs, or other non-profit institutions).

To capture the CFO's status/reputation relative to that of the CEO, we use *CFO/CEO Outside Board*, which is the ratio of the total number of outside boards on which CFO serves as a director (including public, private and other boards) to the total number of outside boards on which the CEO serves as a director, as in Khan (2019) and Cunningham et al. (2020); and *CFO Elite Status*, a dummy variable that identifies cases where the CFO graduated from an elite institution but the CEO did not. Badolato et al. (2014) also use outside board memberships and elite educational background to capture CFOs' relative status. Our classification of elite institutions is consistent with Finkelstein (1992) and Badolato et al. (2014).[16]

Finally, to capture relative career concerns, we use the variable *CFO-CEO Career Horizon*, which is the difference between the CFO's and CEO's career horizons. Following Cheng et al. (2016), we define the CFO's (CEO's) career horizon as retirement age (i.e. 65) minus the age of the CFO (CEO). We also use the variable *CFO Professional Qualification*, a dummy identifying cases where the CFO has a professional qualification in accounting or financial analysis but the CEO does not.

*CFO Resistance* is a composite index of the nine variables mentioned above. For our benchmark analysis, we firstly convert all continuous variables into dummy variables (based on industry-year medians). We then sum up the nine indicator variables to obtain a firm-level measure of resistance, which by construction ranges from 0 (minimum resistance) to 9 (maximum resistance). For robustness purposes, we also use principal component analysis (PCA) to combine these variables. PCA accounts for the fact that the nine individual variables may

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[16]Appendix A provides details of the institutions that are classified as elite.

not contribute equally to the index.[17] As discussed into detail below, both methods yield similar results.

### 3.2.2 *Absolute Discretionary Accruals*

In our main analysis, we use the absolute value of discretionary accruals as our main proxy for earnings management. The use of the absolute value of accruals allows us to capture both income-increasing and income-decreasing earnings management when there is reason to expect both types of earnings management in a sample (Dyreng et al., 2012). The academic literature distinguishes between the non-discretionary and discretionary components of total accruals. The non-discretionary accruals are expected to reflect changes in the firm's economic conditions, such as assets and revenue growth, while discretionary accruals are meant to reflect management's accounting choices regarding the management of earnings (Jones, 1991; Dechow et al., 1995; Dechow et al., 2010). Prior literature suggests a variety of estimation strategies for distinguishing discretionary from non-discretionary accruals. We use an augmented version of the modified Jones model proposed by Kothari et al. (2005). To ensure that discretionary accruals are not driven by firm performance, Equation (1) includes the lagged return on assets, $ROA_{t-1}$.[18] Normal accruals are estimated using the following model:

$$\frac{Total\ Accruals_{i,t}}{Assets_{i,t-1}} = \beta_0 + \beta_1 \frac{1}{Assets_{i,t-1}} + \beta_2 \frac{\Delta REV_{i,t} - \Delta REC_{i,t}}{Assets_{i,t-1}} + \beta_3 \frac{PPE_{i,t}}{Assets_{i,t-1}}$$
$$+ \beta_4\ ROA_{i,t-1} + \varepsilon_{i,t} \tag{1}$$

where, Total Accruals$_{i,t}$ = EBXI − CFFO, with EBXI being earnings before extraordinary items and discontinued operations, and CFFO the operating cash flows taken from the cash flow statement;

$Assets_{i,t}$ = total assets at the beginning of the year;

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[17]The results of this analysis, as presented in Table IA.1 of the Internet Appendix, yields one component with an eigenvalue of 3.80. Following the common practice in the literature, we use only one component whose eigenvalue is *greater* than one as it indicates that the extracted component can explain more variance, i.e., has more explanatory power than any one of the original variables by itself.

[18]Prior studies by Guthrie and Sokolowsky (2010), Hazarika et al. (2012) and Bedard et al. (2014) use a similar model to measure discretionary accruals.

$\Delta REV_{i,t}$ = change in revenue from the preceding year;

$\Delta REC_{i,t}$ = change in accounts receivables from the preceding year;

$PPE_{i,t}$ = gross value of property, plant and equipment

$ROA_{i,t-1}$ = one-year-lagged return on assets

We estimate Equation (1) separately for each industry (two-digit SIC code) and year group. We use all observation for which the required data are available on Refinitiv DataStream, and require at least twenty observations in each industry-year grouping. Discretionary accruals are actual accruals minus non-discretionary accruals, calculated using the estimated coefficients from Equation (1). Under this measure, a higher level of discretionary accruals indicates earnings management (or lower earnings quality).

### 3.2.3 Real Earnings Management

We use the three measures proposed by Roychowdhury (2006) to proxy for real earnings management: (i) abnormal cash flow from operations ($RM\_CFO$), (ii) abnormal production cost ($RM\_PROD$) and (iii) abnormal discretionary expenses ($RM\_DISX$). The rationale is that accelerating sales through increased price discounts and lenient credit terms will lead to an increase in earnings, but will also result to lower cash flows in the current period. Likewise, managers may increase production to spread a fixed cost over a large number of units and thereby report a lower cost of goods sold (COGS). However, this will still lead to a higher production cost relative to sales. Regarding discretionary expenses, managers may reduce advertising, research and development (R&D), and selling, general and administrative (SG&A) expenses in order to boost a firm's current-period earnings. In general, firms with low abnormal $RM\_CFO$, low abnormal $RM\_DISX$, or high abnormal $RM\_PROD$ are more likely to be involved in real earnings management practices.

To calculate $RM\_CFO$, $RM\_PROD$ and $RM\_DISX$, we first generate normal levels of cash flow from operations, production cost and discretionary expenses using the model developed by Dechow et al. (1998), as implemented in Roychowdhury (2006). We estimate normal cash flow from operations by running the following cross-sectional regression for each (two-digit SIC) industry and year group:

$$\frac{CFFO_{i,t}}{Assets_{i,t-1}} = \beta_0 + \beta_1 \frac{1}{Assets_{i,t-1}} + \beta_2 \frac{Sales_{i,t}}{Assets_{i,t-1}} + \beta_3 \frac{\Delta Sales_{i,t}}{Assets_{i,t-1}} + \varepsilon_{i,t} \qquad (2)$$

Abnormal cash flow from operations ($RM\_CFO$) is the difference between actual cash flow from operations and the normal level of cash flow from operations as calculated from Equation (2). We then multiply $RM\_CFO$ by negative one to obtain a direct proxy of real earnings management; that is, the higher the value, the more likely it is for the firm to engage in real earnings management.

Likewise, we estimate the normal production cost ($RM\_PROD$) by running the following cross-sectional regression for each (two-digit SIC) industry and year group:

$$\frac{PROD_{i,t}}{Assets_{i,t-1}} = \beta_0 + \beta_1 \frac{1}{Assets_{i,t-1}} + \beta_2 \frac{Sales_{i,t}}{Assets_{i,t-1}} + \beta_3 \frac{\Delta Sales_{i,t}}{Assets_{i,t-1}} + \beta_3 \frac{\Delta Sales_{i,t-1}}{Assets_{i,t-1}} + \varepsilon_{i,t}$$
$$(3)$$

where $PROD_{i,t}$ is the production cost in year $t$, defined as the sum of COGS and the change in inventory during that year. The abnormal production cost ($RM\_PROD$) is the difference between the actual production cost and the normal production cost, as calculated from Equation (3).

Finally, we estimate the normal level of discretionary expenses by running the following cross-sectional regression for each (two-digit SIC) industry and year group:

$$\frac{DISC\_EXP_{i,t}}{Assets_{i,t-1}} = \beta_0 + \beta_1 \frac{1}{Assets_{i,t-1}} + \beta_2 \frac{Sales_{i,t-1}}{Assets_{i,t-1}} + \varepsilon_{i,t} \qquad (4)$$

where, $DISC\_EXP_{i,t}$ denotes discretionary expenses, defined as the sum of advertising expenses, R&D expenses and SG&A expenses in year $t$. Abnormal discretionary expenses ($RM\_DISX$) is the difference between actual discretionary expenses and non-discretionary expenses as calculated from Equation (4). We multiply $RM\_DISX$ by negative one to obtain a direct proxy for real earnings management. Following Cohen and Zarowin (2010), we compute two aggregate measures of real earnings management ($REM$), $REM\_1$ and $REM\_2$.

*REM_1* is the sum of *RM_PROD* and *RM_DISX*, while *REM_2* is the sum of *RM_CFO* and *RM_DISX*. Following Cohen et al. (2008), we also compute *REM_3*, which is the sum of the three standardized variables *RM_CFO*, *RM_PROD* and *RM_DISX*. In all three cases, the higher the value of the combined measure, the higher is the likelihood of real earnings management.

### 3.3 Summary Statistics

Table 1 (Panel B) provides key descriptive statistics for the main variables used in our analysis. We find that 81% of CFOs in our sample hold a board position, while 72% of them are among the three highest-paid executives within their firm. The mean compensation of the CFO relative to that of the CEO is 0.69. On average, CFO tenure is 1.92 times longer than CEO tenure. The average CFO also holds 1.36 more outside board positions than the CEO. In 53% of our firm-years, the CFO holds a professional qualification while the CEO does not. The average CFO's career horizon is found to be 3.87 years longer than that of the CEO. As for the firm-level characteristics, the average value of total assets is £1308.71 million while the average market-to-book and leverage ratios are 1.98 and 18%, respectively. The board-level data show that the average board size in our sample is seven directors, while 40% of all directors can be classified as financial experts. The composition of the board is well balanced between executive and non-executive directors (i.e., board independence equals 50%). The audit-level data show that the average audit committee has three directors. The vast majority of audit committee members are non-executive directors (i.e., audit committee independence equals 76%). The so-called Big 4 firms (Deloitte, Ernst and Young, KPMG and PricewaterhouseCoopers) are the primary auditors for 67% of our sample firm-years.

Table 2 presents a simple univariate mean/median comparison of the level of CFO resistance (and several other firm/board characteristics) across firms with low and high absolute discretionary accruals. We find that the mean (median) *CFO Resistance* is significantly higher in the sub-sample of firms with low discretionary accruals. The $t$ and Wilcoxon tests clearly reject the null hypothesis of equal means (medians) between the two sub-samples at the 1% level. Our univariate analysis hence provides preliminary evidence of a negative

association between our measures of CFO resistance and earnings management, as measured through discretionary accruals. We also observe that firms with high discretionary accruals, on average, experience high volatility in cash flows and sales, have higher litigation risk, and appear to have weaker board and audit governance than their counterparts with lower discretionary accruals.

## 4 CFO Resistance and Earnings Management

### 4.1 Benchmark Results

Table 3 presents regression results on the relationship between *CFO Resistance* and absolute discretionary accruals. The baseline specification (Model 1) is a simple ordinary least squares panel regression with standard errors clustered at the firm level. The dependent variable, absolute discretionary accruals, is estimated using an augmented version of the modified Jones model proposed by Kothari et al. (2005). The key explanatory variable of interest is our measure of CFO resistance. For the estimation, we use one-year-lagged values of *CFO Resistance*. The results, as presented in Table 3, support a negative association between *CFO Resistance* and absolute discretionary accruals. This suggests that firms with resistant CFOs (i.e., high values of *CFO Resistance*) are *less* likely to engage in earnings management, *ceteris paribus*. The economic magnitude of these findings is also significant. For instance, a one-standard-deviation increase in *CFO Resistance* is associated with a decrease in absolute discretionary accruals (as a percentage of total assets) of 1.53 percentage points.[19]

The coefficient estimates on the control variables are consistent with those presented in prior studies (see e.g. Bedard et al., 2014). Specifically, the coefficients on market-to-book, cash flow volatility, sales volatility, sales growth, and inventory and receivables are positive and statistically significant, which suggests that firms with better growth and investment opportunities, higher cash flow and sales volatility, and higher levels of inventories and receivables (as proportions of total assets) are more likely to engage in earnings management.

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[19]Given the sample mean of discretionary accruals in our sample (0.16), the documented effect is about 9.6%, which is economically significant.

To the contrary, the coefficients on firm size, return on assets and litigation risk are negative and statistically significant, which indicates that firms that are large, more profitable and have higher litigation risk are less likely to manage earnings through accruals.

In Model 2 of Table 3, we also control for board characteristics such as board size, board independence and board financial expertise. Following prior work on the impact of external auditors and audit committee effectiveness (Becker et al., 1998; Klein, 2002), we also add the Big 4 auditor indicator, audit committee size and audit committee independence to Model 3. We find that the coefficient estimate for *CFO Resistance* continues to remain negative and statistically significant at the 1% level in both models. We also find board financial expertise to be negatively associated with our proxy for earnings management.

In Model 4 of Table 3, we re-estimate our more general specifications with firm fixed effects, which control for firm-specific unobserved time-invariant characteristics that might drive the relationship between *CFO Resistance* and discretionary accruals. The estimates continue to show a negative and statistically significant association between *CFO Resistance* and discretionary accruals. This further eliminates the concern that firm-specific unobserved heterogeneity could be driving our results.

As a further robustness test, we re-estimate our benchmark specification after controlling for CEO and CFO fixed effects and obtain similar results (see Table IA.2 of the Internet Appendix). This suggests that the observed effect of CFO resistance on earnings management is not driven by CEOs' and/or CFOs' personal styles (see Bertrand and Schoar, 2003; Ge et al., 2011). Collectively, the results presented in this section support our main hypothesis that CFO resistance is negatively associated with earnings management.

## 4.2 CEO Incentives and the Moderating Role of CFO Resistance

The results thus far demonstrate the important role that CFO resistance plays in reducing earnings management. In this section, we focus on the conditions under which CFO resistance may matter the most (e.g. when CEOs are self-serving). Specifically, we focus on CEO (equity) incentives, which have been shown to drive opportunistic earnings management

behavior.[20] Equity holdings in their own firm, for example, tie CEOs' personal wealth to stock performance and hence may generate incentives for earnings management. Accordingly, prior studies not only show that CEO incentives are positively associated with earnings management (see e.g. Cheng and Warfield, 2005; Bergstresser and Philippon, 2006; Johnson et al., 2009) but also that firms whose CEOs have higher equity incentives are more likely to pressure their CFOs to engage in earnings manipulation (see Feng et al., 2011).

After examining whether CEO incentives affect earnings management in our sample of UK firms, we address the question of whether CFO resistance moderates that relationship. We expect the association between CEO incentives and earnings management to be *less* pronounced for firms with high CFO resistance, *ceteris paribus*. Empirically, we re-estimate our benchmark specification (Model 1 of Table 3) after including *CEO Incentives* and the interaction term *CFO Resistance* x *CEO Incentives* as additional explanatory variables. Following Cheng and Warfield (2005), we define *CEO Incentives* as the ratio of the value of common shares and options held by the CEO at the end of fiscal year $t$ to the market value of common shares outstanding.[21]

Model 1 of Table 4 presents the results. We find that the coefficient on *CEO Incentives* is positive and statistically significant at the 1% level. This confirms prior evidence that CEOs with higher equity incentives are more likely to engage in earnings management. We also find that the coefficient on the interaction term *CFO Resistance* x *CEO Incentives* is negative and significant at the 1% level. This can be interpreted as evidence that the effect of CEO incentives on earnings management is considerably weaker for firms with high levels of CFO resistance. These results hold after controlling for board- and audit-level characteristics (see Model 2).

Prior research shows that the incentives of both CEOs and CFOs are associated with

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[20]For example, Alan Greenspan, the former Chairman of the Federal Reserve Board, noted in his 2002 monetary policy report to Congress that equity incentives are among the key underlying causes of earnings management. Specifically, he stated that "Too many corporate executives sought ways to harvest some of those stock market gains. As a result, the highly desirable spread of shareholding and options among business managers perversely created incentives to artificially inflate reported earnings in order to keep stock prices high and rising."

[21]As a robustness test, we also follow the method described by Bergstresser and Philippon (2006) to measure CEO pay-for-performance sensitivity as our proxy for equity incentives. Specifically, this is defined as ONEPCT scaled by ONEPCT plus Salary and Bonus, where ONEPCT is the total change in the value of the CEO's stocks and stock option portfolio in response to a 1% change in the stock price. Our inferences remain the same.

earnings management (see e.g. Chava and Purnanandam, 2010; Jiang et al., 2010). In Models 3 and 4 of Table 4, therefore, we repeat the above analysis after replacing *CEO Incentives* with the variable *CEO Incentives Ratio*, which is defined as the ratio of CEO incentives to the sum of CEO incentives and CFO incentives (similarly to those in Feng et al., 2011 and Hoitash and Mkrtchyan, 2020). The inclusion of *CEO Incentives Ratio* enables us to capture the effect of CEO incentives on earnings management after adjusting for CFO incentives. Consistent with Feng et al. (2011), we document a positive and statistically significant coefficient on the ratio, which confirms our earlier finding that CEO incentives matter to earnings management. Importantly, our results show that the moderating effect of CFO resistance on the relationship between CEO incentives and earnings management remains robust even after taking into account CFO incentives.

For completeness, we independently test for the effect of CFO incentives on earnings management and find that, unlike CEO incentives, CFO incentives are not significantly associated with discretionary accruals (see results in Table IA.3 of the Internet Appendix). Besides equity incentives, CFOs may also be incentivized through performance-based components of CFO compensation. We, therefore, separately consider CFO stocks and options awards, and CFO payouts from long-term incentive plans (LTIPs). Again, we do not find any evidence that CFOs' performance-based compensation incentives encourage resistant CFOs to aggressively manage earnings (see results in Table IA.4 of the Internet Appendix).

Collectively, we interpret the findings of Table 4 as evidence that, while potentially self-interested CEOs (i.e. those with strong incentives) are more likely to engage in earnings management, the presence of resistant CFOs seems to prevent or discourage such opportunistic behavior.

# 5   CFO Resistance and the Audit Quality Channel

One potential channel through which CFO resistance might affect earnings management is by improving (internal and external) audit quality. Despite regulatory initiatives aimed at improving audit committee independence and removing management influence from the auditor selection decision, CEOs remain (often highly) influential at both levels. Carcello

et al. (2011) provide evidence suggesting that audit committees are less effective (in terms of both independence and expertise) when the CEO sits on the board nomination committee. Lisic et al. (2016) show that the monitoring intensity of audit committees (proxied by the number of meetings held) is weaker in firms with powerful CEOs. In a similar spirit, Cassell et al. (2018) find that audit committee co-option (i.e., the proportion of directors who joined the board after the CEO's appointment) is associated with less effective monitoring and, in general, lower financial reporting quality. Prior survey evidence confirms that CEOs often have a significant influence over auditors' appointment and dismissal decisions, even though contractual responsibility for selecting external auditors remains with the audit committee (Beasley et al., 2009; Cohen et al., 2010). Consistent with survey evidence, Lennox and Park (2007) document a strong alumni effect within a large sample of companies that change auditors, that is, a tendency of companies to select senior officers' (e.g. CEOs') former firms.

Following this line of reasoning, we argue that the presence of resistant CFOs limits CEOs' influence over firms' audit processes (e.g. audit committee membership / auditor selection decisions). As a result, we expect a positive association between CFO resistance and audit quality. For our empirical tests, we use four proxies for audit quality. Following prior studies (Carcello and Neal, 2000; Klein, 2002; Krishnan, 2005; Zhang et al., 2007), we use two measures of internal audit committee quality, namely *Audit Committee Independence*, a dummy variable that equals 1 if the proportion of independent directors on the audit committee is 100% and 0 otherwise; and *Audit Committee Expertise*, a dummy variable that equals 1 if the company has an audit committee with at least three members and at least one financial expert sitting on it, and 0 otherwise. Our third measure, namely *Big 4*, is a dummy variable that equals 1 if the firm is audited by one of the Big 4 audit firms and 0 otherwise, proxies for external auditor quality (see Becker et al., 1998; DeFond and Jiambalvo, 1991). The fourth measure is a composite measure of audit quality, hereafter *Audit Quality Index*, which is simply the sum of the dichotomous variables *Audit Committee Independence*, *Audit Committee Expertise* and *Big 4*. Detailed analytical definitions of these variables are provided in Appendix A.

The results, as presented in Table 5, show that firms with resistant CFOs exhibit better

audit committee quality – in terms of independence and financial expertise – and a higher likelihood of being audited by a Big 4 accounting firm. They also exhibit higher overall audit quality, as measured by *Audit Quality Index*. Collectively, these results identify the improvement of internal and external audit quality as a plausible channel through which CFO resistance may matter to earnings management.[22]

# 6  Robustness Checks

## 6.1  An Instrumental Variable Approach

In this section, we employ an IV approach. The first task is to identify suitable instruments that satisfy both the relevance (i.e., associated with *CFO Resistance*) and exclusion (i.e., no direct effect on discretionary accruals except through *CFO Resistance*) criteria (see Larcker and Rusticus, 2010). We first focus on the financial expertise of the directors connected to the CFO. In particular, we use the number of financial experts sitting on *other* firms' boards where the CFO also serves as a non-executive director (termed *NOFE*) as an instrument for *CFO Resistance*. Based on the findings of the literature on directors' network effects, we argue that the higher is *NOFE*, the higher will be the value of *CFO Resistance*. This is because CFOs are likely to realize positive "externalities" from their external links in their professional network – particularly from those who share similar views and expertise – and through the social-learning processes that occur within them (Geletkanycz et al., 2001; Inkpen and Tsang, 2005; Dichev et al., 2013). Prior literature on social learning suggests that inter-organizational networks provide an opportunity for individuals to observe, communicate and evaluate the responses and attributes of their peers who share relevant experience. This in turn allows them to learn and respond to organizational pressures in their own firm in a similar manner as has previously been adopted by their network peers (Kraatz, 1998). A CFO who is part of a strong network of financial experts is thus more likely to benefit from his/her peers' responses to work-related pressures, such as aggressive

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[22]Two outstanding issues that should guide future research are the following. First, the audit quality channel is not the only channel through which CFO resistance can influence financial reporting quality. Second, more research is needed to explore the ways through which a team perspective — in the spirit of Li (2019) and Friedman (2016) — can provide better monitoring of the financial reporting process (e.g. through collaboration among CFOs and audit committee members).

earnings management. While *NOFE* is clearly correlated with *CFO Resistance*, however, it is unlikely to be directly associated with firms' discretionary accruals

To identify a second instrument, we focus on firms that experienced exogenous CEO (but not CFO) turnovers in the year $t$-1. In particular, we use the variable *CEO Departures*, which takes the value of 1 if the CEO leaves their position in the year $t$-1 for exogenous reasons (such as death, poor health or the natural retirement of CEOs who are 63 years of age or older[23], conditional on there being no change to the current CFO, and 0 otherwise. The choice of this instrument is motivated by prior studies (see e.g. Shen and Cannella, 2002; Shen, 2003) suggesting that incoming CEOs face significant challenges posed by the demands of their new job, thus making them highly vulnerable to power contests with other senior executives (including CFOs), particularly in their first year of service. The fact that incoming CEOs need time to establish their authority in the top position and to acquire power from a variety of sources provides CFOs with an opportunity to have increased influence over the CEO. We therefore expect a positive association between *CEO Departures* and *CFO Resistance*. Like *NOFE*, our second instrument theoretically satisfies both the relevance and exclusion requirements, as we cannot identify any direct economic link between past *CEO Departures* and discretionary accruals, other than through *CFO Resistance*.[24]

Our two-stage estimation approach is implemented as follows. In the first stage, we estimate the following regression:

$$CFO\ Resistance_{i,t} = \beta_0 + \beta_1\ NOFE_{i,t} + \beta_2\ CEO\ Departures_{i,t-1} + \ \gamma\ X_{i,t}$$
$$+ f_t + \ \nu_i + \ \varepsilon_{i,t} \tag{5}$$

In the second stage, the predicted value of *CFO Resistance*, estimated in the first stage, is

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[23]Following Fee et al. (2013), we exclude those cases where a CEO retires following poor financial performance of their firm (i.e., below-median industry-adjusted ROA) because such CEO departures could have occurred for endogenous reasons (forced departures).

[24]One might argue that a CEO departure may be associated with earnings management if the incoming CEO takes a "big bath" by reporting poorer earnings (managing earnings downward). Prior literature (see e.g. Pourciau, 1993; Murphy and Zimmerman, 1993) shows that incoming CEOs often take an immediate earnings bath so that they can blame the firm's poor performance in transition-year on departing CEOs and, by doing so, take credit for boosting firm performance in the following years. However, note that our measure, CFO Resistance, is lagged one year in all specifications and therefore the instrument used, CEO Departure, is lagged two years. This suggest that the mechanism described above is less likely to apply in our setting. Still, for robustness purposes, we re-estimate our IV regressions (Models 1-4 of Table 6) using only NOFE as an instrument and obtain similar results with those reported in Table 6.

used as an explanatory variable in our discretionary accruals model. Specifically, we estimate the following regression:

$$Absolute\ Discretionary\ Accruals_{i,t} = \alpha + \beta_1\ Predicted\ CFO\ Resistance_{i,t-1} + \gamma\ X_{i,t}$$

$$+ f_t + \nu_i + \varepsilon_{i,t} \tag{6}$$

In Equation (5), *CFO Resistance* is the dependent variable, while the number of financial experts (*NOFE*) and *CEO Departures* are used as IVs. The vector $X_{i,t}$ includes the same controls as in our benchmark specification (Model 1 of Table 3). In Equation (6), we use the same controls as in the first stage. Our main variable of interest is *Predicted CFO Resistance.*

Table 6 presents the results from the first- and second-stage regressions. In the first-stage regression (Model 1), we find that the coefficients on *NOFE* and *CEO Departures* are positive and statistically significant, suggesting that our instruments are significantly associated with *CFO Resistance.* In the second-stage regression (Model 2), we find *Predicted CFO Resistance* to be negatively associated with discretionary accruals, which is consistent with our benchmark results (see Table 3).

To formally assess the validity/relevance of our instruments, we perform two tests. First, we calculate and report the Kleibergen-Paap rank Wald $F$-statistic for weak instruments. We find the $F$-statistic to be above the cut-off value suggested by Stock et al. (2002), which suggests that the null hypothesis for weak instruments can be rejected. We also estimate and report Hansen's $J$-test of over-identifying restrictions under the null that the instruments are valid. The Hansen $J$-test statistic yields a $p$-value of 0.935, which means that we cannot reject the null hypothesis that our instruments are valid.

In Models 3 and 4 of Table 6, we re-estimate Equations (5) and (6) after controlling for a set of board- and audit-level characteristics. We find that the coefficient on *Predicted CFO Resistance* retains its negative sign and statistical significance. Kleibergen and Paap's (2006) weak identification $F$-test suggests that our two instruments are not weak while Hansen's $J$-test further supports their validity. Overall, the results based on an IV-approach support our hypothesis that firms with resistant CFOs are associated with lower levels of earnings management.

For completeness, we also employ a two-step IV-GMM (Generalised Method of Moments) estimator (see Baum et al., 2003) and use three lags of *CFO Resistance* as additional instruments. The results, as discussed in Section IA.5 of the Internet Appendix, further support a strong negative relationship between *CFO Resistance* and earnings management (see Models 2 and 4 of Table IA.5 of our Internet Appendix).

## 6.2 Propensity Score Matching

In this section, we employ a propensity score matching (PSM) technique (see Rosenbaum and Rubin, 1983), which allows us to compare the discretionary accruals of two groups of firms that are similar in terms of several observable characteristics but not in their level of CFO resistance. Specifically, the treatment group includes firms whose CFOs have a high level of resistance while the control group includes similar firms whose CFOs have a low level of resistance to CEO pressure. This helps isolate the effect of CFO resistance on earnings management.

We implement this procedure in two stages. In the first stage, we use a logistic regression to calculate the probability (i.e., propensity score) that a firm has a resistant CFO as a function of several characteristics. Shipman et al. (2016) suggest that, in order to improve the application of PSM, all covariates used in a multiple regression framework should be included in the matching (first) stage. We therefore model the propensity score as a function of all controls used in Table 3, including firm size, market-to-book, leverage, return on assets, cash flow volatility, sales volatility, sales growth, litigation risk, inventory and receivables, board size, board independence, board financial expertise, the Big 4 indicator, audit committee size, audit committee independence, and industry and year fixed effects.

In the second stage, we use the calculated propensity scores to match each high-CFO-resistance firm to a similar firm with low CFO resistance. In doing so, we use the nearest-neighbor matching technique without replacement (as suggested by Leuven and Sianesi, 2003).[25]. We find close matches for 4,454 (high-CFO-resistance) firm-year observations. Our

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[25]To ensure accurate matching, we require that the maximum difference between the propensity scores of the two groups does not exceed 0.01 in absolute terms. As noted in Shipman et al. (2016), imposing a caliper is generally the best practice for decreasing the likelihood of "poor" matches and improving covariate balance (p. 218)

final panel hence includes 8,908 observations.

In Panel A of Table 7, we present the results from a covariate balance test, which assesses whether the average values of the covariates are similar across the treatment (high-CFO-resistance) and control (low-CFO-resistance) firms.[26] The results show that all the mean differences in the firm, board and audit characteristics between the treatment and control firms are statistically insignificant. This shows that the two sub-samples are similar with respect to various observable firm- and governance-level characteristics. In Panel B of Table 7, we re-estimate our firm fixed-effects specification (Model 4 of Table 3) on the propensity matched sample. Consistent with our main findings in Table 3, the results suggest that firms with resistant CFOs are less likely to engage in earnings management than their non-resistant counterparts.

### 6.3 Evidence from CFO Turnovers: A Difference-in-Difference Analysis

A potential limitation of PSM is that it does not rely on a clear source of exogenous variation in assigning firms into treatment and control groups. As Roberts and Whited (2013) and Shipman et al. (2016) note, PSM will not address endogeneity concerns relating to selection based on unobservable factors. To alleviate this concern, we conduct a difference-in-difference analysis by exploiting CFO turnover events that are likely to be exogenous (see analytical discussion in Section IA.6 of our Internet Appendix). To ensure an adequate number of observations for our analysis, we look only at turnovers from less resistant to resistant CFOs and observe the corresponding changes in discretionary accruals. Our results show that, for the average firm in our sample, a turnover from a non-resistant CFO to a resistant CFO is associated with a significant decline in discretionary accruals (see Table IA.6). This evidence further supports the important role CFO resistance plays in reducing earnings management.

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[26]In addition to the *t*-tests, we report the normalized differences to assess the economic differences between matching covariates (see e.g. Hoitash et al., 2016). The normalized difference is calculated as the difference in means between the treatment and matched groups, divided by the square root of the average of the group variances. A normalized difference of 0.25 or less indicates an acceptable balance (Imbens and Wooldridge, 2009). All of our normalized differences are less than 0.25, indicating that the economic differences in the covariates between the two groups of firms are also negligible.

### 6.4 Alternative Measures of Earnings Management

This section examines whether the results based on discretionary accruals are robust to using alternative measures of earnings management. We first investigate whether CFO resistance prevents the occurrence of real earnings management – REM. Such analysis is motivated by Graham et al.'s (2015) survey evidence, which shows that firms commonly engage in REM (for example by delaying R&D, advertising and maintenance expenditures) in an attempt to meet and/or beat earnings benchmarks. Interestingly, prior studies also show that firms that engage in REM often strategically use these real activities as a substitute for accruals-based earnings management (Roychowdhury, 2006; Cohen et al., 2008; Cohen and Zarowin, 2010; Zang, 2012).

As discussed in Section 3, we follow Cohen and Zarowin (2010) and use two aggregate measures, namely *REM_1* and *REM_2*, to capture the extent of real earnings management at the firm level. *REM_1* is defined as the sum of abnormal discretionary expenses (*RM_DISX*) and abnormal production cost (*RM_PROD*). *REM_2* is defined as the sum of abnormal cash flow from operations (*RM_CFO*) and abnormal discretionary expenses (*RM_DISX*). For ease of interpretation, we multiply *RM_DISX* and *RM_CFO* by -1, such that higher values indicate a greater extent of real activities manipulation (through sales manipulation and by cutting discretionary expenses, respectively). Following Cohen et al. (2008), we also use *REM_3*, which is the sum of the three standardized variables *RM_CFO*, *RM_PROD* and *RM_DISX*. Again as discussed in Section 3, *RM_CFO*, *RM_PROD* and *RM_DISX* are the residuals from Equations (2), (3) and (4) respectively.

Table 8 presents the results on the association between *CFO Resistance* and *REM_1*, *REM_2* and *REM_3*. We find that the coefficient on *CFO Resistance* is negative and statistically significant across all three specifications, suggesting that firms with resistant CFOs are *less likely* to engage in *real* earnings management. A direct implication of this finding is that resistant CFOs help firms constrain earnings management conducted through real activities just as they do that conducted by means of discretionary accruals. Consequently, we can rule out the possibility that our earlier finding of a negative association between *CFO Resistance* and accrual-based earnings management might be attributable to a shift of CEOs' pressure

on CFOs in terms of engaging in different earnings management strategies (i.e. a switch from accrual-based to real-activities-based earnings management).

In Section IA.7 of the Internet Appendix, we also examine the association between *CFO Resistance* and the likelihood to meeting or just beating analysts' earnings estimates, which has been proposed as an alternative outcome-based proxy for earnings management (see e.g. Dechow and Skinner, 2000; Graham et al., 2005; Cheng and Warfield, 2005; Jiang et al., 2010). We find that firms with resistant CFOs are less likely to meet or beat analyst earnings expectations. Overall, the evidence reported in this section supports the view that our main findings hold across different measures of earnings management.

## 7 Conclusion

Powerful CEOs typically exert pressure on CFOs to manipulate the financial reporting system (Friedman, 2014; Feng et al., 2011). Drawing upon Friedman's (2014) agency model, we argue that, under certain conditions, the ability of the CEO to put pressure on the CFO is limited and depends on the CEO's power *relative* to that of the CFO. Accordingly, we develop an empirical measure of CFO resistance, which captures the ability of the CFO to resist undue pressure from the CEO to manage earnings. To do so, we combine several sources of relative power of the CFO *vis-á-vis* the CEO, such as position, experience, expertise, status and professional commitment.

In a setting where CFO resistance is perceived to be high – the United Kingdom – we find that firms with resistant CFOs are associated with significantly lower discretionary accruals. This result survives a battery of robustness tests, including models that control for a series of CEO-, board- and governance-level characteristics, and also for firm-, CFO- and CEO-fixed effects. It also remains robust when we use real activities manipulation as a proxy for earnings management, suggesting that resistant CFOs help constrain earnings management through real activities just as they do by means of discretionary accruals. Our inferences also remain unaffected when we address endogeneity through an instrumental variable approach and a difference-in-difference setting that exploits exogenous CFO turnovers.

In a subsequent analysis, we show that, in addition to its direct effect, CFO resistance

has a moderating (indirect) effect on the relationship between CEO incentives and earnings management. After validating previous evidence that CEOs with strong incentives are more likely to manage earnings, we find that this effect is significantly less pronounced in the presence of resistant CFOs. We also provide evidence on a particular channel through which CFO resistance affects financial reporting quality; specifically, we show that firms with resistant CFOs are associated with greater audit committee (financial) expertise, higher audit committee independence and also higher-quality external audits.

Overall, our findings suggest that resistant CFOs play an important monitoring role in the financial reporting process, especially in firms where powerful CEOs with self-serving motives are in place. Our research will be of particular interest to firms but also to policymakers and regulators in their attempts to improve accountability through financial reporting. The evidence presented in this study suggests that emphasis on the CEO alone (e.g. on CEO incentives or conditions that tilt the power balance in favor of the CEO) is not sufficient for a full understanding and prevention of the practice of earnings management. Rather, CFOs also matter because the ability of CEOs to exert pressure on CFOs is limited by their power *relative* to the CFOs. Firms can improve the quality of financial reporting by improving CFO independence in the finance and accounting functions and, more generally, by creating conditions that enable CFO resistance to CEO pressure.

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# Appendix A

| Variable Name | Data Definition |
| --- | --- |
| **Managerial Characteristics** | |
| CFO Inside Director | Dummy variable coded 1 if the CFO sits on the board of directors and 0 otherwise. |
| CFO Salary Rank | Dummy variable coded 1 if the CFO is among the three highest paid executives and 0 otherwise. |
| CFO/CEO Compensation | Ratio of the CFO's total compensation, excluding equity-based awards, to the CEO's total compensation (in £ thousands). |
| CFO/CEO Tenure | Ratio of the CFO's tenure to the CEO's tenure in the firm (in years). |
| CFO Social Ties | Dummy variable coded 1 if the CFO has a social ties (based on past education, or other non-professional activities, including shared memberships in leisure clubs, charities, country clubs, or other non-profit institutions) with at least one audit committee member but the CEO does not, and 0 otherwise. |
| CFO/CEO Outside Board | Ratio of total number of outside board on which CFO serves as a director (public, private and other) to the total number of outside boards on which the CEO serves as a director. |
| CFO Elite Status | Dummy variable coded 1 if the CFO graduated from an elite institution but CEO does not, and 0 otherwise. Elite institutions are consistent with studies such as Badolato et al. (2014) and Finkelstein (1992) and includes: Amherst College, Brown University, Carleton College, Columbia University, Cornell University, Dartmouth College, Harvard University, Haverford College, Johns Hopkins University, Massachusetts Institute of Technology, New York University, Northwestern University, Oberlin College, Princeton University, Stanford University, Swarthmore College, United States Military Academy, United States Naval Academy, University of California, Berkeley, University of California, Los Angeles, University of Chicago, University of Michigan, University of Pennsylvania, Wellesley College, Williams College, and Yale University. Given that our sample is drawn from UK data, we extend the list by including universities that ranked top 5 UK universities as per US News and World Report Rankings. The following are: University of Oxford, University of Cambridge, Imperial College London, King's College London, London School of Economics and Political Science. Additionally, we also add Royal Air Force College, Royal Military Academy, Royal Dutch Air Force and Royal Naval College similar to Finkelstein (1992). |
| CFO-CEO Career Horizon | Difference between CFO career horizon and CEO career horizon. Following Cheng et al. (2016), we define CFO (CEO) career horizon as retirement age (i.e. 65) *minus* the age of the CFO (CEO). |
| CFO Professional Qualification | Dummy variable coded 1 when the CFO has a chartered qualification in accounting or financial analysis but the CEO does not, and 0 otherwise. |
| CFO Resistance | Sum of nine dichotomous variables that includes CFO inside director, CFO salary rank, CFO/CEO compensation, CFO/CEO tenure, CFO social ties, CFO/CEO outside board, CFO elite status, CFO-CEO career horizon and CFO professional qualification. For this purpose, we create dichotomous measures of the continuous variables among nine proxies of CFO resistance based on industry-year medians (i.e., 1 if the variable is above the industry-year median, and 0 otherwise). |
| CEO Incentives | Ratio of the value of common shares and options held by the CEO at the end of fiscal year $t$ to the market value of common shares outstanding. |
| CFO Incentives | Ratio of the value of common shares and options held by the CFO at the end of fiscal year $t$ to the market value of common shares outstanding. |

# Appendix A (Continued)

| Variable Name | Definition |
|---|---|
| NOFE | Number of financial expert directors (i.e. have a chartered qualification in accounting or financial analysis, are in finance-related roles such as CFOs, finance directors or equivalent, or current CEOs with past CFO experience) in BoardEx sitting on *other* firms' board where the CFO also serves as a non-executive director. |
| CEO Departures | Dummy variable coded 1 if the CEO leaves the position in the previous year ($t$-1) for exogenous reasons (such as death, poor health or natural retirement of CEOs who are 63 years of age or older and followed by strong financial performance in their firm i.e., above-median industry-adjusted ROA). |
| CFO LTIP Compensation | Ratio of the payout from long-term incentive plans <u>awarded</u> to the CFO at the end of fiscal year $t$ to the CFO's total compensation. |
| CFO Equity Compensation | Ratio of the CFO's equity-based compensation to the CFO's total compensation. |

**Earnings Management Proxies**

| | |
|---|---|
| Abs. Discretionary Accruals | The absolute value of discretionary accruals as computed using an augmented version of the modified Jones model (following Kothari et al., 2005). See Section 3 for details |
| RM_CFO | The level of abnormal cash flow from operation (following Roychowdhury, 2006). We multiply RM_CFO by negative one, so that the higher values the more likely it is that the firm is engaging in sales manipulations. See Section 3 for details |
| RM_PROD | The level of abnormal production cost, where production costs are defined as the sum of cost of good sold (COGS) and the change in inventories (following Roychowdhury, 2006). See Section 3 for details |
| RM_DISX | The level of abnormal discretionary expenses, where discretionary expenses are the sum of advertising expenses, R&D expenses and SG&A expenses (following Roychowdhury, 2006). We multiply RM_DISX by negative one so that the higher values, the more likely it is that the firm is cutting its discretionary expenses. See Section 3 for details |
| REM_1 | The sum of RM_PROD and RM_DISX (following Cohen and Zarowin, 2010). |
| REM_2 | The sum of RM_CFO and RM_DISX (following Cohen and Zarowin, 2010). |
| REM_3 | The sum of the standardized three real earnings management proxies, i.e., RM_CFO, RM_PROD and RM_DISX (following Cohen et al., 2008). |
| JUST_MEET_BEAT | Dummy variable coded 1 if a firm's meet or just beat analysts' consensus forecast by one penny and 0 otherwise. |

**Firm Characteristics**

| | |
|---|---|
| Firm Size | Natural log of book value of total assets. |
| Market-to-Book Ratio | Ratio of the book value of assets minus the book value of equity plus the market value of equity to the book value of assets. |
| Leverage | Ratio of long term debt plus short term debt to total assets. |
| Return on Assets (ROA) | Earning before extraordinary items to total assets. |
| Cash Flow Volatility | Standard deviation of the firm's cash flow over the prior five years. |
| Sales Volatility | Standard deviation of the firm's sales or revenue over the prior five years. |
| Sales growth | Dummy variable coded 1 if the year-over-year industry-adjusted sales growth falls into the top tercile and 0 otherwise, similar to Bedard et al. (2014). |
| Litigation Risk | Dummy variable coded 1 if the firm belongs to a high litigation risk industry (pharmaceutical/biotechnology, computers, electronics and retail) and 0 otherwise. |
| Inventory and Receivables | Ratio of total inventory and account receivables to total assets. |

# Appendix A (Continued)

| Variable Name | Definition |
|---|---|
| **Board and Audit Characteristics** | |
| Big 4 | Dummy variable coded 1 if the firm's auditor is a Big 4 auditor and 0 otherwise. |
| Board Size | Number of directors on the board. |
| Board Independence | Ratio of number of non-executive directors to board size. |
| Board Financial Expertise | Dummy variable coded 1 if at least one outside director has a past experience in the CFO's or financial director's role and 0 otherwise. |
| Audit Committee Size | Number of directors on the audit committee. |
| Audit Committee Independence | Dummy variable coded 1 if the proportion of independent audit committee members on the audit committee is 100% and 0 otherwise. An audit committee member appears to be independent if the committee member's only tie to the firm is his or her service as a board member. |
| Audit Committee Expertise | Dummy variable coded 1 if the company has a audit committee with at least three members and at least one financial expert sitting on that committee and 0 otherwise. Financial expert is defined as an audit committee member who is now, or has been in the past, a certified public accountant, chief financial officer, controller, treasurer, vice president finance, investment banker, or venture capitalist. |
| Audit Quality Index | The sum of three dichotomous variables including audit committee independence, audit committee expertise and Big 4. |

**Figure 1**

**A Conceptual Framework of CFO Resistance**

The figure depicts a conceptual framework for our main hypothesis. The figure predicts that the firms with high (low) level of *CFO Resistance* will be less (more) likely to engage in earnings management. Analytical definitions of all variables are provided in the Appendix A.
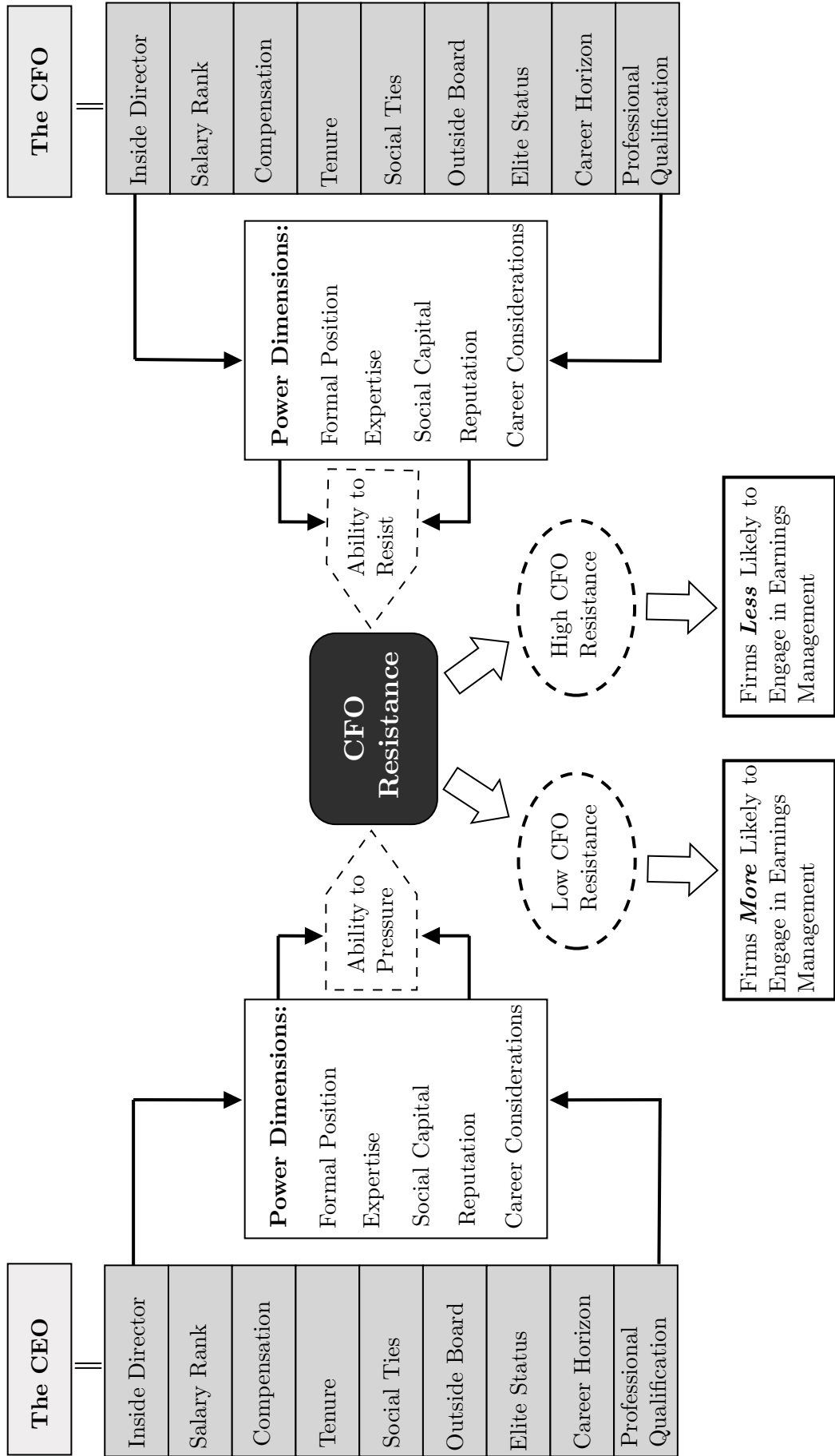
## Table 1
## Sample Selection and Descriptive Statistics

This table describes the selection process of our final sample (Panel A) and presents descriptive statistics for the main variables used in our analysis (Panel B). Analytical definitions for all variables are provided in the Appendix A.

| Panel A: Sample Selection | Obs. |
|---|---|
| Total number of firm-year observations from 2000-2015 with Refinitiv Eikon, Refinitiv DataStream and BoardEx data | 25,542 |
| Exclude: Financial and Utility firms | (7,582) |
| Exclude: Missing values for the variables used in our main regressions | (6,311) |
| **Final Sample** (Number of unique firms: 2,208) | 11,649 |

**Panel B: Full Sample Summary Statistics**

| | N | Mean | Median | S.D. | P25 | P75 |
|---|---|---|---|---|---|---|
| *CFO Resistance Components* | | | | | | |
| CFO Inside Director | 11,649 | 0.81 | 1.00 | 0.39 | 1.00 | 1.00 |
| CFO Salary Rank | 11,649 | 0.72 | 1.00 | 0.45 | 0.00 | 1.00 |
| CFO/CEO Compensation | 11,649 | 0.69 | 0.63 | 0.49 | 0.51 | 0.77 |
| CFO/CEO Tenure | 11,649 | 1.92 | 0.88 | 3.93 | 0.40 | 1.40 |
| CFO Social Ties | 11,649 | 0.01 | 0.00 | 0.07 | 0.00 | 0.00 |
| CFO/CEO Outside Board | 11,649 | 1.36 | 1.00 | 2.68 | 0.50 | 1.00 |
| CFO Elite Status | 11,649 | 0.06 | 0.00 | 0.23 | 0.00 | 0.00 |
| CFO – CEO Career Horizon (in years) | 11,649 | 3.87 | 4.00 | 8.71 | −1.00 | 10.00 |
| CFO Professional Qualification | 11,649 | 0.53 | 1.00 | 0.50 | 0.00 | 1.00 |
| CFO Resistance | 11,649 | 3.78 | 4.00 | 2.19 | 3.00 | 5.00 |
| | | | | | | |
| *Firm Characteristics* | | | | | | |
| Absolute Discretionary Accruals | 11,649 | 0.16 | 0.06 | 0.30 | 0.03 | 0.15 |
| Firm Size | 11,649 | 11.62 | 11.47 | 2.28 | 10.02 | 13.14 |
| Total Assets (in £millions) | 11,649 | 1308.71 | 95.79 | 4399.78 | 22.43 | 510.30 |
| Market to Book | 11,649 | 1.98 | 1.40 | 2.07 | 1.04 | 2.10 |
| Leverage | 11,649 | 0.18 | 0.13 | 0.20 | 0.01 | 0.27 |
| Return on Assets | 11,649 | 0.01 | 0.09 | 0.37 | −0.01 | 0.15 |
| Cash Flow Volatility | 11,649 | 0.11 | 0.05 | 0.24 | 0.03 | 0.10 |
| Sales Volatility | 11,649 | 0.22 | 0.14 | 0.27 | 0.07 | 0.26 |
| Sales Growth (industry-adjusted) | 11,649 | 0.07 | −0.00 | 0.36 | −0.11 | 0.14 |
| Litigation Risk | 11,649 | 0.14 | 0.00 | 0.34 | 0.00 | 0.00 |
| Inventory and Receivables | 11,649 | 0.28 | 0.24 | 0.20 | 0.11 | 0.40 |
| | | | | | | |
| *Board and Audit Characteristics* | | | | | | |
| Board Size | 11,649 | 6.98 | 7.00 | 2.48 | 5.00 | 8.00 |
| Board Independence | 11,649 | 0.50 | 0.00 | 0.50 | 0.00 | 1.00 |
| Board Financial Expertise | 11,649 | 0.40 | 0.00 | 0.49 | 0.00 | 1.00 |
| Big 4 | 11,649 | 0.67 | 1.00 | 0.46 | 0.00 | 1.00 |
| Audit Committee Size | 11,649 | 2.95 | 3.00 | 0.99 | 2.00 | 3.00 |
| Audit Committee Independence | 11,649 | 0.76 | 1.00 | 0.36 | 0.67 | 1.00 |

## Table 2
### Univariate Comparison of Firms with Low and High Discretionary Accruals

This table presents the mean and median of main variables used in our analysis separately for two groups with low and high absolute discretionary accruals, based on the yearly-median values of discretionary accruals. Discretionary accruals are computed using an augmented version of modified Jones model, as defined by Kothari et al. (2005). The t-statistic is for a difference in means and the z-test (Wilcoxon) is for difference in medians between low and high discretionary accrual firms. Analytical definitions for all variables are provided in the Appendix A. *** and ** denote statistical significance at the 1% and 5% levels, respectively.

| | Discretionary Accruals | | | Discretionary Accruals | | |
| --- | --- | --- | --- | --- | --- | --- |
| | Low (Mean) | High (Mean) | Difference t-test | Low (Median) | High (Median) | Difference z-test |
| CFO Resistance | 3.95 | 3.60 | 8.86*** | 4.00 | 4.00 | 6.20*** |
| CFO Resistance (PCA index) | 0.24 | −0.07 | 9.68*** | 0.61 | 0.55 | 18.56*** |
| Firm Size | 12.15 | 11.10 | 25.60*** | 11.99 | 10.96 | 25.19*** |
| Market to Book | 1.75 | 2.22 | −12.24*** | 1.35 | 1.48 | −8.64*** |
| Leverage | 0.18 | 0.17 | 1.94** | 0.15 | 0.11 | 8.74*** |
| Return on Assets | 0.08 | −0.06 | 21.01*** | 0.10 | 0.07 | 17.07*** |
| Cash Flow Volatility | 0.08 | 0.15 | −16.24*** | 0.04 | 0.07 | −31.32*** |
| Sales Volatility | 0.19 | 0.25 | −11.67*** | 0.12 | 0.16 | −10.36*** |
| Sales Growth (industry-adjusted) | 0.04 | 0.09 | −7.44*** | −0.00 | 0.00 | −2.31** |
| Litigation Risk | 0.10 | 0.17 | −11.05*** | 0.00 | 0.00 | −10.99*** |
| Inventory and Receivables | 0.29 | 0.26 | 5.85*** | 0.27 | 0.22 | 7.94*** |
| Board Size | 7.35 | 6.61 | 16.29*** | 7.00 | 6.00 | 16.90*** |
| Board Independence | 0.45 | 0.55 | −10.98*** | 0.00 | 1.00 | −10.92*** |
| Board Financial Expertise | 0.46 | 0.34 | 13.53*** | 0.00 | 0.00 | 13.42*** |
| Big 4 | 0.58 | 0.44 | 15.84*** | 1.00 | 0.00 | 15.67*** |
| Audit Committee Size | 3.08 | 2.82 | 14.25*** | 3.00 | 3.00 | 14.41*** |
| Audit Committee Independence | 0.81 | 0.71 | 15.06*** | 1.00 | 1.00 | 14.59*** |

## Table 3
## CFO Resistance and Discretionary Accruals

This table presents results from several regressions on the relationship between discretionary accruals and CFO resistance. In Models 1, 2 and 3, we use an ordinary least squares (OLS) regression with standard errors clustered at the firm level. In Model 4, we control for firm fixed effects. The dependent variable is the absolute value of discretionary accruals as defined by Kothari et al. (2005). The *CFO Resistance* measure is the sum of nine dichotomous variables that attempt to capture the ability of the CFO to resist pressure from the CEO, as discussed in Section 3.2.1. Based on its construction, CFO resistance ranges from 0 (minimum resistance) to 9 (maximum resistance). Analytical definitions for all variables are provided in the Appendix A. Standard errors are reported in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

| | Model 1 | Model 2 | Model 3 | Model 4 |
|---|---|---|---|---|
| CFO Resistance | −0.007*** | −0.006*** | −0.005*** | −0.006*** |
| | (0.001) | (0.001) | (0.001) | (0.002) |
| Firm Size | −0.014*** | −0.013*** | −0.011*** | −0.013** |
| | (0.002) | (0.002) | (0.002) | (0.007) |
| Market-to-Book | 0.004** | 0.004** | 0.005** | 0.003 |
| | (0.002) | (0.002) | (0.002) | (0.002) |
| Leverage | 0.013 | 0.013 | 0.010 | 0.003 |
| | (0.019) | (0.019) | (0.019) | (0.023) |
| Return on Assets | −0.116*** | −0.116*** | −0.114*** | −0.115*** |
| | (0.014) | (0.014) | (0.014) | (0.012) |
| Cash Flow Volatility | 0.065*** | 0.064*** | 0.064*** | 0.035 |
| | (0.024) | (0.024) | (0.025) | (0.023) |
| Sales Volatility | 0.054*** | 0.054*** | 0.052*** | 0.037** |
| | (0.015) | (0.015) | (0.015) | (0.019) |
| Sales Growth | 0.011** | 0.011* | 0.011* | 0.011* |
| | (0.005) | (0.006) | (0.006) | (0.006) |
| Litigation Risk | −0.047*** | −0.048*** | −0.047*** | - |
| | (0.007) | (0.007) | (0.007) | - |
| Inventory and Receivables | 0.031* | 0.033* | 0.040** | 0.080** |
| | (0.018) | (0.018) | (0.018) | (0.038) |
| Board Size | - | 0.001 | 0.002 | −0.001 |
| | - | (0.001) | (0.002) | (0.003) |
| Board Independence | - | 0.002 | −0.015** | −0.016* |
| | - | (0.006) | (0.007) | (0.009) |
| Board Financial Expertise | - | −0.015*** | −0.009 | −0.013 |
| | - | (0.005) | (0.006) | (0.009) |
| Big 4 | - | - | −0.010* | −0.016 |
| | - | - | (0.006) | (0.013) |
| Audit Committee Size | - | - | −0.006* | −0.006 |
| | - | - | (0.004) | (0.005) |
| Audit Committee Independence | - | - | −0.039*** | −0.030* |
| | - | - | (0.011) | (0.017) |
| Intercept | 0.473*** | 0.455*** | 0.470*** | 0.348*** |
| | (0.030) | (0.034) | (0.035) | (0.083) |
| Observations | 11,649 | 11,649 | 11,649 | 11,649 |
| $R^2$ | 0.138 | 0.138 | 0.140 | 0.340 |
| Year Dummies | Yes | Yes | Yes | Yes |
| Industry Dummies | Yes | Yes | Yes | No |
| Firm Fixed-Effects | No | No | No | Yes |

## Table 4
### CEO Incentives and the Moderating Role of CFO Resistance

This table presents the results on the moderating role of CFO resistance in the association between CEO incentives and the absolute values of discretionary accruals. The dependent variable is the absolute value of discretionary accruals as defined by Kothari et al. (2005). The *CFO Resistance* measure is the sum of nine dichotomous variables that attempt to capture the ability of the CFO to resist pressure from the CEO, as discussed in Section 3.2.1. Based on its construction, *CFO Resistance* ranges from 0 (minimum resistance) to 9 (maximum resistance). *CEO (CFO) Incentives* is the ratio of the value of common shares and options held by the CEO (CFO) at the end of fiscal year $t$ to the market value of common shares outstanding. *CEO Incentives Ratio* is the ratio of CEO incentives to the sum of CEO incentives and CFO incentives (similar to Feng et al., 2011). The main variables of interest are the interaction of the *CFO Resistance* with the *CEO Incentives* and *CEO Incentives Ratio*. Analytical definitions for all variables are provided in the Appendix A. Standard errors are included in parentheses. ***, **, and * denote statistical significance at the 1%, 5% and 10% levels, respectively.

| | Model 1 | Model 2 | Model 3 | Model 4 |
|---|---|---|---|---|
| CFO Resistance | −0.003 | −0.002 | 0.001 | 0.001 |
| | (0.002) | (0.002) | (0.004) | (0.004) |
| CEO Incentives | 0.315*** | 0.313*** | - | - |
| | (0.063) | (0.063) | - | - |
| CFO Resistance x CEO Incentives | −0.082*** | −0.083*** | - | - |
| | (0.016) | (0.016) | - | - |
| CEO Incentives Ratio | - | - | 0.037* | 0.037** |
| | - | - | (0.019) | (0.019) |
| CFO Resistance x CEO Incentives Ratio | - | - | −0.009** | −0.009** |
| | - | - | (0.004) | (0.004) |
| Firm Size | −0.015** | −0.011* | −0.016*** | −0.013** |
| | (0.006) | (0.007) | (0.006) | (0.007) |
| Market-to-Book | 0.003 | 0.003 | 0.003 | 0.003 |
| | (0.002) | (0.002) | (0.002) | (0.002) |
| Leverage | 0.005 | 0.004 | 0.004 | 0.003 |
| | (0.023) | (0.023) | (0.023) | (0.023) |
| Return on Assets | −0.113*** | −0.114*** | −0.114*** | −0.115*** |
| | (0.012) | (0.012) | (0.012) | (0.012) |
| Cash Flow Volatility | 0.031 | 0.032 | 0.034 | 0.035 |
| | (0.023) | (0.023) | (0.023) | (0.023) |
| Sales Volatility | 0.039** | 0.039** | 0.037** | 0.036* |
| | (0.019) | (0.019) | (0.019) | (0.019) |
| Sales Growth | 0.011* | 0.011* | 0.012** | 0.011* |
| | (0.006) | (0.006) | (0.006) | (0.006) |
| Inventory and Receivables | 0.078** | 0.082** | 0.077** | 0.081** |
| | (0.038) | (0.038) | (0.038) | (0.038) |
| Board Size | - | −0.001 | - | 0.000 |
| | - | (0.003) | - | (0.003) |
| Board Independence | - | −0.016* | - | −0.016* |
| | - | (0.009) | - | (0.009) |
| Board Financial Expertise | - | −0.013 | - | −0.013 |
| | - | (0.009) | - | (0.009) |
| Big 4 | - | −0.016 | - | −0.015 |
| | - | (0.013) | - | (0.013) |
| Audit Committee Size | - | −0.005 | - | −0.006 |
| | - | (0.005) | - | (0.005) |
| Audit Committee Independence | - | −0.032* | - | −0.030* |
| | - | (0.017) | - | (0.017) |
| Intercept | 0.291*** | 0.314*** | 0.296*** | 0.319*** |
| | (0.082) | (0.083) | (0.083) | (0.084) |
| Observations | 11,649 | 11,649 | 11,649 | 11,649 |
| $R^2$ | 0.341 | 0.342 | 0.340 | 0.340 |
| Year Dummies | Yes | Yes | Yes | Yes |
| Firm Fixed-Effects | Yes | Yes | Yes | Yes |

**Table 5**
**CFO Resistance and Audit Quality Channels**

This table presents the regression results on the relationship between CFO resistance and audit quality. Models 1, 2 and 3 are estimated using logistic regressions, while Model 4 is estimated using an ordered logistic regression. The dependent variable in Model 1 is *Audit Committee Independence*, a dummy variable that equals 1 if the proportion of independent non-executive directors on the audit committee is 100% and 0 otherwise; in Model 2 is *Audit Committee Expertise*, a dummy variable that equals 1 if the company has a audit committee with at least three members and at least one financial expert sitting on that committee and 0 otherwise, and in Model 3 is *Big 4*, a dummy variable that equals 1 if the firm's auditor is one of the big four auditors and 0 otherwise. In Model 4, the dependent variable is *Audit Quality Index*, which is the sum of three dichotomous variables i.e., audit committee independence, audit committee expertise and Big 4. The *CFO Resistance* measure is the sum of nine dichotomous variables that attempt to capture the ability of the CFO to resist pressure from the CEO, as discussed in Section 3.2.1. Based on its construction, CFO resistance ranges from 0 (minimum resistance) to 9 (maximum resistance). Analytical definitions for all variables are provided in the Appendix A. Standard errors are provided in parenthesis. ***, **, and * denote statistical significance at the 1%, 5% and 10% levels, respectively.

| | Audit Committee Quality | | Auditor Quality | Overall |
|---|---|---|---|---|
| | *Audit Committee Independence* | *Audit Committee Expertise* | *Big 4* | *Audit Quality Index* |
| | Model 1 | Model 2 | Model 3 | Model 4 |
| CFO Resistance | 0.114*** | 0.142*** | 0.160*** | 0.154*** |
| | (0.014) | (0.021) | (0.010) | (0.009) |
| Firm Size | 0.348*** | 1.021*** | 0.358*** | 0.561*** |
| | (0.027) | (0.037) | (0.017) | (0.015) |
| Market-to-Book | 0.047*** | 0.346*** | 0.039*** | 0.098*** |
| | (0.016) | (0.028) | (0.012) | (0.010) |
| Leverage | −0.498*** | −0.581** | 0.114 | −0.153 |
| | (0.159) | (0.249) | (0.118) | (0.100) |
| Return on Assets | −0.026 | 2.541*** | 0.186** | 0.118* |
| | (0.095) | (0.357) | (0.083) | (0.064) |
| Cash Flow Volatility | 0.146 | −2.239** | −0.082 | 0.093 |
| | (0.118) | (0.903) | (0.129) | (0.093) |
| Sales Volatility | −0.294** | −0.378 | −0.228** | −0.202*** |
| | (0.115) | (0.233) | (0.093) | (0.076) |
| Sales Growth | −0.091 | −0.136* | −0.091** | −0.067* |
| | (0.067) | (0.080) | (0.043) | (0.038) |
| Litigation Risk | −0.110 | 0.102 | 0.144** | 0.147** |
| | (0.105) | (0.131) | (0.068) | 0.061 |
| Inventory and Receivables | 1.332*** | 0.213 | 0.687*** | 0.913*** |
| | (0.189) | (0.243) | (0.122) | (0.107) |
| Board Size | 0.122*** | 0.040* | −0.027** | 0.042*** |
| | (0.021) | (0.021) | (0.012) | (0.011) |
| Board Independence | −3.509*** | −1.089*** | −0.253*** | −1.046*** |
| | (0.154) | (0.100) | (0.047) | (0.043) |
| Board Financial Expertise | 2.982*** | 0.332*** | 0.378*** | 0.701*** |
| | (0.185) | (0.086) | (0.048) | (0.043) |
| Intercept | −1.558*** | −15.612*** | −4.746*** | - |
| | (0.473) | (0.579) | (0.282) | - |
| Observations | 11,649 | 11,649 | 11,649 | 11,649 |
| Pseudo $R^2$ | 0.459 | 0.558 | 0.177 | 0.258 |
| Year Dummies | Yes | Yes | Yes | Yes |
| Industry Dummies | Yes | Yes | Yes | Yes |

**Table 6**
**Instrumental Variable (IV) Approach**

This table presents the results from an IV estimation on the relationship between discretionary accruals and CFO Resistance. We use the number of financial experts (*NOFE*) and *CEO Departures* as our instruments. *NOFE* is defined as the number of financial expert directors sitting on *other* firms' boards where the CFO also serves as a non-executive director. *CEO Departures* is a dummy variable that equals 1 if the CEO leaves the position in year $t$-1 for exogenous reasons (such as death, poor health or natural retirement of CEOs who are 63 years of age or older), conditional on having no changes in the current CFO; and 0 otherwise. The dependent variable in the first-stage is *CFO Resistance* and in the second-stage is the absolute value of discretionary accruals. The results of the first-stage (second-stage) regressions are presented in Models 1 and 3 (Models 2 and 4). The Kleibergen-Paap Wald F-test of weak identification is under null hypothesis that instruments are weak. The Hansen test of over-identification is under the null hypothesis that all instruments are valid. Standard errors are reported in parentheses. ***, ** and * denote statistical significance at the 1%, 5% and 10% levels, respectively.

| | First Stage | Second Stage | First Stage | Second Stage |
|---|---|---|---|---|
| | Model 1 | Model 2 | Model 3 | Model 4 |
| Predicted CFO Resistance | - | −0.009*** | - | −0.007** |
| | - | (0.003) | - | (0.003) |
| Firm Size | −0.082*** | −0.013*** | −0.118*** | −0.011*** |
| | (0.011) | (0.002) | (0.015) | (0.002) |
| Market-to-Book | −0.025** | 0.004** | −0.024** | 0.004** |
| | (0.011) | (0.002) | (0.011) | (0.002) |
| Leverage | 0.052 | 0.013 | 0.111 | 0.009 |
| | (0.107) | (0.017) | (0.109) | (0.018) |
| Return on Assets | 0.145** | −0.115*** | 0.127* | −0.110*** |
| | (0.071) | (0.013) | (0.072) | (0.013) |
| Cash Flow Volatility | −0.463*** | 0.064*** | −0.431*** | 0.074*** |
| | (0.108) | (0.024) | (0.113) | (0.026) |
| Sales Volatility | −0.188** | 0.054*** | −0.144* | 0.049*** |
| | (0.078) | (0.014) | (0.079) | (0.014) |
| Sales Growth | 0.086** | 0.011** | 0.082** | 0.012** |
| | (0.037) | (0.005) | (0.037) | (0.005) |
| Litigation Risk | 0.147*** | −0.047*** | 0.093* | −0.045*** |
| | (0.056) | (0.007) | (0.056) | (0.007) |
| Inventory and Receivables | 0.712*** | 0.034** | 0.526*** | 0.041** |
| | (0.104) | (0.016) | (0.104) | (0.016) |
| Board Size | - | - | −0.070*** | 0.002 |
| | - | - | (0.011) | (0.002) |
| Board Independence | - | - | 0.113** | −0.011 |
| | - | - | (0.049) | (0.007) |
| Board Financial Expertise | - | - | −0.182*** | −0.011* |
| | - | - | (0.042) | (0.005) |
| Big 4 | - | - | 0.407*** | −0.008 |
| | - | - | (0.041) | (0.006) |
| Audit Committee Size | - | - | 0.093*** | −0.004 |
| | - | - | (0.026) | (0.004) |
| Audit Committee Independence | - | - | 0.713*** | −0.033*** |
| | - | - | (0.073) | (0.011) |
| NOFE | 0.596*** | - | 0.567*** | - |
| | (0.015) | - | (0.015) | - |
| CEO Departures | 0.812*** | - | 0.879*** | - |
| | (0.269) | - | (0.263) | - |
| Intercept | 3.368*** | 0.479*** | 3.550*** | 0.455*** |
| | (0.192) | (0.029) | (0.218) | (0.034) |
| Observations | 11,649 | 11,649 | 11,649 | 11,649 |
| $R^2$ | 0.201 | 0.136 | 0.207 | 0.137 |
| Industry/Year Dummies | Yes | Yes | Yes | Yes |
| Kleibergen-Paap rK Wald F-stat | 820.15 | - | 706.08 | - |
| (p-values) | (0.000) | - | (0.000) | - |
| Hansen $J$-Statistic | - | 0.007 | - | 0.019 |
| (p-values) | - | (0.935) | - | (0.890) |

## Table 7
## Propensity Score Matched Sample

This table presents the results from the propensity score matching analysis for treatment (resistant CFOs) and control (non-resistant CFOs) firm-year observations. The treatment (resistant CFO) group includes those firms whose CFO resistance is in above median CFO resistance across all firms in year $t$. The control (non-resistant CFO) group includes those firms whose CFO resistance is in below median CFO resistance across all firms in year $t$. Panel A presents the results from a covariate balance test, which assesses whether the average values of covariates (firm-level determinants) are similar across treatment (resistant CFO) and control (non-resistant CFO) firms. The $t$-statistic and the normalized difference is for the difference in means between resistant and non-resistant CFO firms. The normalized difference is calculated as the difference in means for treatment and match groups *divided* by the square root of the average of the group variances. A normalized difference of 0.25 or less indicates an acceptable balance (Imbens and Wooldridge, 2009). In Panel B, we re-estimate our more general specification (Model 4 of Table 3) on the propensity matched sample. The dependent variable is the absolute value of discretionary accruals as defined by Kothari et al. (2005). The propensity score is estimated as a logit function of firm size, market-to-book, leverage, return-on-assets, cash flow volatility, sales volatility, sales growth, litigation risk, inventory and receivables, board size, board independence, board financial expertise, Big 4, audit committee size and audit committee independence. Analytical definitions for all variables are provided in the Appendix. We match each resistant CFO firm to a non-resistant CFO firm using nearest neighbor without replacement subject to caliper (i.e. maximum difference in propensity score) of 0.01 using *psmatch2*, a STATA function written by Leuven and Sianesi (2003). We did exact matching on industry and year. *psmatch2* allows imposing common support condition by dropping treatment observations whose p-score is higher than the maximum or less than the minimum p-score of the controls. *** and ** denote statistical significance at the 1% and 5% levels, respectively.

**Panel A: Covariate Balance Test**

|  | Resistant CFO Firms | Non-Resistant CFO Firms | t-stat | Normalized Diff. |
|---|---|---|---|---|
| Firm Size | 11.711 | 11.706 | 0.107 | 0.002 |
| Market-to-Book | 1.962 | 1.946 | 0.390 | 0.006 |
| Leverage | 0.177 | 0.176 | 0.433 | 0.006 |
| Return-on-Assets | 0.019 | 0.016 | 0.382 | 0.006 |
| Cash Flow Volatility | 0.103 | 0.103 | -0.015 | -0.000 |
| Sales Volatility | 0.216 | 0.216 | 0.022 | 0.000 |
| Sales Growth | 0.472 | 0.467 | 0.403 | 0.006 |
| Litigation Risk | 0.294 | 0.295 | -0.116 | -0.002 |
| Inventory and Receivables | 0.282 | 0.280 | 0.459 | 0.007 |
| Board Size | 7.063 | 7.065 | -0.036 | -0.001 |
| Board Independence | 0.454 | 0.461 | -0.702 | -0.011 |
| Board Financial Expertise | 0.418 | 0.416 | 0.172 | 0.003 |
| Big 4 | 0.541 | 0.535 | 0.553 | 0.008 |
| Audit Committee Size | 2.995 | 2.985 | 0.473 | 0.007 |
| Audit Committee Independence | 0.780 | 0.780 | 0.018 | 0.000 |

**Panel B: Propensity Matched Sample**

|  | Model 1 |
|---|---|
| CFO Resistance | −0.005** |
|  | (0.002) |
| Observations | 8,908 |
| $R^2$ | 0.371 |
| Firm/Board/Audit Controls | Yes |
| Year Dummies | Yes |
| Firm Fixed-Effects | Yes |

Table 8

## Table 8
## Evidence from Real Earnings Management (REM)

This table presents regression results from real earnings management. We use three aggregated proxies of real earnings management. The dependent variables in Models 1 and 2 is $REM\_1$, Models 3 and 4 is $REM\_2$, and Models 5 and 6 is $REM\_3$. We measure $REM\_1$ by multiplying abnormal discretionary expenses ($RM\_DISX$) by negative one (so that the higher amount, the more likely it is that the firm is cutting discretionary expenses) and add it to abnormal production costs ($RM\_PROD$). Similarly, for $REM\_2$, we first multiply abnormal cash flows from operations ($RM\_CFO$) and abnormal discretionary expenses ($RM\_DISX$) by negative one (so that the higher these amounts the more likely that the firm is engaging in sales manipulations and cutting discretionary expenditures to manage reported earnings upwards) and then aggregate them into one measure (following Cohen and Zarowin, 2006). $REM\_3$, which is defined as the sum of the standardized three real earnings management proxies, i.e., $RM\_CFO$, R$M\_PROD$ and $RM\_DISX$ (following Cohen, Dey and Lys, 2008). $RM\_PROD$ is the level of abnormal production cost, where production costs are defined as the sum of cost of good sold (COGS) and the change in inventories, $RM\_DISX$ is the level of abnormal discretionary expenses, where discretionary expenses are the sum of advertising expenses, R&D expenses and SG&A expenses and $RM\_CFO$ is the level of abnormal cash flows from operations (see Roychowdhury, 2006). Analytical definitions for all variables are provided in the Appendix A. Standard errors are reported in parentheses. ***, **, and * denote statistical significance at the 1%, 5% and 10% levels, respectively.

| | Cohen and Zarowin's (2006) measures | | | | Cohen et al.'s (2008) measure | |
|---|---|---|---|---|---|---|
| | **REM_1** | | **REM_2** | | **REM_3** | |
| | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 |
| CFO Resistance | −0.006** | −0.005* | −0.043** | −0.041** | −0.009*** | −0.009*** |
| | (0.003) | (0.003) | (0.019) | (0.019) | (0.003) | (0.003) |
| Firm Size | −0.014* | −0.012 | −0.172*** | −0.147** | 0.050*** | 0.049*** |
| | (0.009) | (0.009) | (0.058) | (0.061) | (0.010) | (0.011) |
| Market-to-Book | −0.006** | −0.006** | 0.027 | 0.029 | 0.002 | 0.002 |
| | (0.003) | (0.003) | (0.020) | (0.020) | (0.003) | (0.003) |
| Leverage | −0.057* | −0.055* | −0.132 | −0.139 | −0.051 | −0.051 |
| | (0.032) | (0.032) | (0.215) | (0.215) | (0.038) | (0.038) |
| Return on Assets | −0.079*** | −0.080*** | −0.098 | −0.109 | −0.072*** | −0.073*** |
| | (0.017) | (0.017) | (0.114) | (0.114) | (0.020) | (0.020) |
| Cash Flow Volatility | −0.116*** | −0.116*** | 0.682*** | 0.681*** | −0.147*** | −0.149*** |
| | (0.033) | (0.033) | (0.220) | (0.221) | (0.039) | (0.039) |
| Sales Volatility | −0.083*** | −0.084*** | −0.365** | −0.356** | 0.022 | 0.022 |
| | (0.026) | (0.026) | (0.176) | (0.176) | (0.031) | (0.031) |
| Sales Growth | −0.080*** | −0.080*** | −0.109* | −0.113** | 0.038*** | 0.038*** |
| | (0.008) | (0.008) | (0.056) | (0.056) | (0.010) | (0.010) |
| Inventory and Receivables | −0.291*** | −0.287*** | −0.343 | −0.318 | −0.089 | −0.090 |
| | (0.053) | (0.053) | (0.357) | (0.358) | (0.063) | (0.063) |
| Board Size | - | −0.001 | - | −0.011 | - | −0.005 |
| | - | (0.004) | - | (0.026) | - | (0.005) |
| Board Independence | - | 0.006 | - | 0.038 | - | 0.025* |
| | - | (0.012) | - | (0.084) | - | (0.015) |
| Board Financial Expertise | - | 0.014 | - | −0.132 | - | 0.008 |
| | - | (0.013) | - | (0.088) | - | (0.015) |
| Big 4 | - | −0.035* | - | −0.064 | - | 0.008 |
| | - | (0.019) | - | (0.126) | - | (0.022) |
| Audit Committee Size | - | −0.003 | - | −0.005 | - | 0.016** |
| | - | (0.006) | - | (0.043) | - | (0.008) |
| Audit Committee Independence | - | −0.008 | - | −0.115 | - | 0.018 |
| | - | (0.024) | - | (0.159) | - | (0.028) |
| Intercept | 0.421*** | 0.425*** | 2.454*** | 2.406*** | −0.609*** | −0.650*** |
| | (0.115) | (0.117) | (0.774) | (0.785) | (0.136) | (0.138) |
| Observations | 11,649 | 11,649 | 11,649 | 11,649 | 11,649 | 11,649 |
| $R^2$ | 0.565 | 0.565 | 0.161 | 0.161 | 0.353 | 0.353 |
| Year/Firm Fixed-Effects | Yes | Yes | Yes | Yes | Yes | Yes |

# Internet Appendix:
# Can CFOs Resist Undue Pressure from CEOs to Manage Earnings?

**Abstract**

In this Internet Appendix, we offer supplementary results for our paper "Can CFOs Resist Undue Pressure from CEOs to Manage Earnings?" More specifically, we test our main hypothesis by constructing an alternative index of CFO resistance using principal component analysis. Additionally, we check the robustness of our findings by controlling for CFO and CEO fixed effects, CFO equity incentives, using an instrumental variable GMM approach, exploiting a sample of firms experiencing CFO turnovers, as well as alternative measures of detecting earnings management.

## IA.1 Alternative Measure of CFO Resistance

In this section, we assess the robustness of our results after replacing our benchmark CFO resistance with an alternative measure of CFO resistance that we construct using principal component analysis (PCA). This approach has also been used in recent studies for variables reduction purposes (see e.g., Ellul and Yerramilli, 2013).

Panel A of Table IA.1 presents the results from the PCA, which yields one component with an eigenvalue greater than one.[1] This first (second) component captures 42.23% (11.14%) of the total variance in our data and has an eigenvalue of 3.80 (1.00). The component loadings for the first component are also reported in this panel. As expected, all nine variables used positively contribute to the CFO resistance. Thus, the higher level of CFO resistance is reflected in a higher value of the first component.

In Panel B of Table IA.1, we re-estimate our more general specifications (Model 4 of Table 3) after replacing our CFO resistance with an alternative measure, CFO resistance ($1^{st}$ Component). The results, as presented in Model 1, verify a negative association between CFO resistance and earnings management. In Model 2 of Panel B, we also test whether the $2^{nd}$ component is associated with earnings management. The results indicate that only the $1^{st}$ component, and not the $2^{nd}$ component, is significantly associated with earnings management.

## IA.2 Controlling for CEO and CFO Fixed Effects

In this section, we re-estimate our more general specifications (Model 3 of Table 3 of the paper) with CEO and CFO fixed effects, which control for managerial-specific unobserved time-invariant characteristics that might affect the relationship between *CFO Resistance* and discretionary accruals. The results, as presented in Table IA.2, continue to show a negative and statistically significant association between *CFO Resistance* and discretionary accruals. This further eliminates the concern that personal style of CEOs and CFOs could be driving our results.

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[1] An eigenvalue greater than one indicates that the extracted component can explain more variance, i.e., it has more explanatory power than any one of the original variables by itself.

## IA.3 Controlling for CFO Equity Incentives

In this section, we test whether CFO equity incentives affects the association between the CFO resistance and earnings management. We therefore re-estimate our baseline specification (Table 3) and include CFO equity incentives, and an interaction variable to interact CFO resistance with CFO equity incentives as our main variable of interest. Following Cheng and Warfield (2005), we use the ratio of the value of common shares and options held by the CFO at the end of fiscal year $t$ to the market value of common shares outstanding, as our proxy for CFO equity incentives. As can be seen in Table IA.3, we do not find any evidence that may suggest CFO equity incentives matters in the relationship between CFO resistance and earnings management.

## IA.4 Controlling for CFO Compensation Incentives

In this section, we test whether CFO incentives through equity-based compensation affects the association between the CFO resistance and earnings management. In Models 1 and 2, we re-estimate our baseline specification (Table 3) and include *CFO LTIP compensation*, and an interaction variable to interact *CFO Resistance* with *CFO LTIP Compensation* as our main variable of interest. *CFO LTIP Compensation* is defined as the ratio of the payout from long-term incentive plans awarded to the CFO at the end of fiscal year $t$ to the CFO's total compensation. In Models 2 and 3, we repeat our analysis after replacing CFO LTIP Compensation with CFO Equity Compensation, which is the ratio of the CFO's equity-based compensation to the CFO's total compensation. As can be seen in Table IA.4, we do not find any evidence suggesting that CFO compensation incentives significantly change the relationship between CFO resistance and absolute discretionary accruals.

## IA.5 An Instrumental Variable GMM Approach

In this section, we re-estimate our two-stage least squares instrumental variable (IV) specification (see Table 6 of the main body of the paper) using two-step efficient GMM estimator (Baum et al., 2003). In addition to number of financial experts (NOFE) and CEO departures (as analytically discussed in Section 6.1), we include three lags of CFO resistance as addi-

tional instruments. The results as presented in Table IA.5, show that the coefficient on the predicted CFO resistance continues to remain negative and statistically significant at conventional levels (Model 2 and Model 4 of Table IA.5). The weak identification (Kleinbergen-Paap rank) Wald $F$-test suggests that all instruments are relevant and powerful, and the Hansen $J$-test further supports their validity.

## IA.6 Evidence from CFO Turnovers: A Difference-in-Difference Analysis

A potential setting to isolate the effect of CFOs on earnings management in firms with powerful CEOs is to focus on firms that experience a CFO turnover from a non-resistant to a resistant CFO and observe the corresponding change in discretionary accruals. Ideally, we would observe turnovers that occur for purely exogenous reasons (e.g., the sudden death of a CFO). Understandably, we could only identify a very small number of purely exogenous CFO turnovers in our sample. Therefore, we analyze a sub-sample of firms where CFO turnovers are likely to be exogenous, but we cannot ignore the fact that some of them may not be. We start our analysis by identifying all firms that experienced a turnover from a non-resistant to a resistant CFO. We exclude from our sample turnovers that are likely to have occurred for endogenous reasons (e.g., forced turnovers). To identify forced turnovers, we conduct Bloomberg news searches over a three-year period around CFO turnovers, examining all the articles and press releases that allows us to determine the reason for each CFO turnover. We assign a CFO turnover to a forced category if the article suggests that the CFO was "fired" by the board or had "resigned" after the firm reported the annual loss. As firms' press releases on CFO changes are often less informative, we create an alternative category called "suspected forced" CFO turnovers. We assign turnover events in this category if (i) a firm's industry-adjusted accounting performance as measured by return on assets (ROA) falls into the lowest tercile in the pre-turnover year, or (ii) a firm facing severe financial constraints as measured by industry-adjusted total debt (and interest coverage ratio) falls into the top (bottom) tercile in the pre-turnover year, or (iii) a firm's stock market performance as measured by excess returns falls into the lowest tercile in the pre-turnover year, or (iv) a firm has a high level of agency costs as measured by asset turnover (i.e., asset turnover falls into the lowest

tercile of the sample distribution in the pre-turnover year), or (v) if the turnover occurs during a crisis period.[2,3]

After excluding potentially endogenous turnovers, we end up with a sample of likely exogenous turnovers, which have occurred voluntarily for the following reasons: (i) to pursue other career opportunities, (ii) early retirement, i.e., before the age of 60, (iii) resigned to join a new firm, or (iv) appointed as a CEO at another firm (see e.g., Fee et al., 2013; Dittmar and Duchin, 2015). We expect a decline in the level of discretionary accruals when a non-resistant CFO is replaced by a resistant CFO in firms where CEOs have more power. To isolate confounding effects on discretionary accruals, we compare turnover firms (treatment group) with no-turnover firms (control group) that are similar in terms of a series of observable characteristics such as firm size, market-to-book, leverage, return on assets, cash flow volatility, sales volatility, sales growth, inventory and receivables, board size, board independence, board financial expertise, big 4, audit committee size, audit committee independence.

Table IA.6 presents the results for the case when firms experience turnover from a non-resistant to a resistant CFO. In the pre-turnover period, we find no significant difference in discretionary between the treatment and control firms when run by non-resistant CFOs, suggesting they manage earnings at similar levels. To the contrary, the results indicate that in the post-turnover period, the discretionary accruals of treatment firms were significantly lower (by 4.30 percentage points) than those in the comparison sample of control firms. The difference between the two groups is statistically significant at the 1% level. Most importantly, we find that the decline in average discretionary from pre- to post-CFO turnover was 5.10 percentage points, which is over and beyond what was observed during the same period among otherwise similar firms with no CFO turnovers. This difference is also statistically significant at the 5% level. These results suggest that the turnover from a non-resistant CFO to a resistant CFO is associated with a significant decline in discretionary accruals.

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[2]The boards are more likely to change their managers in periods of crises (Fee et al., 2013) deliberately.

[3]Mian (2001) and Geiger and North (2006) document that CFO turnovers are often punitive in nature, which are most commonly preceded by poor stock price performance or poor operating performance.

## IA.7 Meeting or Just Beating Analyst's Forecast

In this section, we examine whether CFO resistance also affects a firm's likelihood of meeting or just beating analysts forecast given the evidence in Graham et al. (2005) that meeting or just beating analysts' forecast is one the most important reasons why firms manage earnings. Consistent with prior studies (Bartov and Cohen, 2009; Doyle et al., 2013), we define JUST_MEET_BEAT as an indicator that identifies if a firm's meet or just beat analysts' earnings per share expectation by one penny and 0 otherwise. Our results, as presented in Table IA.7 show that firms with resistant CFOs have lower likelihood of meeting or just beating analysts' expectations.

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## Table IA.1
## Alternative Measure of CFO Resistance
### *(Principal Component Analysis)*

This table presents results from alternative measure of CFO resistance constructed using principal component analysis. Panel A presents the results from a principal component analysis (PCA) based on the following CFO resistance components: CFO inside director, CFO salary rank, CEO/CEO compensation, CFO/CEO tenure, CFO social ties, CFO/CEO outside board, CFO elite status, CFO-CEO career horizon, CFO professional qualification. CFO resistance is the $1^{st}$ principal component obtained from the PCA. The component loadings of the $1^{st}$ component is presented, while eigenvalue and the proportion of variance explained by $1^{st}$ and $2^{nd}$ component is presented. Panel B presents regression results on the relationship between discretionary accruals and the two components obtained from principal component analysis, i.e., CFO resistance ($1^{st}$ Comp.) and $2^{nd}$ Component. The dependent variable is the absolute value of discretionary accruals as defined by Kothari et al. (2005). For ease of exposition, we do not report the results on control variables. Standard errors (clustered) are reported in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

**Panel A: Principal Component Analysis (PCA)**

| $1^{st}$ Component | Components | Component loadings |
|---|---|---|
| CFO Resistance | CFO Inside Director | 0.47 |
| | CFO Salary Rank | 0.43 |
| | CFO/CEO Compensation | 0.42 |
| | CFO/CEO Tenure | 0.32 |
| | CFO Social Ties | 0.03 |
| | CFO/CEO Outside Board | 0.34 |
| | CFO Elite Status | 0.07 |
| | CFO-CEO Career Horizon | 0.26 |
| | CFO Professional Qualification | 0.32 |

| | *CFO Resistance ($1^{st}$ Comp.)* | *$2^{nd}$ Component* |
|---|---|---|
| Eigenvalue | 3.80 | 1.00 |
| Proportion Explained | 42.23 % | 11.14 % |

**Panel B: Regression Results**

| | Model 1 | Model 2 |
|---|---|---|
| CFO Resistance ($1^{st}$ Comp.) | −0.008*** | −0.008*** |
| | (0.002) | (0.003) |
| $2^{nd}$ Component | - | 0.019 |
| | - | (0.023) |
| Observations | 11,649 | 11,649 |
| R-squared | 0.339 | 0.339 |
| Firm-level controls | Yes | Yes |
| Board-level Controls | Yes | Yes |
| Audit-level Controls | Yes | Yes |
| Year Dummies | Yes | Yes |
| Firm Fixed-Effects | Yes | Yes |

**Table IA.2**
**Controlling for CEO and CFO Fixed Effects**

This table presents results on the relationship between discretionary accruals and CFO resistance after controlling for managerial fixed effects. In Model 1, we control for CEO fixed effects while Model 2 controls for CFO fixed effects. The dependent variable is the absolute value of discretionary accruals as defined by Kothari et al. (2005). The *CFO Resistance* measure is the sum of nine dichotomous variables that attempt to capture the ability of the CFO to resist pressure from the CEO, as discussed in Section 3.2.1 of the paper. Based on its construction, CFO resistance ranges from 0 (minimum resistance) to 9 (maximum resistance). Analytical definitions for all variables are provided in the Appendix A of the paper. Standard errors are reported in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

|  | Model 1 | Model 2 |
|---|---|---|
| CFO Resistance | −0.007*** | −0.010*** |
|  | (0.002) | (0.002) |
| Firm Size | −0.011 | −0.017** |
|  | (0.007) | (0.007) |
| Market-to-Book | 0.003 | 0.002 |
|  | (0.002) | (0.002) |
| Leverage | −0.022 | 0.013 |
|  | (0.027) | (0.026) |
| Return on Assets | −0.085*** | −0.096*** |
|  | (0.014) | (0.014) |
| Cash Flow Volatility | 0.039 | 0.010 |
|  | (0.032) | (0.028) |
| Sales Volatility | 0.063*** | 0.079*** |
|  | (0.022) | (0.021) |
| Sales Growth | 0.013** | 0.015** |
|  | (0.006) | (0.006) |
| Litigation Risk | −0.037 | −0.077*** |
|  | (0.048) | (0.025) |
| Inventory and Receivables | 0.110*** | 0.028 |
|  | (0.043) | (0.037) |
| Board Size | 0.002 | 0.000 |
|  | (0.003) | (0.003) |
| Board Independence | −0.016 | −0.017* |
|  | (0.010) | (0.010) |
| Board Financial Expertise | −0.015 | −0.013 |
|  | (0.011) | (0.010) |
| Big 4 | −0.011 | −0.003 |
|  | (0.015) | (0.014) |
| Audit Committee Size | −0.009 | −0.002 |
|  | (0.006) | (0.006) |
| Audit Committee Independence | −0.053** | −0.036* |
|  | (0.022) | (0.020) |
| Intercept | 0.314*** | 0.424*** |
|  | (0.092) | (0.088) |
| Observations | 11,649 | 11,649 |
| $R^2$ | 0.457 | 0.436 |
| Year Dummies | Yes | Yes |
| CEO Fixed Effects | Yes | No |
| CFO Fixed Effects | No | Yes |

## Table IA.3
## The Role of CFO Equity Incentives

This table examines whether CFO equity incentives affects the relationship between CFO resistance and earnings management. The dependent variable is the absolute value of discretionary accruals as defined by Kothari et al. (2005). The CFO resistance measure is the sum of nine dichotomous variables that attempt to capture the ability of the CFO to resist pressure from the CEO, as discussed in Section 3.2.1 of the paper. Based on its construction, CFO resistance ranges from 0 (the lowest CFO resistance) to 9 (the highest CFO resistance). CFO incentives is the ratio of the value of common shares and options held by the CFO at the end of fiscal year t to the market value of common shares outstanding. The main variable of interest is the interaction of the CFO resistance with the CFO incentives. Analytical definitions for all variables are provided in the Appendix A of the paper. Standard errors are included in parentheses. ***, **, and * denote statistical significance at the 1%, 5% and 10% levels, respectively.

|  | Model 1 | Model 2 |
|---|---|---|
| CFO Resistance | −0.006*** | −0.006*** |
|  | (0.002) | (0.002) |
| CFO Incentives | −1.084 | −1.393 |
|  | (0.829) | (0.856) |
| CFO Resistance x CFO Incentives | 0.122 | 0.213 |
|  | (0.172) | (0.177) |
| Firm Size | −0.017*** | −0.007 |
|  | (0.006) | (0.007) |
| Market-to-Book | 0.002 | 0.002 |
|  | (0.002) | (0.002) |
| Leverage | 0.002 | −0.007 |
|  | (0.023) | (0.023) |
| Return on Assets | −0.112*** | −0.109*** |
|  | (0.012) | (0.012) |
| Cash Flow Volatility | 0.035 | 0.050* |
|  | (0.023) | (0.025) |
| Sales Volatility | 0.036* | 0.046** |
|  | (0.019) | (0.019) |
| Sales Growth | 0.012** | 0.012** |
|  | (0.006) | (0.006) |
| Inventory and Receivables | 0.075** | 0.082** |
|  | (0.038) | (0.038) |
| Board Size | - | −0.001 |
|  | - | (0.003) |
| Board Independence | - | −0.011 |
|  | - | (0.009) |
| Board Financial Expertise | - | −0.015 |
|  | - | (0.009) |
| Big 4 | - | −0.015 |
|  | - | (0.013) |
| Audit Committee Size | - | −0.004 |
|  | - | (0.005) |
| Audit Committee Independence | - | −0.024 |
|  | - | (0.018) |
| Intercept | 0.338*** | 0.262*** |
|  | (0.082) | (0.085) |
| Observations | 11,649 | 11,649 |
| R-squared | 0.339 | 0.339 |
| Year Dummies | Yes | Yes |
| Firm Fixed-Effects | Yes | Yes |

## Table IA.4
### The Role of CFO Compensation Structure

This table examines whether CFO equity-linked awards affect the relationship between CFO resistance and earnings management. The dependent variable is the absolute value of discretionary accruals as defined by Kothari et al. (2005). The CFO resistance measure is the sum of nine dichotomous variables that attempt to capture the ability of the CFO to resist pressure from the CEO, as discussed in Section 3.2.1 of the paper. Based on its construction, CFO resistance ranges from 0 (the lowest CFO resistance) to 9 (the highest CFO resistance). CFO LTIP Compensation is the ratio of the payout from long-term incentive plans <u>awarded</u> to the CFO at the end of fiscal year $t$ to the CFO's total compensation. CFO Equity Compensation is the ratio of the CFO's equity-based compensation to the CFO's total compensation. The main variable of interest is the interaction of the CFO resistance with the CFO incentives. Analytical definitions for all variables are provided in the Appendix A of the paper. Standard errors are included in parentheses. ***, **, and * denote statistical significance at the 1%, 5% and 10% levels, respectively.

|  | Model 1 | Model 2 | Model 3 | Model 4 |
|---|---|---|---|---|
| CFO Resistance | −0.008*** | −0.007** | −0.008** | −0.007** |
|  | (0.003) | (0.003) | (0.003) | (0.003) |
| CFO LTIP Compensation | −0.063 | −0.049 | - | - |
|  | (0.040) | (0.041) | - | - |
| CFO Resistance x CFO LTIP Compensation | 0.016* | 0.013 | - | - |
|  | (0.009) | (0.009) | - | - |
| CFO Equity Compensation | - | - | −0.049 | −0.043 |
|  | - | - | (0.039) | (0.041) |
| CFO Resistance x CFO Equity Compensation | - | - | 0.011 | 0.010 |
|  | - | - | (0.008) | (0.009) |
| Intercept | 0.335*** | 0.261** | 0.332*** | 0.260** |
|  | (0.120) | (0.119) | (0.121) | (0.119) |
| Observations | 11,649 | 11,649 | 11,649 | 11,649 |
| $R^2$ | 0.340 | 0.339 | 0.339 | 0.339 |
| Firm-level Controls | Yes | Yes | Yes | Yes |
| Board-level Controls | No | Yes | No | Yes |
| Audit-level Controls | No | Yes | No | Yes |
| Year Dummies | Yes | Yes | Yes | Yes |
| Firm Fixed-Effects | Yes | Yes | Yes | Yes |

## Table IA.5
## IV-GMM Approach

This table presents the results from a two-step IV-GMM estimation. We use three lags of the CFO resistance, number of financial experts (NOFE) and CEO Departure, as our potential instruments. NOFE is defined as the number of financial expert directors (i.e. Chartered Accountants, CFOs, and CEOs with past CFO experience) sitting on *other* firms' boards where the CFO also serves as a non-executive director. CEO Departure$_{t-1}$ is a dummy variable that equals 1 if the CEO leaves the position in year $t$-1 for exogenous reasons (such as death, poor health or natural retirement of CEOs who are 63 years of age or older), conditional on having no changes in the current CFO; and 0 otherwise. In Models 1 and 3 (Models 2 and 4), we report the results from the first-stage (second-stage) regressions. The dependent variable in the first stage regression is CFO resistance, which is sum of nine dichotomous variables that attempt to capture the ability of the CFO to resist pressure from the CEO, as discussed in Section 3.2.1 of the paper. Based on its construction, CFO resistance ranges from 0 (the lowest CFO resistance) to 9 (the highest CFO resistance). The dependent variable in the second-stage regression is the absolute value of discretionary accruals as defined by Kothari et al. (2005). The Kleibergen-Paap Wald F-test of weak identification is under null hypothesis that instruments are weak. The Hansen test of over-identification is under the null hypothesis that all instruments are valid. Standard errors are reported in parentheses. Analytical definitions for all variables are provided in the Appendix A of the paper. ***, ** and * denote statistical significance at the 1%, 5% and 10% levels, respectively.

| | First Stage Model 1 | Second Stage Model 2 | First Stage Model 3 | Second Stage Model 4 |
|---|---|---|---|---|
| Predicted CFO Resistance | - | $-0.010^{***}$ | - | $-0.009^{***}$ |
| | - | (0.003) | - | (0.003) |
| NOFE | $0.236^{***}$ | - | $0.238^{***}$ | - |
| | (0.016) | - | (0.017) | - |
| CEO Departure$_{t-1}$ | $0.956^{*}$ | - | $1.046^{**}$ | - |
| | (0.503) | - | (0.536) | - |
| CFO Resistance$_{t-2}$ | $0.444^{***}$ | - | $0.431^{***}$ | - |
| | 0.021 | - | (0.021) | - |
| CFO Resistance$_{t-3}$ | $0.090^{***}$ | - | $0.091^{***}$ | - |
| | 0.023 | - | (0.023) | - |
| CFO Resistance$_{t-4}$ | $0.102^{***}$ | - | $0.098^{***}$ | - |
| | 0.020 | - | (0.020) | - |
| Observations | 5,225 | 5,225 | 5,225 | 5,225 |
| $R^2$ | 0.201 | 0.157 | 0.207 | 0.152 |
| Firm-level Controls | Yes | Yes | Yes | Yes |
| Board-level Controls | No | No | Yes | Yes |
| Audit-level Controls | No | No | Yes | Yes |
| Industry/Year Dummies | Yes | Yes | Yes | Yes |
| Kleinbergen-Paap rK Wald F-stat | 856.50 | - | 687.46 | - |
| (p-values) | (0.000) | - | (0.000) | - |
| (Critical Values: 10%/15%) | (19.93/11.59) | - | (10.83/6.77) | - |
| Hansen $J$-Statistic | - | 4.349 | - | 5.074 |
| (p-values) | - | (0.360) | - | (0.279) |

## Table IA.6
## Evidence From CFO Turnovers
*(Difference-in-Difference Analysis)*

This table presents mean differences in absolute discretionary accruals between treatment firms (i.e., experiencing a turnover from a non-resistant to a resistant CFO) and control firms (i.e., those that are always run by non-resistant CFOs). Resistant CFO firms are those firms whose CFO resistance value is greater than the median CFO resistance across all firms in year $t$. Non-resistant CFO firms are those whose CFO resistance value is lower than the median CFO resistance across all firms in year $t$. The CFO resistance measure is the sum of nine dichotomous variables that attempt to capture the ability of the CFO to resist pressure from the CEO, as discussed in Section 3.2.1 of the paper. Based on its construction, CFO resistance ranges from 0 (the lowest CFO resistance) to 9 (the highest CFO resistance). The absolute value of discretionary accruals (denoted as Absolute DA) as defined by Kothari et al. (2005). We identify control firms by employing a propensity score matching procedure. The propensity score (unreported) is estimated as a logit function of firm size, market-to-book, leverage, return-on-assets, cash flow volatility, sales volatility, sales growth, litigation risk, inventory and receivables, board size, board independence, board financial expertise, Big 4, audit committee size and audit committee independence. Analytical definitions for all variables are provided in the Appendix A of the paper. We match each treatment group to a control group using nearest neighbor without replacement subject to the caliper (i.e., the maximum difference in propensity score) of 0.01 using psmatch2, a STATA function written by Leuven and Sianesi (2003). We did exact matching on industry and year. psmatch2 allows imposing common support condition by dropping treatment observations whose p-score is higher than the maximum or less than the minimum p-score of the controls. *** and ** denote statistical significance at the 1% and 5% levels, respectively.

**CFO Turnover Sample** (Obs.= 606)

|  | Mean Absolute DA | Difference | Robust s.e. |
|---|---|---|---|
| *Pre-Turnover Discretionary Accruals* | | | |
| Treatment Firms (non-resistant CFOs) | 13.2% | | |
| Control Firms (non-resistant CFOs) | 12.4% | 0.80% | 0.17 |
| | | | |
| *Post-Turnover Discretionary Accruals* | | | |
| Treatment Firms (resistant CFOs) | 8.0% | | |
| Control Firms (non-resistant CFOs) | 12.3% | -4.30%*** | 0.015 |
| Diff.-in-Diff. (Post minus Pre-turnover) | | -5.10%** | 0.023 |

## Table IA.7
## Evidence from Meeting or Just Beating Analysts' Forecast

This table presents results from logistic regressions on the relationship between CFO resistance and analysts' consensus forecast. The dependent variable in Models 1 and 2 is JUST_MEET_BEAT, which is a dummy variable that equals to 1 if a firm's meet or just beat analysts' consensus forecast by one-half pence, and 0 otherwise. The CFO resistance measure is the sum of nine dichotomous variables, as discussed in Section 3.2.1 of the paper. Based on its construction, CFO resistance ranges from 0 (the lowest CFO resistance) to 9 (the highest CFO resistance). Analytical definitions for all variables are provided in the Appendix A of the paper. Standard errors are reported in parentheses. ***, **, and * denote statistical significance at the 1%, 5% and 10% levels, respectively.

|  | Model 1 | Model 2 |
|---|---|---|
| CFO Resistance | −0.028** | −0.034** |
|  | (0.013) | (0.013) |
| Firm Size | 0.007 | −0.040* |
|  | (0.015) | (0.022) |
| Market-to-Book | 0.001 | −0.007 |
|  | (0.016) | (0.016) |
| Leverage | −0.221 | −0.215 |
|  | (0.161) | (0.161) |
| Return on Assets | 0.430*** | 0.443*** |
|  | (0.127) | (0.127) |
| Cash Flow Volatility | −0.198 | −0.188 |
|  | (0.188) | (0.189) |
| Sales Volatility | −0.015 | −0.014 |
|  | (0.116) | (0.116) |
| Sales Growth | 0.091* | 0.102* |
|  | (0.052) | (0.052) |
| Litigation Risk | −0.013 | −0.010 |
|  | (0.084) | (0.084) |
| Inventory and Receivables | −0.414*** | −0.446*** |
|  | (0.158) | (0.159) |
| Board Size | - | 0.019 |
|  | - | (0.016) |
| Board Independence | - | −0.148** |
|  | - | (0.069) |
| Board Financial Expertise | - | 0.066 |
|  | - | (0.059) |
| Big 4 | - | 0.055 |
|  | - | (0.059) |
| Audit Committee Size | - | 0.007 |
|  | - | (0.034) |
| Audit Committee Independence | - | 0.020 |
|  | - | (0.101) |
| Intercept | −0.393 | 0.061 |
|  | (0.286) | (0.323) |
| Observations | 8,747 | 8,747 |
| R-squared | 0.033 | 0.039 |
| Year Dummies | Yes | Yes |
| Industry Dummies | Yes | Yes |