

Chief Financial Officers, Resistance to Pressure and Earnings Management

Abstract

This paper examines the role of Chief Financial Officers (CFOs) in preventing aggressive earnings management, which is often observed in firms that allow too much power in the hands of their Chief Executive Officer (CEO). We develop a measure of CFO resistance, which captures the ability and willingness of the CFO to *withstand* undue pressures from powerful CEOs to engage in earnings management. We find that firms with resistant CFOs are less likely to engage in earnings management than firms with non-resistant CFOs, *ceteris paribus*. Furthermore, we find that CFO resistance moderates the relation between CEO power and earnings management. In particular, our results show that powerful CEOs are more likely to engage in earnings management, but such an effect is significantly less pronounced in the presence of resistant CFOs. Our findings also provide suggestive evidence that resistant CFOs play an important monitoring role in the financial reporting process, especially in firms where powerful CEOs are also perceived to have self-serving motives.

JEL classification: M40, M41, M52

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1 Introduction

Chief Financial Officers (CFOs) are widely viewed as “watchdogs” of financial reporting integrity and together with the board of directors, the CEO, the audit committee and the auditor, play a critical role in the financial reporting process (Mian, 2001; Aier et al., 2005; Geiger and North, 2006; Ge et al., 2011). Despite the various checks and balances that firms put in place to prevent it, CFOs often engage in earnings management behavior. A growing body of research shows that CFOs often become susceptible to internal *pressures*, which results in actions that compromise the quality of financial reporting. For example, based on a survey of 169 public company CFOs, 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.¹

Prior empirical evidence suggests that the pressure from a powerful CEO is the key driver in a CFO’s misreporting decisions (see Fink 2002). According to Adams and Ferreira (2007), powerful CEOs can consistently exert their will and influence key decisions in their firms, even when such decisions are opposed by other senior executives, such as the CFO. A recent strand of literature examines the effects of a CEO’s power on a CFO’s misreporting decisions. More specifically, Feng et al. (2011) argue that being CFOs’ superiors, CEOs have a direct influence on CFOs’ career and compensation decisions, which allows them to exert pressure on the CFO to manipulate earnings for their benefits. The study concludes that CFO involvement in accounting manipulations is more likely to be due to the pressure from powerful CEOs. Leone and Liu (2010) also show that CFOs are more likely to be fired (as the designated “scapegoat”) after accounting irregularities occur in firms where CEOs are more powerful. More recently, Bishop et al. (2017) find that pressure from the CEO significantly affects CFOs’ accounting choices.

In this study, we conjecture that while most CFOs are constantly subjected to these pressures, not all CFOs will necessarily succumb to them. Infact, some may resist to CEO

¹A 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).

pressure and refuse to manipulate earnings. We introduce the concept of “CFO resistance” and develop a measure that attempts to capture the ability and willingness to *withstand* undue pressures to misrepresent earnings. To do so, we draw upon the literature on the association between managerial characteristics and firm outcomes, and in particular, on studies that aim to conceptualize the capacity of an individual to be *uninfluenced* by others. We construct our measure by combining three important sources of CFO resistance which, as analytically discussed in Section 3, directly relate to the capacity of the CFO to resist pressure over financial reporting decisions. These are power (see, e.g., [French and Raven, 1959](#); [Galinsky et al., 2008](#); [Finkelstein, 1992](#); [Wiersema and Bantel, 1992](#); [Harris and Helfat, 1997](#); [Golden and Zajac, 2001](#); [Adams and Ferreira, 2007](#)), external reputation ([Fama, 1980](#); [Fama and Jensen, 1983](#); [Masulis and Mobbs, 2011](#)) and professional commitment ([Goldman and Barlev, 1974](#); [Raelin, 1985](#); [Lord and DeZoort, 2001](#)). Our measure enables us to distinguish CFOs who are more likely to resist from those who are more sensitive to CEO pressure.

We examine the role of CFO resistance using a large sample of UK firms over the period 1999 to 2015. The UK provides an unique environment to explore how CFOs’ matter for firms’ financial reporting quality for number of reasons. The first motivation behind examining a UK sample is the recent increase in high-profile accounting scandals in the UK, which is receiving a considerable media and public attention and re-triggering a call for corporate governance reforms.² The second is the accounting environment in the UK, which is characterized as less regulated and litigious than in the US (see [Ball et al., 2000](#); [Ahmed and Duellman, 2007](#)), thus providing managers greater flexibility and lower risk related to earnings management. Furthermore, CFOs in the UK, also commonly referred to as finance directors, are perceived to play a more important strategic role as illustrated by the fact that they sit on the board of directors in the vast majority of firms (above 73% in our sample).

²For instance, a recent article in [The Financial Times](#) (October, 2014), states that “Six days before the scandal broke, the accounting watchdog published the latest version of the UK corporate governance code the document devised in the early 1990s to prevent such upsets. It relies on self-regulation rather than public accountability; London-listed companies must either comply with its requirements or explain why they have not. But complying with the mantra of leadership it expounds would probably neither inhibit nor reveal the subterfuge required to conceal a 250m black hole.”

This particularly high percentage is in contrast to the US experience, where only about 11% of CFOs hold board positions.^{3,4}

Our study reports several important findings. We firstly demonstrate a significant negative association between our CFO resistance and discretionary accruals, which indicates that firms with resistant CFOs (i.e., high values on CFO resistance) are less likely to engage in earnings management. We also perform various tests to rule out several alternative interpretations of our findings. First, we address concerns that omitted variables bias and/or unobserved time-invariant heterogeneity explain our results. In additional tests, we control for firm-, board-, audit- and CEO-level characteristics, and various types of fixed effects in the models (such as firm, CEO and CFO). Our results remain robust to the inclusion of these controls.

We then deal with potential reverse causality issues due to matching. For e.g., the board of directors of firms with poor earnings quality may appoint CFOs with particular attributes (e.g., superior skills or higher reputation) to improve their standards of financial reporting quality. If not properly controlled for, the differences in earnings quality between resistant CFO (i.e., high values of CFO resistance) and non-resistant CFO firms may be incorrectly attributed to CFO effects rather than the difference in firm characteristics. We address this possibility in two different ways. First, we exploit a sample of firms experiencing most likely exogenous turnovers *from* non-resistant to resistant CFOs. We find that such turnovers are associated with significant changes in the levels of discretionary accruals. In particular, turnovers from non-resistant to resistant CFOs are associated with a significant decline in discretionary accruals. We next adopt an instrumental variable (IV) approach using two instruments for CFO resistance: (i) the number of financial experts sitting on *other* firms' boards where the CFO also serves as a director (termed as "NOFE") and (ii) a dummy

³For example, a recent study by [Mobbs \(2018\)](#) reports that only about 11% of CFOs in US firms held a board position over the period 1997-2014.

⁴The CFO presence on boards is not entirely surprising in the UK given that the UK Corporate Governance Code encourages an appropriate balance of executive and non-executive directors on the board. For example, Principle B.1 of the [Financial Reporting Council \(2016\)](#) report states that "The board should include an appropriate combination of executive and non-executive directors (and, in particular, independent non-executive directors) such that no individual or small group of individuals can dominate the boards decision taking." Whereas, the corporate governance and major reforms in the US promote board independence as a practice that enhances board effectiveness (e.g., Sarbanes-Oxley Act of 2002). A recent article published in the *Wall Street Journal* makes a similar point (see "[A Waste of a Board Seat](#)" (Published on: October 15, 2012)).

variable indicating whether the CFO has a work experience with a firm during a financial distress situation (i.e., when a firm filed for bankruptcy). The results confirm our main findings.

We then document that in addition to the direct effect, CFO resistance also has a moderating effect (indirect) on the relationship between CEO power and earnings management. Our findings demonstrate that CFO resistance act as an important mechanism that limits the ability of CEOs with greater power and/or incentives to engage in earnings management. More specifically, we find that CEO power is positively associated with earnings management. However, we also find that this relationship is significantly *less* pronounced for the case of firms with high CFO resistance. These findings suggest that while firms with powerful CEOs seem to be more likely to engage in earnings management, resistant CFOs seem to prevent or discourage such behavior. One implication that can be drawn from these results is that in order to satisfy their personal motives, CEOs use their power to exert pressure on CFOs to undertake earnings management. Such motives usually include equity and career-based incentives (see [Feng et al. 2011](#); [Friedman 2014](#); [Ali and Zhang 2015](#)). Our results show that the negative impact of CFO resistance in firms with powerful CEOs is much stronger in firms whose CEOs also have greater equity- and/or career-based incentives, indicating CEO incentives and CEO power complements each other in earnings management.

This study contributes to the accounting literature by documenting that the CFO's resistance to pressure matters to a firm's reporting outcomes. Most of the existing literature primarily focuses on how certain CEO characteristics affect earnings management. 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. \(2012\)](#) study CEOs' ability; [Huang et al. \(2012\)](#) look at CEOs' age; [Schrand and Zechman \(2012\)](#) focus on CEO overconfidence; [Ali and Zhang \(2015\)](#) on CEOs' tenure; [Chen et al. \(2015\)](#) look at CEO contractual protection, whereas [Burns and Kedia \(2006\)](#), [Bergstresser and Philippon \(2006\)](#) and [Efendi et al. \(2007\)](#) analyse the role of CEO compensation incentives. Despite them being key players in the financial reporting process, there is relatively little evidence on the effect of CFOs on earnings management (see [Aier et al., 2005](#); [Geiger and North, 2006](#); [Ge et al.,](#)

2011; [Bedard et al., 2014](#)). We extend this strand of literature by developing a measure of CFO resistance and examine how the ability and willingness of a CFO to withstand undue pressures can directly and indirectly affect the extent of earnings management.

Our paper is most related and builds upon the studies of [Aier et al. \(2005\)](#) and [Bedard et al. \(2014\)](#). [Aier et al. \(2005\)](#) find that firms whose CFOs have greater financial expertise are less likely to restate their earnings. [Bedard et al. \(2014\)](#) find that firms with their CFOs on the board are associated with higher financial reporting quality. Our study complements and extends these studies in at least two important ways: First, rather than focusing on a particular CFO characteristic, we construct a comprehensive measure that intends to capture CFO resistance to pressure. We argue that while individual CFO-specific attributes such as board membership and outside board experience are important, it is most likely the combination of these attributes that determine whether a CFO's ability and potential to affect firms' financial reporting practices is realized.

Second, in addition to the direct effect of CFO resistance on earnings management, we also consider moderating effects of CFO resistance through internal pressures from CEOs with more power that make firms more susceptible to misreport earnings. By doing so, we build upon the recent studies of [Jiang et al. \(2010\)](#), [Feng et al. \(2011\)](#) and [Friedman \(2014\)](#), which investigate the relative influence of CEOs and CFOs on earnings management. [Jiang et al. \(2010\)](#) find that the association between CFO equity incentives and earnings management is stronger as compared to those of CEOs, suggesting a significant influence of CFOs in financial reporting quality. In contrast, [Feng et al. \(2011\)](#) report that CFO equity incentives are similar between firms who manipulate their earnings and their counterparts who do not. Instead, they find that firms with significant earnings manipulations are more likely to have powerful CEOs. [Friedman \(2014\)](#) constructs a theoretical model of CEO power over the CFO and show that powerful CEOs are likely to have a more significant influence on earnings management. To the best of our knowledge, these are the only empirical studies on the relative importance of CEOs and CFOs. We contribute to this line of inquiry by showing that there exists a group of CFOs with certain characteristics that exhibit resistance to pressure from powerful CEOs to manipulate earnings.

The remainder of the paper is organized as follows: In Section 2, we discuss theoretical motivation and develop hypotheses. Section 3 describes our data, variable construction and presents descriptive statistics. In Section 4, we present our main empirical results. Section 5 provides more evidence on our main findings. Finally, Section 6 concludes.

2 Theoretical Motivation and Hypothesis Development

Internal pressure from powerful CEOs is widely suggested as one of the most important reasons why firms engage in earnings management (see, e.g., [Friedman 2014](#); [Chu et al. 2017](#)). The decision-making authority is more likely to be centralized in the hands of CEOs when they are more powerful ([Adams et al., 2005](#)). This enables CEOs to consistently exert their will and influence corporate decisions including those related to financial reporting. In order to undertake earnings management, however, the CEO needs the CFO's co-operation and input due to their responsibility of overseeing the firm's financial reporting process. Therefore, CEOs often use their power to compromise the independence of the CFO. Consistent with this reasoning, [Feng et al. \(2011\)](#) find that firms with significant earnings manipulations are more likely to have powerful CEOs. They provide evidence suggesting CEO pressure is a significant driver of CFOs' involvement in earnings manipulation. [Leone and Liu \(2010\)](#) also show that CFOs are more likely to be fired (as the designated "scapegoat") after accounting irregularities in firms where CEOs are more powerful. More recently, [Bishop et al. \(2017\)](#) find that compliance pressure from the CEO significantly affects CFOs' accounting choices.

While prior research mainly focuses on CEO power and their influence on earnings management, it largely ignores the ability and willingness of CFOs in preventing powerful CEOs from exerting pressure in the reporting process. In this study, we develop our main hypotheses that addresses the question of how CFOs differ in their level of *resistance* to CEO pressure and how they can mitigate the effect of CEO power on aggressive earnings management. In doing so, we identify sources of resistance that directly influence the capacity of the CFO to resist pressure exerted by the CEO.

In an organizational context, the term "resistance" has been described as an important attribute that allows an individual to withstand undue pressures from others ([Willis, 2015](#)).

One of the most important sources of resistance is *power* (see [French and Raven, 1959](#); [Jermier et al., 1994](#)). Although power is often conceptualized as the capacity to influence the decisions of other, it also relates to the extent to which an individual is susceptible to the dominating influence of others ([Galinsky et al., 2008](#)). This suggests that the CEO pressure over the CFO may be lower in the case of powerful CFOs. [Friedman \(2014\)](#) also acknowledges that a CEO's power over the CFO can be mitigated if the CFO is also powerful. Power can be classified as formal, which stems from one's structural position within the organizational hierarchy and informal, which an individual accumulates in the form of skills, experience, expertise, and knowledge (see, e.g., [Peiró and Meliá, 2003](#); [Greve and Mitsuhashi, 2007](#)). We expect that CFOs with high structural power can establish stronger links with other board members (including the members of the audit committee) due to their frequent meetings and interactions ([Adams and Ferreira, 2007](#); [Bedard et al., 2014](#)), thus increasing their capacity to resist pressure exerted by the CEO to misreport earnings. Furthermore, CFOs' greater expertise should allow them to have significant influence over financial reporting decisions, thus providing them with greater confidence to manage pressure from CEOs ([Bishop et al., 2017](#)). We measure the CFO's formal power by looking at CFO board membership, pay status (if the CFO is among the top three paid executives) and relative pay status (compared to the CEO); and informal power using the length of CFO tenure and CFO seniority (as proxied by age).

A CFO's concern for his/her *reputation* also serves as a potential source of his/her willingness to resist pressures over financial reporting. From a labor market perspective, [Fama \(1980\)](#) argues that managers' outside opportunity wage depends on the market value of their human capital, credibility, and reputation, which in turn is also affected by the behavior of other managers (including CEOs), actions and firm outcomes. This suggests that managers with significant reputational capital at stake will have stronger incentives not to indulge in earnings management and instead to constrain the actions of CEOs (and other managers), if they believe such actions may damage their external reputation. Thus, the possible loss of a manager's reputation and its subsequent translation into the loss of future wages is likely to increase CFO resistance to pressure. The loss of reputation leads to 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).⁵ Furthermore, managers’ enhanced labor market reputation expands their career opportunities outside their firms, which makes them less reliant on their CEOs for career advancements (Masulis and Mobbs, 2011). This, in turn, enables them to be less susceptible to CEO pressure. We proxy for CFO external reputation by focusing on the number of outside board positions held by the CFO.

An additional source of resistance stems from CFOs’ *professional commitment*. A large literature in accounting, psychology and organizational behavior argues that professional commitment significantly affects professionals’ judgments and decisions under pressures (see e.g., Goldman and Barlev, 1974; Raelin, 1985; Lord and DeZoort, 2001). Professional commitment is defined as the acceptance of (and belief in) the values and standards of a profession (such as qualified accountants⁶), a willingness to exert substantial effort on behalf of the profession, as well as the desire to maintain membership in the profession (Aranya and Ferris, 1984). In the context of the present study, we infer that qualified accountants in CFO roles will respond differently to pressures (e.g., not engaging in a behavior that has a potential to damage the profession), due to the code of ethical conduct and high standards of the profession.⁷ The professional code of ethical conduct (in the UK and elsewhere) also provides a conceptual framework for qualified accountants to help eliminate or reduce pressures (from immediate superior, managers or colleagues), including attempts to exercise undue influence over them, related to unethical or illegal earnings management strategies (see Sections 100

⁵Besides loss of reputation, CFOs are also more likely to face substantial legal and career costs in the presence of earnings management, including potential job turnovers (Hennes et al., 2008; Leone and Liu, 2010) and penalties such as fines, disgorgements, employment restrictions and even criminal charges (Feng et al., 2011).

⁶According to Institute of Chartered Accountants in England and Wales, a qualified accountant in business may be a salaried employee, a director (executive or non-executive), an owner-manager, a volunteer or another working for one or more employing organization. The legal form of the relationship with the employing organization, if any, has no bearing on the ethical responsibilities incumbent on the qualified accountant in business

⁷A similar conjecture is made by Mayhew and Murphy (2014), who argue that: “The socialization process of becoming a Chartered Accountant (CA) and identifying with the associated ethics could produce a strong self-regulation mechanism within an individual when faced with a misreporting decision” (see p.440).

and 300, Code of Ethics, ICAEW).⁸ On the basis of the preceding discussion, we expect professional commitment reduces the degree of pressures and likelihood of qualified accountant CFOs succumbing to those pressures.

Taken together, a CFO's power, reputational capital and professional commitment are important antecedents of resistant to pressure by the CEO to manage earnings. Thus, we expect that the higher the resistance the CFO has to pressure, the less likely that the firm will engage in earnings management. Furthermore, the above discussion suggests that the ability and willingness of the CFO in reducing the extent of earnings management is likely to play an important moderating role, especially, in firms where a CEO is in a powerful position to instigate earnings manipulation. If so, then one should expect the positive relation between CEO power and earnings management to be less pronounced in firms where CFO resistance is higher.

The above discussion leads to our following two hypotheses:

Hypothesis 1: *CFO resistance is negatively associated with earnings management, ceteris paribus.*

Hypothesis 2: *CFO resistance moderates the association between CEO power and earnings management, ceteris paribus.*

We expect that the moderating effect of CFO resistance on CEO power is likely to be stronger in firms whose CEOs also have self-serving motives to engage in earning management. Recent studies by [Feng et al. \(2011\)](#) and [Friedman \(2014\)](#) document that CEOs are more likely to use their power on CFOs to manipulate earnings when they seek high incentives from doing so (such as equity and career-based incentives). Prior literature also provide evidence which suggest that CEO equity and career incentives are tend to be positively as-

⁸For example, the Code recommends that when a qualified accountant encounters unusual circumstances that create threats to compliance with the fundamental principles, they should make the concern known to “those charged with governance of the organization, such as the board of directors or the audit committee”. In addition, the Code advises qualified accountants that in situations where a significant conflict cannot be resolved from within the organization, they should seek professional advice from ICAEW or from legal advisors ([Sections 100.19-100.20, Code of Ethics, ICAEW](#)). In all cases, the qualified accountants are explicitly instructed to be “not knowingly be associated with reports, returns, communications or other information where they believe that the information contains a materially false or misleading statements”, and are advised that the “work must be un-corrupted by self-interest and not be influenced by the interests of other parties” ([Section 110: Integrity, Code of Ethics, ICAEW](#)).

sociated with various measures of earnings management (see, e.g., [Bartov and Mohanram, 2004](#); [Cheng and Warfield, 2005](#); [Bergstresser and Philippon, 2006](#); [McVay, 2006](#); [Burns and Kedia, 2006](#); [Feng et al., 2011](#); [Ali and Zhang, 2015](#)).

Thus, our third and fourth hypothesis is:

Hypothesis 3: *CFO resistance moderates the association between CEO power and earnings management when CEOs have higher equity incentives, ceteris paribus.*

Hypothesis 4: *CFO resistance moderates the association between CEO power and earnings management when CEOs have higher career incentives, ceteris paribus.*

3 Data, Construction of Variables and Descriptive Statistics

3.1 Data Sources

Our dataset combines information from several sources. 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. We identify CFOs based on the data item “individual role,” and by pinpointing the following, titles⁹: CFO, chief financial officer, finance director (FD), group finance director (GFD) and executive director (finance). Board and Audit Committee characteristics are also obtained from BoardEx. Firm characteristics and accounting information including that used to estimate abnormal accruals are from Thomson Reuters - DataStream, while data on analysts consensus earnings forecast were collected from the Institutional Brokers Estimate System (I/B/E/S). Data on firms’ auditors were accessed from Financial Analysis Made Easy (FAME), a comprehensive database for U.K. private and publicly-listed companies maintained by Bureau Van Dijk. Following prior literature on the subject, we exclude all financial and utility firms from the analysis because firms in regulated industries have different financial reporting incentives from other firms. Observations with missing values are also excluded from the final sample. All continuous variables are winsorized at their 1st and 99th percentiles to reduce the influence of outliers. Our

⁹UK firms do not uniformly use the title of CFO. Many firms use other equivalent titles, such as the 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.

final sample contains 12,011 firm-year observations. Panel A of Table 2 reports the sample selection process. Detailed variable definitions are provided in the Appendix.

3.2 Measuring CFO Resistance

We construct a measure (CFO resistance) that assesses the ability of the CFO to withstand undue pressures to engage in earnings management based on several CFO-specific characteristics that are perceived to capture three sources of resistance, namely power, reputational capital and professional commitment, as analytically discussed in Section 2. Our first set of variables is intended to capture a CFO’s power or influence within the organization. More specifically, we create following variables: *CFO Executive Director*, a dummy variable that identifies whether the CFO is an executive director. Executive directors are considered to have more influence on board decisions due to their firm-specific knowledge and understanding about the firms’ purpose (Fama and Jensen, 1983); *CFO Relative Pay*, is defined as the ratio of the CFO’s total compensation, excluding equity-based awards, to the CEO’s total compensation; *CFO Top 3*, a dummy variable that identifies whether the CFO is among the top three highest-paid executives of the firm. We use the variables *CFO Relative Pay* and *CFO Top 3* is to capture the extent to which the CFO is in a powerful position with respect to the CEO (and other executives)¹⁰. As argued in Finkelstein (1992), a manager’s compensation is considered to be an important measure of his/her power derived from his/her structural position within the firm; and *CFO Seniority*, the age of the CFO. We draw the idea of seniority as a measure of an executive’s capability, experience and confidence to act in a way that challenges the CEO from Golden and Zajac (2001).

Regarding CFOs’ reputational capital, we use *CFO Outside Director*, a dummy variable that identifies whether the CFO is a non-executive director¹¹ in other firm(s). Fama and Jensen (1983) theorize that an outside board membership is an indication of an individual’s strong decision-making ability at their own firm. These managers are perceived to have better decision management skills, valuable reputation and more credibility.

¹⁰Ellul and Yerramilli (2013) use a similar measure to capture the relative importance of Chief Risk Officer (CRO) within the organization.

¹¹In the UK, a non-executive director is a member of the board who is not involved in daily management; typically is a manager in other firm.

Finally, for professional commitment, we use the variable *CFO Qualified Accountant*, a dummy variable that identifies whether the CFO holds a professional certification in accounting (e.g., Chartered Accountant (CA)) or financial analysis (e.g., Chartered Financial Analyst (CFA)) or not (see [Aranya and Ferris, 1984](#); [Mayhew and Murphy, 2014](#)).

We employ principal component analysis (PCA) to create our measure “CFO Resistance”. The main advantage of using PCA is that it enables us to combine the six variables mentioned above into a one-dimensional index, which attempts to capture more effectively the ability and willingness of CFOs’ resistance to pressure. By doing so, we control for the potential multicollinearity problem that may arise when several CFO characteristics are included independently in a model.

Panel A of Table 1 presents the results from the PCA, which yields one component with an eigenvalue greater than one.¹² This principal component captures 65.26% of the total variance in our data and has an eigenvalue of 3.91. The corresponding component loadings are also reported in this panel. As expected, all six variables used positively contribute to CFO resistance. We use this measure to classify CFOs into two categories, those with scores greater than the yearly median value of CFO resistance (perceived as “resistant CFOs”) and those with scores lower than the yearly median value of CFO resistance (perceived as “non-resistant CFOs”). In Panel B of Table 1, we present the correlation matrix of CFO variables used to construct CFO resistance. Importantly, the results show a strong positive correlation among most of the variables. For instance, the strong correlation between *CFO Top 3* and *CFO Executive Director* indicates that CFOs who are among the top three highest-paid executives in their firm are more likely to sit on boards. Similarly, senior and more qualified CFOs are more likely to earn higher compensation. Overall, the high correlations among key CFO characteristics justify the use of PCA for constructing a measure of CFO resistance.

3.3 Validation of the CFO Resistance Measure

We now proceed to perform a few tests to assess the extent to which our CFO resistance reflects CFOs’ ability and incentives to influence firms’ practices. According to [Friedman](#)

¹²An 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.

(2014), a CFO who eventually becomes CEO at the same or a similar or better firm could be thought of as one who was less susceptible to CEO pressure while CFO. So, we first compare the average values of CFO resistance for the case of successful and less-successful CFOs, as identified *ex post*. By looking at CFO turnovers, we classify as “successful CFOs” those CFOs who were promoted to the CEO position in their own or another company and as “less-successful CFOs” those who were replaced from the CFO position following poor financial performance in their firm (i.e. bottom quartile in industry-adjusted ROA). We therefore expect the value of CFO resistance to be higher for the case of successful CFOs. The results reported in Panel C of Table 1 show that the average value of CFO resistance is significantly higher in firms with successful CFOs than those with less-successful CFOs. The mean and median differences in CFO resistance across the two sub-samples are statistically significant at the 1% level.

As a second validation test, we manually check the profiles of CFOs who have scored very highly in our CFO resistance and examine whether CFOs with high scores correspond to high-profile CFOs who made the news with their achievements in top business publications. Explicit recognition of a CFO by top business publications is a reflection of his/her outside reputation and success. We find several examples across our sample that ensures the accuracy of our CFO resistance. A good example of a resistant CFO is John George Bason, whose index score is above 95th percentile in the distribution (2.73 as of 2014). He serves as the CFO and Executive Director¹³ of Associated British Food Plc from 1999-present. John G. Bason also serves as a non-executive director and Audit Committee chairman of Compass Group Plc. (2011-present). He is a Chartered Accountant from Institute of Chartered Accountant in England and Wales (ICAEW). His total compensation in 2014 was £2.67 million (including an annual salary and bonus of £1.2 million), which makes him the second highest paid executives within the firm. In 2011, John G. Bason was short-listed as FTSE-100 Finance Director of the Year Excellence Awards after a continuous strong financial performance of the group (Financial Director, 2011)¹⁴

¹³The only executive in the firm who holds a board position other than the CEO, George Garfield Weston

¹⁴See article, “[Associated British Food’s Bason’s career pointing in the right direction](#)” on [FinancialDirector.co.uk](#) (Published on: May 18, 2011). Also see this article on [Financial Director dot com](#).

Another good example of a resistant CFO is Alan Stewart, whose index score is above the 90th percentile in the distribution in 2015. Alan Stewart joined as the CFO and executive director of Tesco Plc. in 2014, in an attempt to resolve the £250 million accounting error that had led Tesco into crisis. For instance, an article in *Thomson Reuters* (UK) states that, “Tesco rushed its new CFO (Alan Stewart) into place on Tuesday, trying to shore up a leadership team badly damaged by the accounting mistake revealed on Monday that knocked millions off the company’s profits and billions from its share price.”¹⁵ He had held the CFO role at Marks & Spencer since October 2010 and before that he was the finance director of WH Smith. He also has been a non-executive director of Diageo Plc. since 2014. Mr Stewart is a Chartered Accountant from Institute of Chartered Accountant in England and Wales (ICAEW). In 2015, he was recognized as one of the “top CFOs” by *Accountancy Age’s* 2015 Financial Power List.¹⁶ He is also the second highest paid executive of the firm.

3.4 Measures of Earnings Management and its Determinants

Our aim is to examine the extent to which earnings management practices vary among firms with resistant CFOs and those with pressure-sensitive CFOs. In this section, we introduce our main proxies for detecting earnings management and describe our main set of control variables.

3.4.1 *Accrual Earnings Management*

In our main analysis we estimate earnings management using discretionary accruals, a commonly used proxy in prior studies (see, e.g., [Geiger and North, 2006](#); [Dhaliwal et al., 2010](#); [Ge et al., 2011](#); [Ali and Zhang, 2015](#)). The academic literature distinguishes between the non-discretionary and discretionary components of total accruals. The normal accruals are expected to reflect changes in firm’s economic conditions such as assets and revenue growth, while abnormal accruals is meant to reflect management’s accounting choices to manage earnings ([Jones, 1991](#); [Dechow et al., 1995](#); [Dechow et al., 2010](#)). Prior literature suggests

¹⁵See article, “[Tesco Parachutes in New Finance Boss to Fix Accounting Scandal](#)” on Reuters dotcom (UK Edition) (Published on: September 23, 2014)

¹⁶See article, “[Retail CFOs dominate 2015 Financial Power List](#)” in Financial Director (Published on January 6, 2015).

a variety of estimation strategies for distinguishing discretionary from non-discretionary accruals. We use an augmented version of modified Jones model proposed by [Kothari et al. \(2005\)](#). To ensure that discretionary accruals are not driven by firm performance, Equation (1) includes lagged return on assets, ROA_{t-1} .¹⁷ Normal accruals are estimated using the following model:

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

Total Accruals_{i,t} = EBXI – CFFO, where EBXI is the earnings before extraordinary items and discontinued operations and CFFO is the operating cash flows taken from the cash flow statement;¹⁸

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

ΔREV_{i,t} = Change in revenue from the preceding year; and

ΔREC_{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) for each industry-year group using all observation for which required data is available on Thomson-DataStream. Discretionary accruals are actual accruals minus normal accruals calculated using the estimated coefficients from the Equation (1). Under this measure, a higher level of discretionary accruals indicates accrual earnings management (or lower earnings quality).

3.4.2 Real Earnings Management

We rely on the three methods proposed by [Roychowdhury \(2006\)](#) to proxy real earnings management: (i) abnormal cash flow from operations (RM_CFFO), accelerating sales through increased price discounts and lenient credit terms which will result increase in earn-

¹⁷Prior studies by [Guthrie and Sokolowsky \(2010\)](#) and [Bedard et al. \(2014\)](#) use the same model to measure discretionary accruals.

¹⁸Following [Hribar and Collins \(2002\)](#), we compute total accruals using the cash flow approach to avoid the non-articulation problem of the balance sheet method.

ing, but will result in lower cash flows in current period; (ii) abnormal production cost (RM_PROD), managers increase production to spread fixed cost over large number of units to report lower cost of goods sold (COGS). However, this will still lead to higher production cost relative to sales and (iii) abnormal discretionary expenses (RM_DISX), managers reduce advertising, research and development (R&D), and selling, general and administrative (SG&A) expenses to boost firm's current period earnings. Firms with low abnormal RM_CFFO, low abnormal RM_DISX, or high abnormal RM_PROD are more likely to be involved in real earnings management practices. To calculate RM_CFFO, RM_PROD and RM_DISX, we first generate normal levels of cash flow from operation, 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 industry/year:

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

Abnormal cash flow from operations (RM_CFFO) is actual cash flow from operation minus the normal level of cash flow from operation calculated using the estimated coefficients from Equation (2). We then multiply RM_CFFO by negative one, so that the higher these values the more likely it is that the firm is engaging in sales revenues. We next estimate the normal production cost (RM_PROD) by running the following cross-sectional regression:

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

where, $PROD_{i,t}$ is the production cost in current year is defined as the sum of cost of good sold (COGS) and change in inventory during the year. Abnormal production cost (RM_PROD) is actual production cost minus normal production cost calculated using the estimated coefficients from Equation (3). Next, we model the normal level of discretionary expenses as:

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

where, $DISC_EXP_{i,t}$ is discretionary expenses defined as sum of advertising expense, research and development expense and selling, general and administrative expense in the current year. Abnormal discretionary expenses (RM_DISX) is actual discretionary expenses minus normal level of discretionary expenses calculated using the estimated coefficients from Equation (4). We then multiply RM_DISX by negative one, so that the higher these values the more likely it is that the firm is cutting discretionary expenses. Following [Cohen and Zarowin \(2010\)](#), we compute two aggregate measures of real earnings management, RM_1 and RM_2. RM_1 is the sum of RM_PROD and RM_DISX, while RM_2 is the sum of RM_CFFO and RM_DISX. In both cases, higher the values the more likely that the firm engage in real earnings management activities. We also acknowledge that the three variables underlying RM_CFFO, RM_PROD and RM_DISX may have different implications for earnings that may dilute any results using RM_1 and RM_2 alone. We thus test both the aggregated measures as well as the three individual real earnings management proxies.

3.4.3 Discretionary Revenues

In addition to the discretionary accruals measure, we focus on the absolute values of discretionary revenues (ABS_DISC_REV) as an alternative way to measure earnings management. We draw upon [Stubben \(2010\)](#) who shows that traditional discretionary accrual models are more biased, less well specified and less powerful in detecting earnings management when compared to discretionary revenue models. Following [Stubben \(2010\)](#), we estimate discretionary revenues as the residuals from the following model:

$$\frac{\Delta REC_{i,t}}{Assets_{i,t-1}} = \beta_0 + \frac{\Delta REV_{i,t}}{Assets_{i,t-1}} + \varepsilon_{i,t} \quad (5)$$

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

$\Delta\text{REV}_{i,t}$ = Change in revenue from the preceding year; and

$\text{Assets}_{i,t-1}$ = Total assets at the beginning of the year

3.4.4 Meeting or Just Beating Analysts' Forecasts

Lastly, we look at firms that meet or just beat consensus analysts forecast. The extant literature suggest that a firm's tendency to report positive earnings surprises over analysts' forecast is considered as an indication of earnings management (Burgstahler and Dichev, 1997; Degeorge et al., 1999). We define "JUST_MEET_BEAT" as a dummy variable that identifies whether a firm's actual earnings per share (EPS) is equal to or just beat the latest analysts' consensus earnings forecast (reported in I/B/E/S) by one penny.

3.4.5 Control Variables

Our main set of control variables is based on firm-specific determinants of earnings management as noted in Watts and Zimmerman (1986) Hribar and Craig Nichols (2007), Dechow et al. (2010) and Bedard et al. (2014), including firm size, leverage, market-to-book ratio, sales growth, firm performance, litigation risk, Big 4, sales volatility and cash flow volatility. In addition, we also control for a set of CEO-specific characteristics to mitigate the concern that our findings are not driven by omitted variable bias. Specifically, we include CEO age, CEO tenure (see, Huang et al., 2012) and CEO financial expertise (Ali and Zhang, 2015). Lastly, board size, board independence, audit committee size, audit committee independence and audit committee financial expertise are included as controls for internal governance mechanisms, which are predicted to affect earnings management (see e.g., Bedard et al., 2004; Badolato et al., 2014). Analytical definitions for these variables are provided in the Appendix.

3.5 Summary Statistics

Table 2 provides key descriptive statistics. We find that 74% of CFOs in our sample hold a board position and 25% of CFOs also sit on outside boards. An average CFO is 47.12 years old. Further, 65.6% of CFOs are among the top three highest-paid executives in their firm. 62.8% of CFOs in our sample have a chartered certification. The firm and governance

characteristics presented in Table 2 show that the average firm has a log of total assets of 11.60, a market-to-book ratio of 1.98, and a leverage ratio of 17.6%. The board-level data show that the average board size in our sample is 7 directors and 40% of them are non-executive directors. The audit-level data show that the average audit committee size is 3 directors. The vast majority of audit committee members are non-executive directors (i.e., audit committee independence equals 73.5%). It also shows that the 39.9% of audit committee members have financial expertise, which is, on average 1.19 members per audit committee. The Big 4 firms, which includes Deloitte, Ernst and Young, KPMG and Price Waterhouse Coopers are the primary auditors of the 50% of our sample firm-years.

4 CFO Resistance and Earnings Management - Tests of H1

This section tests Hypothesis 1 and addresses potential endogeneity problems using a variety of methods.

4.1 Benchmark Results

Table 3 presents the regression results on the direct effect of CFO resistance on discretionary accruals. Models 1 and 2 of Table 3 are simple ordinary least squares panel regressions with standard errors clustered at the firm level to account for within-firm correlations. The dependent variable is discretionary accruals, estimated using an augmented version of the modified Jones model proposed by [Kothari et al. \(2005\)](#), as our proxy for earnings management. Our main independent variable of interest is CFO resistance. We use one-year lagged values of CFO resistance. The results, as presented in Table 3, support a negative association between CFO resistance and discretionary accruals. This suggests that firms with resistant CFOs (i.e., high values of CFO resistance) are less likely to engage in accruals-based earnings management. 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 discretionary accruals of 1.50 percentage points, *ceteris paribus* (as per Model 2). The coefficients on control variables are consistent with the prior studies on earnings management (see, e.g., [Watts and Zimmerman, 1986](#); [Frankel et al., 2002](#); [Hribar](#)

and Craig Nichols, 2007; Dechow et al., 2010; Dhaliwal et al., 2010; Bedard et al., 2014). We find that coefficients on market-to-book, leverage, and cash flow volatility are positive and statistically significant, whereas the coefficients on firm size and return on assets are negative and significant. This suggests that highly-levered firms and firms with better investment opportunities and higher cash flow volatility are more likely to engage in accrual earnings management and that larger firms and firms with better performance are less likely to engage in accrual earnings management. We also find some evidence that firms with higher audit committee independence and lower board size are more effective in constraining opportunistic financial reporting in firms (Badolato et al., 2014).

In Model 3 of Table 3, we re-estimate our baseline specifications with firm fixed effects, which control for firm-specific unobserved time-invariant characteristics that might drive the relationship between our CFO resistance and discretionary accruals. The estimates continue to show a negative effect of CFO resistance on discretionary accruals. This further eliminates our concern that the firm level unobserved heterogeneity could be driving our results. In Models 4 and 5, we run a similar specifications but with CEO and CFO fixed effects, respectively. We are doing so to demonstrate that managerial style (Bertrand and Schoar, 2003) does not merely drive the effect we attribute to CFO resistance. The coefficient on CFO resistance continues to indicate a negative effect on accrual earnings management. Finally, in Model 6 of Table 3, we include an additional set of CEO-level controls and check whether the negative relationship between CFO resistance and discretionary accruals remains robust. The CEO-level controls include CEO age, tenure, and qualified accountant. Taken together, the evidence in Table 3 supports a strong negative association between CFO resistance and discretionary accruals. We find the coefficient estimate for CFO resistance continues to be negative and statistically significant at the 1% level. Taken together, the evidence in Table 3 supports our Hypothesis 1.

4.2 Addressing Endogeneity Concerns

One common concern in accounting literature examining the effect of managerial characteristics on firms' financial reporting decisions is that the corporate governance structures are

developed through choice and thus could be endogenous with other firm or CEO characteristics (see, e.g., [Bertrand and Schoar, 2003](#); [Francis et al., 2008](#); [Bedard et al., 2014](#); [Cheng et al., 2015](#)). In our context, it is likely that boards with powerful CEOs (or powerful CEOs themselves) appoint CFOs with particular attributes (e.g., superior skills and/or higher reputation), making it difficult to establish causality (i.e., simultaneous-equation bias). In this section, we employ various methods to mitigate potential endogeneity concerns.

4.2.1 *An Instrumental Variable Approach*

We firstly employ a two-stage least squares instrumental variable (IV). Using two instruments that satisfy the criteria of relevance (i.e., associated with CFO resistance) and exclusion (i.e., no direct effect on the discretionary accruals except through CFO resistance), both from a theoretical and an econometric perspective as recommended by [Larcker and Rusticus \(2010\)](#).

To identify suitable instruments, 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 as "NOFE") as a potential instrument for our CFO resistance. Based on the findings of the literature on directors networks, we hypothesize that the higher the NOFE connected to the CFO, the higher the value for CFO resistance. This is because CFOs are likely to realize positive "externalities" from their enhanced professional network in their industry and geographical neighborhood ([Dichev et al., 2013](#)). For instance, informal conversations in their network of financial experts can facilitate finance-specific human capital through the transfer and exchange of knowledge from one expert to another ([Geletkanycz et al., 2001](#); [Inkpen and Tsang, 2005](#)). We also utilize "CFO Distress Experience", which is an indicator equal to 1 if the CFO worked at a firm that filed for bankruptcy, as an additional instrument for our CFO resistance. The choice of this instrument is based on prior studies (see, e.g., [Dittmar and Duchin \(2015\)](#)), which suggest that managers' experience with negative corporate outcomes such as bankruptcy and financial difficulties or shocks may alter their risk preferences, and turn them into more-resistant and conservative. We would thus expect to find a positive

association between our instruments and CFO resistance. The number of financial experts and CFO distress experience theoretically satisfies both the relevance and exclusion requirements as we cannot identify any economic reasons that would lead us to expect an association between our instruments and discretionary accruals, other than through CFO resistance.

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

$$\begin{aligned} CFO\ Resistance_{i,t} = & \beta_0 + \beta_1 NOFE_{i,t} + \beta_2 CFO\ Distress\ Experience_{i,t} + \gamma X_{i,t} \\ & + f_t + \nu_i + \varepsilon_{i,t} \end{aligned} \quad (6)$$

In the second stage, we estimate the following:

$$\begin{aligned} Discretionary\ Accruals_{i,t} = & \alpha + \beta_1 Predicted\ CFO\ Resistance_{i,t} + \gamma X_{i,t} \\ & + f_t + \nu_i + \varepsilon_{i,t} \end{aligned} \quad (7)$$

In Equation (6), CFO resistance is the dependent variable, the number of financial experts (NOFE) and CFO distress experience are our instrumental variables, and the vector of firm controls ($X_{i,t}$) include all controls used in our main regression of Table 3. In Equation (7), we use the predicted values estimated from the first stage regression as a proxy for our CFO resistance, taking into account the possible selection of hiring a resistant CFO, and the same controls as in the first stage. Our main variable of interest is the *Predicted CFO Resistance*.

Table 4 presents the results from the first stage and second stage regression. In Model 1, we find that the coefficients on NOFE and CFO distress experience are positive and statistically significant in the first stage regressions. This indicates that the number of financial experts in the CFO's professional network and their experience of working in a distressed firm has an impact on CFO resistance. To further assess the validity of our instruments, we also test Kleibergen-Paap rank Wald F -statistic for a weak instrument at the end of the first-stage regressions. We find F -statistic to be above the cut-off value suggested by [Stock et al. \(2002\)](#), which suggests that we can reject the null hypothesis that instruments are weak.

In the second stage regression (Model 2), we find that the predicted effect of CFO re-

sistance on discretionary accruals continues to remain negative and statistically significant. To test the consistency of these estimates, we perform Hansen’s J -test of over-identifying restrictions under the null that instruments are valid. The Hansen J -test statistic yields a p -value of 0.516, which means that we cannot reject the null hypothesis that our instruments are valid.

4.2.2 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.^{19,20}

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, board size, audit committee size, audit committee independence and audit financial expertise.

Panel A of Table 5 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. By contrast, the results indicate that in the post-turnover period, the discretionary accruals of treatment firms were 6.4 percentage points lower than in the comparison sample of control firms. The difference between the two groups is statistically significant at the 5% level. Most importantly, we find that the decline in average discretionary from pre- to post-CFO turnover was 10.3 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 10% level. The results suggest that turnover from a non-resistant CFO to a resistant CFO is associated with a significant decline in discretionary accruals. Overall, these results provide further evidence supporting the mitigating effect of CFOs on earnings management.

¹⁹The boards are more likely to change their managers in periods of crises ([Fee et al., 2013](#)) deliberately.

²⁰[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.

5 CEOs, CFOs and Earnings Management - Tests of H2, H3 and H4

5.1 Does CFO Resistance Moderates Powerful CEOs' Accounting Choices?

In this section, we test our second hypothesis (H2) predicting the moderating effect of CFO resistance on the association between CEO power and earnings management. The dependent variable is discretionary accruals, our proxy for earnings management, in all specifications. We follow prior literature and use four variables to measure CEO power. The first is CEO ownership power, a dummy variable that equals one if the value of CEO ownership is above the yearly median value and zero otherwise. CEO ownership as defined by the percentage of common shares and options held by the CEO at the end of fiscal year to the market value of common shares outstanding reflects the influence and power of the CEO (see [Finkelstein, 1992](#)). The second is CEO-chairman duality power, a dummy variable that identifies whether the CEO is also the Chairman of the Board (see [Adams et al., 2005](#)). The third is CEO pay slice power, a dummy variable that equals one if the value of CEO pay slice is above the yearly median value and zero otherwise. CEO pay slice which is defined as the ratio of the CEO's total annual compensation to the aggregate of total top five executives' compensation reflects CEO relative power vis-à-vis the board (see [Bebchuk et al., 2011](#)). Finally, we use CEO relative board power, a dummy variable that identifies whether the CEO has a role on two or more board committees. We draw the idea of CEO relative board as a measure of CEO power from [Abernethy et al. \(2014\)](#), who argue that sitting on multiple board committees enhances the concentration of decision-making rights in one individual, thus increasing his/her power to influence firm outcomes. We construct our measure of *CEO Power* by adding the above four categorical variables. The CEO power ranges between 0 and 4 and indicates the degree of CEO power.

Table 6 presents the results. The results of Model 1, which only includes CFO Resistance, CEO Power, and the interaction term, show that the coefficients on CEO power are positive and significant at the 1% level, suggesting firms with powerful CEOs to be more likely to engage in earnings management. Focusing on the main variable of interest, we find that

the coefficient on CFO Resistance and CEO Power interaction is negative and significant at the 1% level. This result is consistent with H2 and indicates that the higher degree of CFO resistance weakens the effect of powerful CEOs on earnings management. In Model 2 of Table 6, we find similar results after controlling for the same set of firm-, board-, and audit-level characteristics, as in our baseline specification (Model 2) of Table 3.

In Models 3-4 of Table 6, we run a similar specification with firm, CEO and CFO fixed effects, respectively. Our results show that in all three cases the coefficient on the interaction term continues to indicate a negative effect on discretionary accruals (decrease in earnings management). In Model 5, we also control for the same set of CEO characteristics, as in the main analysis in Table 3. We find the coefficient on the interaction term remains negative and statistically significant. Overall, we interpret these findings as evidence that resistant CFOs have stronger incentives not to collude with entrenched CEOs to engage in reputation-harming financial reporting, instead to restrict CEOs actions if that worsens accruals quality.

5.2 When Do Powerful CEOs Pressure CFOs to Manage Earnings?

Our findings thus far suggest that CFOs can help mitigate the association between CEO power and opportunistic earnings management. This moderating effect is attributed to the ability and willingness of CFOs to resist pressure from powerful CEOs. To further validate our inferences, we exploit conditions under which powerful CEOs are more susceptible to engage in earnings management. Recent studies by [Feng et al. \(2011\)](#) and [Friedman \(2014\)](#) show that CEOs are more likely to use their power on CFOs to manipulate earnings when they seek high incentives from doing so (such as equity and career-based incentives). Prior literature also provide evidence which suggest that CEO equity and career incentives are tend to be positively associated with various measures of earnings management (see, e.g., [Bartov and Mohanram, 2004](#); [Cheng and Warfield, 2005](#); [Bergstresser and Philippon, 2006](#); [McVay, 2006](#); [Burns and Kedia, 2006](#); [Feng et al., 2011](#); [Ali and Zhang, 2015](#)).

In this section, we perform a sub-sample analysis to test whether the moderating effect of CFO resistance on CEO power-earnings management relationship is likely to be more

pronounced in firms with high CEO incentives. Accordingly, we first split the sample into sub-samples of firms with High (Low) CEO pay sensitivity. In particular, in Panel A of Table 7, we follow the method described by Bergstresser and Philippon's (2006) to measure CEO pay-for-performance sensitivity as our proxy for equity incentives (as in [Feng et al., 2011](#)). Specifically, the *CEO Pay-for-Performance Sensitivity* is defined as ONEPCT scaled by ONEPCT plus Salary and Bonus, where ONEPCT is the total change in the value of the CEO stocks and stock option portfolio in response to a one percent change in the stock price. We assign firms to the high (low) CEO pay sensitivity group if their value lies above (below) the yearly median value.

Additionally, in Panel B of Table 7, we split the sample into sub-samples of firms with Early (Later) years of CEOs' tenure. *CEO Tenure* is defined as the number of years that the CEO has been with the firm. We draw the idea of CEO tenure as a measure of career-related incentives from [Ali and Zhang \(2015\)](#). They argue that CEOs have greater incentives (higher future compensation, new job opportunities, managerial autonomy) to manipulate earnings in early years due to their career concerns than in later years of CEO service. Following [Ali and Zhang \(2015\)](#), firm-years that correspond to less (more) than first three years of service of the firm's CEO are classified into early (later) years of CEO tenure group.

Table 7 presents the results from the re-estimation of our baseline models in Table 4 for the above subgroups. Consistent with our hypotheses H3 and H4, we find that the mitigating effect of CFO resistance on earnings management is more pronounced in firms where powerful CEOs have higher incentives to manage earnings (high CEO pay sensitivity and early years of CEOs' tenure groups). Collectively, we interpret these findings as evidence that while firms with potentially self-interested CEOs seem to be more likely to engage in earnings management, resistant CFOs seem to prevent or discourage such opportunistic behaviour.²¹

²¹To conserve space, we do not report the coefficients on the control variables in Table 7. These results are available upon request

6 Additional Tests

6.1 Alternative Measures of Earnings Management

In this section, we examine whether our results based on discretionary accruals are robust to the use of a variety of alternative measures of earnings management.

6.1.1 *Real Earnings Manipulations*

We start by re-estimating our baseline specifications (Model 2 of Tables 3 and 6) using real earnings management. [Graham et al. \(2005\)](#) report that a vast majority of CFOs are willing to engage in real earnings management in order to meet or marginally beat the analysts' consensus forecast. Following the prior literature, we use three proxies of real earnings management. These are: RM_PROD, the level of abnormal production cost, where production costs are defined as the sum of cost of goods sold (COGS) and the change in inventories, and 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 (see [Roychowdhury, 2006](#)). We multiply RM_DISX by negative one so that the higher amount, the more likely it is that the firm is cutting discretionary expenses. RM_1 is the sum of RM_PROD and RM_DISX, which captures the total amount of real earnings management (see, [Cohen and Zarowin, 2010](#)).

The results, as presented in Table 8 remain consistent with our main findings. In Models 1, 3 and 5, we find that the coefficient on CFO resistance is consistently negative and statistically significant at the 1% level (with the exception of RM_DISX in Model 2), suggesting that firms with resistant CFOs are less likely to engage in real earnings management.²² Focusing on the moderating effect of CFO resistance (Models 2, 4 and 6 of Table 8), we find that the coefficient on the interaction between CFO resistance and CEO power continues to be negative and statistically significant at conventional levels (with the exception of RM_PROD in Model 2).

²²We do not investigate the results based on RM_CFFO and RM_2 because [Roychowdhury \(2006\)](#) states that "Price discounts, channel stuffing, and overproduction have a negative effect on contemporaneous abnormal cash flow from operations, while reduction of discretionary expenditure has a positive effect. Thus, the net effect an abnormal cash flow from operation is **ambiguous**."

For completeness, we also repeat the analysis, as in Table 7, by splitting the sample into sub-samples of firms with High (Low) incentives. Our results, as presented in Table 9 show that the negative effects of both CFO resistance and the interaction term are likely to be stronger for the sub-sample of firms whose CEOs are more susceptible to engage in earnings management (i.e., high CEO incentives group).

6.1.2 Meeting or Just Beating Analyst's Forecast and Discretionary Revenues

Given the evidence in [Graham et al. \(2005\)](#) on the meeting or just beating analysts' forecast as being the most important reasons for earnings management behavior, we examine whether CFO resistance also affects a firm's likelihood of meeting or just beating analysts' forecast. Next, we use discretionary revenues as an additional measure of earnings management, as in [Stubben \(2010\)](#). The dependent variable in Models 1 and 2 of Table 10 is JUST_MEET_BEAT, an indicator that identifies if a firm's meet or just beat analysts' earnings per share (Meet/Beat Forecast) expectation by one penny and 0 otherwise. In Models 3 and 4, the dependent variable is the absolute value of discretionary revenues. Our results show that firms with resistant CFOs tend to have lower levels of abnormal discretionary revenues, and are less likely to meet or just beat analysts' expectations.

Taken together, the results in this section are consistent with our main finding, suggesting that firms with resistant CFOs have better financial reporting quality that is robust to the alternative measures of earnings management.

7 Conclusion

The study provides empirical evidence on the moderating effect of CFO resistance on the relation between CEO power and earnings management. Using a large sample of UK non-financial firms, we construct a measure that attempts to capture the ability and willingness of the CFO to resist pressures to engage in earnings management. This measure is based on a set of CFO-specific attributes that act as sources of resistance such as power, reputation, and professional commitment. We find that firms with resistant CFOs are associated with lower discretionary accruals. This result is robust to the inclusion of CEO-, board- and governance-

level characteristics. We also estimate fixed effects regressions and find that the results are not driven by time-invariant unobserved heterogeneity. After controlling for firm and CEO fixed effects, the presence of a strong CFO continues to be significantly and economically associated with a lower level of discretionary accruals. Our inferences also remain the same after we account for potential endogenous concerns using instrumental variable (IV) and difference-in-difference approaches.

We then examine whether CFO resistance moderates the positive association between CEO power and discretionary accruals that we document in this study. We find consistent evidence that the effect of resistant CFOs on discretionary accruals is more pronounced in firms whose CEOs have more power to engage in opportunistic earnings management. We find that the mitigating effect of CFO resistance on earnings management is also likely to be more pronounced for the case of firms whose CEOs have high equity and career-related incentives. Overall, our findings suggest that while firms with potentially self-interested CEOs seem to be more likely to engage in earnings management, resistant CFOs seem to prevent or discourage such opportunistic behavior.

What do our results imply for firms and their financial reporting quality in the future? First off, the monitoring role of CFOs to ensure the integrity of financial reporting is a crucial one. The lack of ability in exercising their role will result in compromising the quality of reported earnings which will have damaging implications on shareholder's wealth in the long run. This paper provides evidence that resistant CFOs can play a significant moderating role in reducing the extent of earnings management in corporations. This finding also forms an important consideration for policy-makers on improving CFO independence in finance and accounting functions by alleviating the internal pressures (mainly from the CEO) to manage earnings.

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Appendix

Data Definitions

CFO Characteristics

CFO Executive Director	Dummy variable coded 1 if the CFO sits on the board of directors and 0 otherwise.
CFO Relative Pay	Ratio of the CFO's total compensation, excluding equity-based awards, to the CEO's total compensation.
CFO Top 3	Dummy variable coded 1 if the CFO is among the three highest paid executives and 0 otherwise.
CFO Seniority	The age of the CFO in years.
CFO Outside Director	Dummy variable coded 1 if the CFO sits on at least one outside board and 0 otherwise.
CFO Qualified accountant	Dummy variable coded 1 if the CFO has a chartered qualification in accounting or financial analysis (Chartered Accountant (CA), Associate Chartered Accountant (ACA), Fellow Chartered Accountant (FCA), Chartered Financial Analyst (CFA), Chartered Management Accountant (CMA) and Chartered Secretary) and 0 otherwise.
CFO Resistance	First principal component from a principal component analysis based on the following variables: CFO executive director, CFO relative pay, CFO top 3, CFO seniority, CFO outside director and CFO qualified accountant.
Number of Financial Experts (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 <i>other</i> firms' board where the CFO also serves as a non-executive director.
CFO Distress Experience	Dummy variable coded 1 if the CFO worked at a firm that filed for bankruptcy.

Earnings Management Measures

Discretionary Accruals (DA)	The absolute value of discretionary accruals computed using as augmented version of the modified Jones model, as proposed by Kothari et al. (2005) .
RM.CFFO (Real Earnings Management)	The level of abnormal cash flow from operation, as in Roychowdhury (2006) . We multiply RM.CFFO by negative one, so that the higher values the more likely it is that the firm is engaging in sales manipulations.
RM.PROD (Real Earnings Management)	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, as in Roychowdhury (2006) .
RM.DISX (Real Earnings Management)	The level of abnormal discretionary expenses, where discretionary expenses are the sum of advertising expenses, R&D expenses and SG&A expenses, as in 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
RM.1 (Real Earnings Management)	The sum of RM.PROD and RM.DISX (following, Cohen and Zarowin (2010)).
ABS.DISX.REV (Discretionary Revenues)	The absolute value of discretionary revenues computed using the model proposed by McNichols and Stubben (2008) .
JUST_MEET_BEAT (Analysts' Forecast)	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.
Litigation Risk	Dummy variable coded 1 if the firm is in a technology industry and 0 otherwise.

Appendix (Continued)

Board- and Audit-level Characteristics

Big 4	Dummy variable coded 1 if the firm's auditor is a Big 4 auditor and 0 otherwise.
Board Size	Number of members on the board.
Board Independence	Ratio of number of non-executive directors to board size.
Audit Committee Size	Number of members on the audit committee.
Audit Comm. Independence	Ratio of number of non-executive directors to audit committee size.
Audit Comm. Financial Expert	Dummy variable coded 1 if at-least one outside director has a past experience in the CFO's role and 0 otherwise.

CEO Characteristics

CEO Age	The age of the CEO in years.
CEO Tenure	Number of years as the CEO in the current position.
CEO Financial Expertise	Dummy variable coded 1 if CEO has a chartered qualification in finance or accounting (Chartered Accountant, Chartered Financial Analyst, Chartered Management Accountant and Chartered Secretary) and 0 otherwise.
CEO Ownership Power	Dummy variable coded 1 if the value of CEO ownership is above the yearly median value, and 0 otherwise. CEO ownership is defined by the percentage of common shares and options held by the CEO at the end of fiscal year to the market value of common shares outstanding.
CEO Duality Power	Dummy variable coded 1 if the CEO is also the chairman of the board, and 0 otherwise.
CEO Pay Slice Power	Dummy variable coded 1 if the value of CEO pay slice is above the yearly median value, and 0 otherwise. CEO pay slice is the ratio of the CEO's total annual compensation to the aggregate of total top five executives' compensation (Bebchuk et al., 2011). Following Feng et al. (2011), if BoardEx discloses less than five executives, we assume the undisclosed executives receive the same pay as the lowest paid executive among those disclosed.
CEO Relative Board Power	Dummy variable coded 1 if the CEO has a role on two or more board committees.
CEO Power	Sum of the following four categorical variables: CEO Ownership Power, CEO Duality Power, CEO Pay Slice Power and CEO Relative Board Power.
Early years of CEO Tenure	Dummy variable that equals one for firm-years that correspond to the first three years of service of the firm's CEO, and is zero otherwise, as in Ali and Zhang (2015).
CEO Pay-for-Performance Sensitivity	We follow the method described by Bergstresser and Philippon (2006) to measure pay-for-performance sensitivity. We first calculate ONEPCT as the total change in value of the CEO stocks and stock option portfolio in response to a one percent change in the stock price using the method of Core and Guay (2002). Next we calculate pay-performance sensitivity as: ONEPCT/(ONEPCT+Salary+Bonus).

Table 1
Measuring CFO Resistance

Panel A presents the results from a principal component analysis (PCA) based on the following six CFO attributes: CFO executive director, CFO relative pay, CFO top 3, CFO seniority, CFO outside director and CFO qualified accountant. CFO resistance is the first principal component obtained from the PCA. Component loadings, eigenvalues and the proportion of variance explained by the first component is presented. **Panel B** reports the correlation coefficients among the CFO attributes. **Panel C** presents a validation test, which compares the mean and median (in brackets) values of the CFO resistance for the case of successful and less-successful CFOs, as identified ex post. Successful CFOs are those who took the CEO role in their own or another company, while less-successful CFOs are those who were replaced from the CFO position following poor financial performance in their firm (i.e. bottom quartile in industry-adjusted ROA). The t-statistic is for the difference in means and the Wilcoxon-test is for the difference in medians between successful and less-successful CFOs. *p*-values are reported in parentheses. *** denotes statistical significance at the 1% level. Analytical definitions for all variables are provided in the Appendix.

Panel A: Principal Component Analysis (PCA)						
Principal Component	Components			Component loadings		
CFO Resistance	CFO Executive Director			0.485		
	CFO Relative Pay			0.347		
	CFO Top 3			0.441		
	CFO Seniority			0.479		
	CFO Outside Director			0.219		
	CFO Qualified Accountant			0.414		
	<u>Eigenvalue</u>			<u>Proportion Explained</u>		
CFO Resistance	3.91			65.26 %		
Panel B: Correlation Among CFO Attributes						
	1	2	3	4	5	6
1. CFO Executive Director	1.000					
2. CFO Relative Pay	0.573	1.000				
3. CFO Top 3	0.819	0.536	1.000			
4. CFO Seniority	0.960	0.560	0.797	1.000		
5. CFO Outside Director	0.342	0.204	0.287	0.364	1.000	
6. CFO Qualified Accountant	0.770	0.443	0.623	0.733	0.243	1.000
Panel C: Validation of the CFO Resistance						
	Less-Successful CFOs	Successful CFOs	t-statistics (<i>p</i> -values)	Wilcoxon z-test (<i>p</i> -values)		
CFO Resistance	1.055 [1.151]	1.356 [1.359]	-4.198*** (0.000)	-4.208*** (0.000)		
No. of CFOs	465	176				

Table 2
Sample Selection and Descriptive Statistics

Panel A reports the sample selection process. **Panel B** presents the descriptive statistics for the key variables used in our analysis. Analytical definitions for all variables are provided in the Appendix.

Panel A: Sample Selection							Obs.
Total number of firm-year observations from 1999-2015 with Data Stream and BoardEx data							25,542
Less: financial and utilities firm-years							(7,520)
Less: missing values for the variables used in main regressions							(6,011)
Full Sample (Number of unique firms:1,815)							12,011

Panel B: Summary Statistics						
	Obs.	Mean	Median	S.D.	25%	75%
<u>CFO Characteristics</u>						
CFO Executive Director	15,547	0.739	1.000	0.438	0.000	1.000
CFO Relative Pay	15,547	0.521	0.552	0.540	0.000	0.714
CFO Top 3	15,547	0.656	1.000	0.474	0.000	1.000
CFO Seniority	15,547	47.122	47.000	6.952	42.000	52.000
CFO Outside Director	15,547	0.250	0.000	0.433	0.000	1.000
CFO Qualified Accountant	15,547	0.628	1.000	0.483	0.000	1.000
CFO Resistance	15,547	-0.003	0.961	1.971	-3.204	1.344
<u>Earnings Management Proxies</u>						
Modified Jones DA	12,011	0.146	0.060	0.274	0.025	0.139
Modified Jones DA (ROA-adjusted)	12,011	0.152	0.068	0.275	0.029	0.147
<u>Firm-level Controls</u>						
Firm Size	12,011	11.609	11.459	2.283	9.996	13.127
Leverage	12,011	0.176	0.131	0.200	0.005	0.273
Return-on-Assets (ROA)	12,011	0.002	0.091	0.373	-0.012	0.154
Market-to-Book	12,011	1.989	1.398	2.080	1.041	2.102
Cash Flow Volatility	12,011	0.113	0.052	0.243	0.029	0.100
Litigation Risk	12,011	0.136	0.000	0.343	0.000	0.000
<u>Governance Characteristics</u>						
Board Size	12,011	6.957	7.000	2.485	5.000	8.000
Board Independence	12,011	0.393	0.429	0.224	0.250	0.571
Audit Committee Size	12,011	2.870	3.000	1.085	2.000	3.000
Audit Comm. Independence	12,011	0.735	1.000	0.384	0.500	1.000
Audit Financial Expertise	12,011	0.399	0.000	0.490	0.000	1.000
Big 4	12,011	0.506	1.000	0.500	0.000	1.000
<u>CEO Characteristics</u>						
CEO Age (log)	12,011	3.923	3.932	0.148	3.829	4.025
CEO Tenure (log)	12,011	1.149	1.281	1.101	0.531	1.917
CEO Gender	12,011	0.973	1.000	0.162	1.000	1.000
CEO Financial Expertise	12,011	0.214	0.000	0.410	0.000	0.000
<u>CEO Power Proxies</u>						
CEO Ownership	12,011	0.050	0.011	0.103	0.003	0.042
CEO Pay Slice	12,011	0.301	0.282	0.123	0.230	0.335
CEO Duality (dummy)	12,011	0.265	0.000	0.441	0.000	1.000
CEO Relative Board (dummy)	12,011	0.047	0.000	0.441	0.000	1.000
CEO Power	12,011	1.219	1.000	0.826	1.000	2.000

Table 3
CFOs and Earnings Management

This table presents the results from several regressions on the relationship between discretionary accruals and the CFO resistance. In Models 1 and 2, we use ordinary least-squares (OLS) regression. In Model 3, Model 4 and Model 5 we control for firm fixed effects, CEO fixed effects and CFO fixed effects, respectively. In Model 6, we add CEO-specific characteristics. The dependent variable is discretionary accruals, computed using the modified Jones model, augmented with ROA (following Kothari et al., 2005). The CFO resistance variable is constructed after combining six CFO attributes using principal component analysis as discussed in Section 3. Analytical definitions for all variables are provided in the Appendix. Standard errors are robust to heteroscedasticity (reported in parentheses). ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
CFO Resistance	-0.021*** (0.002)	-0.008*** (0.002)	-0.011*** (0.003)	-0.013*** (0.003)	-0.014*** (0.003)	-0.008*** (0.002)
Firm Size	-	-0.014*** (0.002)	-0.019*** (0.006)	-0.019*** (0.007)	-0.022*** (0.007)	-0.014*** (0.002)
Market-to-Book	-	0.004*** (0.001)	0.002 (0.002)	0.003 (0.002)	0.003 (0.002)	0.005*** (0.001)
Leverage	-	0.023* (0.014)	0.008 (0.023)	-0.011 (0.027)	0.022 (0.026)	0.024* (0.014)
Return-on-Assets	-	-0.110*** (0.009)	-0.116*** (0.012)	-0.089*** (0.014)	-0.102*** (0.013)	-0.103*** (0.009)
Cash Flow Volatility	-	0.077*** (0.013)	0.033 (0.023)	0.018 (0.029)	0.016 (0.025)	0.072*** (0.013)
Litigation Risk	-	-0.130*** (0.012)	-	-0.304** (0.132)	-0.100 (0.067)	-0.126*** (0.012)
Board Size	-	0.003* (0.002)	0.002 (0.003)	0.003 (0.003)	0.002 (0.003)	0.004** (0.002)
Board Independence	-	0.038 (0.023)	0.103*** (0.037)	0.060 (0.044)	0.098** (0.041)	0.034 (0.024)
Audit Committee Size	-	-0.006** (0.003)	-0.009** (0.005)	-0.008 (0.006)	-0.008 (0.005)	-0.008** (0.003)
Audit Committee Independence	-	-0.046*** (0.013)	-0.057*** (0.020)	-0.062** (0.024)	-0.069*** (0.023)	-0.044*** (0.013)
Audit Financial Expertise	-	-0.005 (0.006)	-0.014 (0.009)	-0.016 (0.011)	-0.014 (0.011)	-0.008 (0.006)
Big4	-	-0.008 (0.006)	-0.019 (0.013)	-0.016 (0.016)	-0.009 (0.014)	-0.008 (0.006)
CEO Age	-	-	-	-	-	-0.453 (0.691)
CEO Age ²	-	-	-	-	-	0.059 (0.089)
CEO Tenure	-	-	-	-	-	-0.010*** (0.003)
CEO Gender	-	-	-	-	-	-0.033** (0.016)
CEO Financial Expertise	-	-	-	-	-	0.000 (0.006)
Intercept	0.340*** (0.023)	0.489*** (0.028)	0.389*** (0.077)	0.705*** (0.140)	0.480*** (0.096)	1.342 (1.345)
Observations	12,011	12,011	12,011	12,011	12,011	12,011
R ²	0.071	0.136	0.337	0.462	0.435	0.138
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	No	Yes	Yes	Yes
Firm Fixed Effects	No	No	Yes	No	No	No
CEO Fixed Effects	No	No	No	Yes	No	No
CFO Fixed Effects	No	No	No	No	Yes	No

Table 4
Instrumental Variable Estimations

This table presents the results of an IV estimation on the relationship between discretionary accruals and CFO resistance. We use the number of financial experts (NOFE) and CFO distress experience, as our potential instruments. NOFE is defined as the total number of financial experts (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. CFO distress experience is an indicator, which is equal to 1 if the CFO worked at a firm that filed for bankruptcy. The results of the first and second-stage regressions are presented in Models 1 and 2, respectively. The CFO resistance variable is constructed after combining six CFO attributes using principal component analysis as discussed in Section 3. The dependent variable in second-stage is discretionary accruals, computed using the modified Jones model, augmented with ROA (following Kothari et al., 2005). Standard errors are robust to heteroskedasticity (reported in parentheses). Analytical definitions for all variables are provided in the Appendix. *** and ** denote statistical significance at the 1% and 5% levels, respectively.

	First Stage Model 1	Second Stage Model 2
Predicted CFO Resistance	-	-0.006*
	-	(0.003)
Firm Size	-0.074***	-0.014***
	(0.011)	(0.002)
Market-to-Book	-0.015*	0.004**
	(0.008)	(0.002)
Leverage	0.111	0.023
	(0.084)	(0.017)
Return-on-Assets	0.117**	-0.110***
	(0.053)	(0.013)
Cash Flow Volatility	-0.374***	0.078***
	(0.080)	(0.022)
Litigation Risk	0.710***	-0.132***
	(0.071)	(0.016)
Board Size	-0.079***	0.003*
	(0.008)	(0.002)
Board Independence	-1.226***	0.041
	(0.125)	(0.027)
Audit Committee Size	0.122***	-0.007*
	(0.018)	(0.004)
Audit Committee Independence	1.052***	-0.048***
	(0.069)	(0.015)
Audit Financial Expertise	-0.160***	-0.005
	(0.032)	(0.006)
Big 4	0.340***	-0.009
	(0.031)	(0.006)
NOFE	0.552***	-
	(0.012)	-
CFO Distress Experience	0.222*	-
	(0.116)	-
Intercept	-0.563***	0.491***
	(0.147)	(0.030)
Observations	12,011	12,011
Centered R^2	0.341	0.135
Industry Fixed Effects	Yes	Yes
Year Fixed Effects	Yes	Yes
Kleinbergen-Paap rK Wald F -statistic (p-values)	1025.08 (0.000)	-
(Stock-Yogo critical values: 10%/15%)	(16.38/8.96)	
Hansen J -Statistic (p-values)	-	0.420 (0.516)
(over-identification test of all instr.)		

Table 5
Evidence From CFO Turnovers
(Difference-in-Difference Analysis)

Panel A 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 index is greater than the median CFO resistance across all firms in year t . Non-resistant CFO firms are those whose CFO resistance is lower than the median CFO resistance across all firms in year t . The CFO resistance is constructed after combining six CFO attributes using principal component analysis as discussed in Section 3. Absolute discretionary accruals are computed using the modified Jones model, augmented with ROA (following Kothari et al., 2005). The propensity score is estimated as a logit function of firm size, market-to-book ratio, leverage, return on assets, cash flow volatility, board size, audit committee expertise, audit committee independence, and audit committee size. Analytical definitions for all variables are provided in the Appendix. 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.

Non-Resistant to Resistant CFO Turnovers (Obs.= 536)			
	Mean Absolute DA	Difference	Robust s.e.
<i>Pre-Turnover Discretionary Accruals</i>			
Treatment Firms (non-resistant CFOs)	26.6%		
Control Firms (non-resistant CFOs)	22.8%	3.80%	0.75
<i>Post-Turnover Discretionary Accruals</i>			
Treatment Firms (resistant CFOs)	12.7%		
Control Firms (non-resistant CFOs)	19.1%	-6.40%**	0.033
Diff.-in-Diff. (Post minus Pre-turnover)		-10.30%*	0.060

Table 6

CEO Power and Earnings Management: The Moderating Effect of CFOs

This table presents the results from OLS regressions on the moderating effect of CFO resistance on the relationship between CEO power and earnings management. The dependent variable is discretionary accruals, computed using the modified Jones model, augmented with ROA (following Kothari et al., 2005). The CEO power is the sum of four categorical variables as discussed in Section 5. In Models 1 and 2, we use OLS regression. In Model 3, Model 4 and Model 5 we control for firm, CEO and CFO fixed effects, respectively. In Model 6, we add CEO-specific characteristics. The CFO resistance variable is constructed after combining six CFO attributes using principal component analysis as discussed in Section 3. Analytical definitions for all variables are provided in the Appendix. Standard errors are robust to heteroscedasticity (in parentheses). ***, **, and * denote statistical significance at the 1%, 5% and 10% levels, respectively.

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
CFO Resistance	-0.013*** (0.003)	-0.001 (0.003)	-0.005 (0.004)	-0.005 (0.004)	-0.008* (0.004)	-0.001 (0.003)
CEO Power	0.017*** (0.004)	0.006* (0.003)	0.004 (0.004)	0.007 (0.005)	0.006 (0.005)	0.008** (0.003)
CEO Power x CFO Resistance	-0.007*** (0.002)	-0.006*** (0.002)	-0.004** (0.002)	-0.006** (0.003)	-0.005** (0.002)	-0.006*** (0.002)
Firm Size	-	-0.013*** (0.002)	-0.018*** (0.006)	-0.019*** (0.007)	-0.022*** (0.007)	-0.014*** (0.002)
Market-to-Book	-	0.004*** (0.001)	0.002 (0.002)	0.003 (0.002)	0.003 (0.002)	0.005*** (0.001)
Leverage	-	0.023* (0.014)	0.009 (0.023)	-0.011 (0.027)	0.022 (0.026)	0.024* (0.014)
Return-on-Assets	-	-0.110*** (0.009)	-0.116*** (0.012)	-0.089*** (0.014)	-0.102*** (0.013)	-0.103*** (0.009)
Cash Flow Volatility	-	0.078*** (0.013)	0.032 (0.023)	0.019 (0.029)	0.015 (0.025)	0.072*** (0.013)
Litigation Risk	-	-0.132*** (0.012)	-	-0.317** (0.132)	-0.100 (0.067)	-0.128*** (0.012)
Board Size	-	0.003* (0.002)	0.002 (0.003)	0.003 (0.003)	0.002 (0.003)	0.004** (0.002)
Board Independence	-	0.042* (0.024)	0.103*** (0.037)	0.061 (0.044)	0.098** (0.041)	0.039 (0.024)
Audit Committee Size	-	-0.007** (0.003)	-0.010** (0.005)	-0.008 (0.005)	-0.008 (0.005)	-0.008** (0.003)
Audit Committee Independence	-	-0.048*** (0.013)	-0.058*** (0.020)	-0.063*** (0.024)	-0.070*** (0.023)	-0.047*** (0.013)
Audit Financial Expertise	-	-0.005 (0.006)	-0.014 (0.009)	-0.015 (0.011)	-0.014 (0.011)	-0.008 (0.006)
Big4	-	-0.009 (0.006)	-0.020 (0.013)	-0.016 (0.016)	-0.009 (0.014)	-0.008 (0.006)
CEO Age	-	-	-	-	-	-0.367 (0.693)
CEO Age ²	-	-	-	-	-	0.048 (0.089)
CEO Tenure	-	-	-	-	-	-0.011*** (0.003)
CEO Gender	-	-	-	-	-	-0.033** (0.016)
CEO Financial Expertise	-	-	-	-	-	0.000 (0.006)
Observations	12,011	12,011	12,011	12,011	12,011	12,011
R ²	0.073	0.137	0.338	0.463	0.436	0.139
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	No	Yes	Yes	Yes
Firm Fixed Effects	No	No	Yes	No	No	No
CEO Fixed Effects	No	No	No	Yes	No	No
CFO Fixed Effects	No	No	No	No	Yes	No

Table 7
CEO Power, CEO Incentives and Earnings Management

This table examines the effect of CFO resistance on the relationship between CEO power and discretionary accruals across firms with high (low) CEO incentives. In Panel A, we split firms into high (above median) and low (below median) CEO pay-for-performance sensitivity (measure of CEO equity incentives) groups. In Panel B, we split firms into early years and later years of CEO tenure (measure of CEO career incentives). CEO pay-for-performance sensitivity is computed using Bergstresser and Philippon's (2006) equity incentive ratio. Early years is an indicator variable that equals one for firm-years that correspond to the first three years of service of the firm's CEO, and is zero otherwise. The dependent variable is discretionary accruals, computed using the modified Jones model, augmented with ROA (following Kothari et al., 2005). The CFO resistance is constructed after combining six CFO attributes using principal component analysis as discussed in Section 3. The CEO power is the sum of four categorical variables as discussed in Section 5. Analytical definitions for all variables are provided in the Appendix. Standard errors are reported in parentheses. ***, **, and * denote statistical significance at the 1%, 5% and 10% levels, respectively.

Panel A: CEO Pay-for-Performance Sensitivity				
	High CEO Incentives <i>(Above Median)</i>		Low CEO Incentives <i>(Below Median)</i>	
CFO Resistance	-0.009*** (0.002)	0.006 (0.004)	-0.006*** (0.002)	-0.007* (0.003)
CEO Power	-	0.005 (0.005)	-	0.005 (0.005)
CFO Resistance x CEO Power	-	-0.011*** (0.003)	-	0.001 (0.003)
Observations	5,834	5,834	5,842	5,842
R^2	0.140	0.143	0.144	0.145
Firm-level Controls	Yes	Yes	Yes	Yes
Governance Controls	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Panel B: CEO Tenure (years in role)				
	High CEO Incentives <i>(Early Years)</i>		Low CEO Incentives <i>(Later Years)</i>	
CFO Resistance	-0.012*** (0.003)	-0.004 (0.004)	-0.005*** (0.002)	0.000 (0.003)
CEO Power	-	0.009 (0.006)	-	0.006 (0.004)
CFO Resistance x CEO Power	-	-0.008** (0.003)	-	-0.004** (0.002)
Observations	4,029	4,029	7,982	7,982
R^2	0.162	0.164	0.118	0.118
Firm-level Controls	Yes	Yes	Yes	Yes
Governance Controls	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes

Table 8
Evidence from Real Earnings Manipulations

This table presents the results on the relationship between CFO resistance and real earnings management. We use three proxies of real earnings management. 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 (following, Roychowdhury, 2006). We multiply RM_DISX by negative one so that the higher amount, the more likely it is that the firm is cutting discretionary expenses. RM_1 is the sum of RM_PROD and RM_DISX, which captures the total amount of real earnings management (following, Cohen and Zarowin, 2010). The CFO resistance variable is constructed after combining six CFO attributes using principal component analysis as discussed in Section 3. The CEO power is the sum of four categorical variables as discussed in Section 5. Analytical definitions for all variables are provided in the Appendix. Standard errors are robust to heteroscedasticity (reported in parentheses). ***, **, and * denote statistical significance at the 1%, 5% and 10% levels, respectively.

	RM_PROD			RM_DISX			RM_1		
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6			
CFO Resistance	-0.007*** (0.002)	-0.004 (0.003)	-0.000 (0.002)	0.004 (0.003)	-0.008*** (0.003)	-0.002 (0.005)			
CFO Power	-	-0.003 (0.004)	-	0.008** (0.004)	-	0.003 (0.006)			
CFO Resistance x CEO Power	-	-0.002 (0.002)	-	-0.004** (0.002)	-	-0.006* (0.003)			
Observations	12,011	12,011	12,011	12,011	12,011	12,011			
R ²	0.069	0.069	0.059	0.059	0.059	0.060			
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes			
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes			
Firm Controls	Yes	Yes	Yes	Yes	Yes	Yes			
Audit/Board Controls	Yes	Yes	Yes	Yes	Yes	Yes			

Table 9

CEO Power, CEO Incentives and Real Earnings Manipulations

This table examines the effect of CFO resistance on the relationship between CEO power and real earnings management across firms with high (low) CEO incentives. In Panel A, we split firms into high (above median) and low (below median) CEO pay-for-performance sensitivity (measure of CEO equity incentives) groups. In Panel B, we split firms into early years and later years of CEO tenure (measure of CEO career incentives). CEO pay-for-performance sensitivity is computed using Bergstresser and Philippon's (2006) equity incentive ratio. Early years is an indicator variable that equals one for firm-years that correspond to the first three years of service of the firm's CEO, and is zero otherwise. We use three proxies of real earnings management. 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 (following, Roychowdhury, 2006). We multiply RM_DISX by negative one so that the higher amount, the more likely it is that the firm is cutting discretionary expenses. RM_1 is the sum of RM_PROD and RM_DISX, which captures the total amount of real earnings management (following, Cohen and Zarowin, 2010). The CFO resistance variable is constructed after combining six CFO attributes using principal component analysis as discussed in Section 3. The CEO power is the sum of four categorical variables as discussed in Section 5. Analytical definitions for all variables are provided in the Appendix. Standard errors are robust to heteroscedasticity (reported in parentheses). ***, **, and * denote statistical significance at the 1%, 5% and 10% levels, respectively.

Panel A: CEO Pay-for-Performance Sensitivity

	RM_PROD			RM_DISX			RM_1		
	High CEO Incentives	Low CEO Incentives	Low CEO Incentives	High CEO Incentives	Low CEO Incentives	Low CEO Incentives	High CEO Incentives	Low CEO Incentives	
CFO Resistance	-0.008** (0.003)	-0.002 (0.003)	-0.002 (0.004)	-0.004* (0.003)	0.004 (0.005)	0.005* (0.003)	-0.013*** (0.004)	0.001 (0.004)	-0.002 (0.006)
CFO Power	-	-0.002 (0.006)	-0.008 (0.007)	-	0.012** (0.006)	-	0.006 (0.009)	-	-0.011 (0.009)
CFO Resistance x CEO Power	-	-0.002 (0.003)	-0.001 (0.003)	-	-0.006** (0.003)	-	-0.008* (0.004)	-	0.003 (0.005)
Observations	5,834	5,834	5,842	5,834	5,834	5,842	5,834	5,842	5,842
R ²	0.096	0.096	0.065	0.061	0.063	0.085	0.078	0.079	0.069

Panel B: CEO Tenure (years in role)

CFO Resistance	-0.008** (0.003)	-0.004 (0.003)	-0.002 (0.004)	0.004 (0.003)	0.007 (0.005)	-0.003 (0.002)	-0.008* (0.004)	0.001 (0.004)	-0.007** (0.004)	0.000 (0.006)
CFO Power	-	-0.005 (0.008)	0.001 (0.005)	-	0.001 (0.007)	-	-	0.012** (0.005)	-	0.009 (0.007)
CFO Resistance x CEO Power	-	-0.004 (0.004)	-0.001 (0.003)	-	-0.004 (0.003)	-	-	-0.004 (0.003)	-	-0.005 (0.004)
Observations	4,029	4,029	7,982	4,029	4,029	7,982	4,029	7,982	7,982	7,982
R ²	0.051	0.052	0.097	0.051	0.051	0.069	0.045	0.070	0.082	0.082

Table 10
Other Measures of Detecting Earnings Management

This table presents the results on the relationship between CFO resistance and alternative measures of earnings management. The dependent variable in Models 1-2 is meet or beat analysts' forecast (JUST_MEET_BEAT) and in Models 3-4 is the absolute values of discretionary revenues (ABS_DISC_REV). ABS_DISC_REV is the absolute residual of the [McNichols and Stubben \(2008\)](#) discretionary revenue model. JUST_MEET_BEAT is a dummy variable that equals to 1 if a firm's meet or just beat analysts' consensus forecast by one pence, and 0 otherwise. The CFO resistance variable is constructed after combining six CFO attributes using principal component analysis as discussed in Section 3. Analytical definitions for all variables are provided in the Appendix. Models 1-2 are estimated using logistic regressions and in Models 3-4, we use simple pooled OLS regressions. Standard errors are robust to heteroscedasticity (reported in parentheses). ***, **, and * denote statistical significance at the 1%, 5% and 10% levels, respectively.

	JUST_MEET_BEAT		ABS_DISC_REV	
	Model 1	Model 2	Model 3	Model 4
CFO Resistance	-0.051*** (0.017)	-0.035 (0.027)	-0.001*** (0.000)	-0.000 (0.001)
CFO Power	-	-0.044 (0.033)	-	0.005*** (0.001)
CFO Resistance x CEO Power	-	-0.014 (0.019)	-	-0.001* (0.000)
Observations	8,942	8,942	12,011	12,011
Year Fixed Effects	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes
Firm Controls	Yes	Yes	Yes	Yes
Audit/Board Controls	Yes	Yes	Yes	Yes