



# Reporting Concerns About Earnings Quality: An Examination of Corporate Managers

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## Abstract

Using an experiment with corporate financial managers (e.g., CFOs, controllers), we find that when red flags are present in the financial statements under their review, managers identify those red flags and, in turn, have greater concerns over earnings quality. In addition, when pressure to meet a financial target is high, managers are more concerned about earnings quality when red flags are present. We also document that when red flags are present, managers are more likely to report both internally to their CEO and, if their concerns are not resolved internally, externally to their auditor. Pressure to meet a financial target increases the likelihood managers report internally, but decreases their likelihood of reporting externally when red flags are present. Additional analyses document reporting differences between CFOs and controllers, and examine the important roles that short-term personal costs, job tenure, and a non-accounting background play in the ethical dilemma managers face when deciding whether to report externally.

**Keywords** Earnings management · Earnings quality · Ethical dilemma · Fraud · Red flags · Reporting · Whistleblowing

**JEL Classification** M40 · M41 · M48

## Introduction

Earnings management is a “phenomenon that ranges from legitimate managerial activities at one end of the spectrum to fraudulent financial reporting at the other” (POB 2000, p. 77). Dichev et al. (2013) demonstrate that Chief Financial Officers (CFOs) acknowledge that earnings management occurs, and that CFOs are able to list red flags that signal earnings management. Many of the red flags listed by the CFOs (e.g., high accruals) are also associated with incidences of extreme earnings management or fraudulent financial reporting (hereafter, “fraud”) (Dechow et al. 2011; Gullkvist and Jokipii 2013; Cassell et al. 2015; Beaudoin et al. 2015). Reporting concerns over unethical/illegal acts,

including financial statement fraud, is a global concern that has led standard setters across the world to take action to improve reporting (e.g., the Dodd-Frank Act in the U.S. and the Responding to Non-Compliance with Laws and Regulations Pronouncement issued by International Ethics Standards Board for Accountants) (Verschoor 2012; IFAC 2016). Given (1) CFOs are financial gatekeepers who possess knowledge of fraud red flags, and (2) it is possible for frauds to arise without the CFO’s initial involvement [e.g., at a division/regional level, directed by the CEO/prior CFO (Feng et al. 2011; ACFE 2018)], it is important to understand if and how these managers *react* to red flags in the financial statements their companies prepare for external parties.

While we are not aware of a definitive rate at which frauds do *not* initially emanate from the CFO, the Association of Certified Fraud Examiners (2018) reports that 70% of its cases of financial statement fraud were perpetrated *outside* the realm of executives/upper management (e.g., perpetrated in the Sales department). Beasley et al. (2010) find that, based on SEC enforcement releases, 35% of cases do *not* name the CFO as being associated with the fraud. Similarly, Feng et al. (2011, p. 21) observe that 40% of SEC

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enforcement releases do not name the CFO and conclude from their analyses “that CFOs are involved in material accounting manipulations because they succumb to pressure from CEOs.” High-profile frauds that emanated either above or below the CFO include Parmalat, Satyam, Xerox, Wells Fargo, Citigroup, Global Crossing, JDN Reality, Solectron, and Thor Industries. Another situation where fraud may not emanate from the CFO would be when a CFO is hired during the course of a multi-year fraud (e.g., HealthSouth, Livent). Indeed, CFOs note that a change in financial management is a signal of earnings management (Dichev et al. 2013) and Feng et al. (2011) observe that CFOs are apt to leave their companies prior to periods of accounting manipulation. Last, a fraud could emanate from an acquired company or prior to a merger (e.g., Cendant).

In this study, we explore a commonly occurring context where the CFO (“manager”) is reviewing consolidated financial statements prepared by a corporate controller. The task of preventing and detecting potential frauds in organizations lies with the company’s management team, and management review is a primary way in which frauds are detected (e.g., IAASB 2009; ACFE 2016). Consistent with Dyck et al. (2010), who find employees often play a key role in fraud detection, a recent study reports that employees are the source of over 50% of fraud tips (ACFE 2018). Still, there appears to be variation in the ways in which CFOs behave in fraud settings.<sup>1</sup> Consequently, it is important not only to understand whether managers are able to recognize the red flags that indicate a potential fraud, but also whether they are apt to respond to such risks by reporting concerns to the appropriate party(ies).

The objective of this study is to examine the influence of red flags and the pressure to meet an earnings target on the intention of managers, controllers, and CFOs to report earnings quality concerns. The managers participating in our study are primarily employed by private companies and are involved in the financial reporting process. We specifically investigate whether managers’ concerns over earnings quality increase when red flags are present in the financial statements under their review. We also examine whether managers *report* their concerns about the quality of earnings when confronted with red flags. When red flags are present, are managers inclined to report concerns internally within the company (e.g., to their CEO)? Subsequently, if their concerns are not resolved within the company, are they apt to report their concerns externally (e.g., to their external auditor)? Finally, if red flags are present in a scenario where the company faces pressure to meet a financial target, does

such pressure further increase managers’ concerns over earnings quality and/or impact the likelihood of reporting such concerns?

The research questions examined by this study are of international importance and are addressed using an experiment conducted with 204 corporate financial managers (e.g., CFOs, controllers, and other managers involved in the production of financial statements) from Italian companies. While much of the literature drawn upon for the motivation and development of our hypotheses focuses on the role of CFOs in the U.S. (e.g., Feng et al. 2011), our study can inform studies of CFO behavior in other countries which share similar concerns over the detection of financial statement fraud. Indeed, Callao and Jarne (2010) report that earnings management has intensified since the adoption of IFRS in Europe. Further, the reporting environment in many European countries shares many similarities with the reporting environment in the U.S.<sup>2</sup>

To our knowledge, we are the first study to engage corporate managers in an experiment that examines their reactions to red flags indicative of extreme earnings management and/or a potential fraud. As our participants are experienced managers involved with the production of their company’s financial statements, our participants have the requisite knowledge needed to understand the decisions they are asked to make in the experiment.

Prior research has identified multiple red flags that indicate an increased likelihood of earnings management and/or fraud (e.g., Beasley 1996; Dechow et al. 2011; Dichev et al. 2013; Gullkvist and Jokipii 2013). In addition, the CFOs in Dichev et al. (2013) list avoiding the violation of debt covenants as a pressure that motivates earnings management (see also Dechow et al. 1996; Graham et al. 2005). Informed by this literature, our experiment manipulates the presence of red flags in the financial statements (present or not present) and the pressure to meet a debt covenant (higher or lower).

Participants were asked to assume the role of CFO of a manufacturing company and to conduct a preliminary review of the company’s consolidated financial statements. They were also informed that the corporate controller (working directly under them) was primarily responsible

<sup>1</sup> There are several noteworthy examples from practice that highlight the various issues that CFOs face when discovering and reporting fraud (e.g., Segarra 2014; McCann 2017).

<sup>2</sup> In regard to the reporting environment, Italy has enacted whistleblower protection legislation with features that are consistent with that of other countries. For example, similar to requirements mandated by the U.S. Sarbanes–Oxley Act of 2002, Italian publicly traded companies that want to receive a positive assessment of their internal control systems are required to adopt whistleblowing processes that allow employees to report irregularities or violations anonymously. Similarities also exist between Italy and other countries in regard to earnings management. Burgstahler et al. (2006) and Van Tendeloo and Vanstraelen (2008) provide insights into earnings management in European firms, and Leoni and Florio (2015) provide a comparison of the U.S. and Italian earnings management literatures.

for preparing the financial statements. Following the case information, participants were asked questions about the financial statements they reviewed and the actions they would take based on their review. Finally, participants responded to demographic questions.

We find that when red flags are present, managers identify those red flags and, in turn, have greater concerns over earnings quality. When pressure to meet a debt covenant is higher (vs. lower), we observe that managers are more concerned about earnings quality when reviewing financial statements exhibiting red flags. This finding is consistent with the idea that pressure to meet financial targets is a root cause of fraud (e.g., the fraud triangle (Cressey 1953)) and managed earnings (Dichev et al. 2013). We also document that when red flags are present, managers are more likely to report both internally to their CEO and, if their concerns are not resolved internally, externally to their auditor. Pressure to meet a financial target increases the likelihood that managers report internally, but *decreases* their likelihood of reporting externally when red flags are present. When red flags are present and pressure is high, we observe only a moderate likelihood that managers will report concerns to an external party after internal channels are exhausted. Even in extreme conditions, managers are hesitant to blow the whistle externally.

To investigate potential differences in responses from participants who were currently in the roles of CFO versus controller in practice, additional exploratory analyses document reporting differences between CFOs and controllers. Specifically, we observe that while both CFOs and controllers are apt to identify and be concerned by the presence of fraud red flags, greater pressure to meet a financial target decreased (*increased*) the likelihood that CFOs (*controllers*) reported externally. We also examine the important roles that short-term personal costs, job tenure, and a non-accounting background play in the ethical dilemma managers face when deciding whether to report externally. When pressure is high and red flags are present, we find that managers perceive a substantial short-term cost to their career if they are somehow deemed responsible for an adjustment to earnings. As such, they are less likely to report their earnings quality concerns externally. We do *not* find that the long-term costs of *not* reporting (long-term career and litigation concerns) impact the decision to report externally. Our study also provides initial evidence that corporate managers with a longer tenure at their position (*public accounting background*) are less (*more*) likely to report externally. Last, we examine alternative reporting outlets and illustrate that sharing concerns with the CEO is the only reporting channel in which managers were more likely to report when pressure was higher versus lower. For all other reporting channels (e.g., whistleblower hotline), managers were more hesitant to

report when pressure was higher, consistent with the costs of reporting externally increasing as pressure increases.

We believe our study makes several meaningful contributions to the literature in the important areas of fraudulent financial reporting, the identification of fraud red flags by corporate managers, and the processes of reporting concerns both internally and externally (i.e., whistleblowing). First, while we know prescriptively what CFOs/corporate financial managers *should do* in light of red flags and financial pressure, we have little evidence demonstrating what they are inclined to *actually do*. Anecdotally, we observe that some managers report internally and then externally if their concerns are not resolved, but others are not willing to report externally regardless of the outcome of those internal conversations (e.g., Segarra 2014; McCann 2017)). Second, by examining the context we use in this study, we are able to further examine situations in which managers may not act as we would hope (i.e., in line with regulations and policies). We collect and analyze additional data to examine why managers may stop short of reporting externally—namely the short-term career costs associated with reporting.

Third, CFOs may have the ability to take direct corrective action in some cases where wrongdoing is suspected (e.g., they may be able to go to subordinates and require correction to financial reports)—an action that may not be available to a subordinate. As such, we explore various reporting channels, both internal and external, to determine which channels are most likely used by managers. Fourth, we also delve into different types of managers and experiences in order to compare and contrast how certain managers may react to red flags and pressure and observe several interesting similarities and differences. Finally, the majority of whistleblower studies examine situations where the whistleblower is a subordinate to the person committing the illegal act (e.g., Taylor and Curtis 2010; Robinson et al. 2012; Pope and Lee 2013). We contribute to our understanding of whistleblower behavior by examining the under-researched setting where the potential whistleblower is a *superior* to those that may have committed fraudulent acts.

This paper is organized as follows: the next section provides the theory and hypotheses, followed by descriptions of the research method, our tests of hypotheses, and additional exploratory analyses. The final section concludes the paper.

## Theory and Hypotheses

### Recognizing the Signs of Earnings Management

The task of preventing and detecting misstatements in the financial statements lies with company management (e.g., PCAOB 2015). CFO-level managers are financial gatekeepers and oversee the financial reporting process. These

managers typically review the financial reporting package for reasonableness and accuracy (Feng et al. 2011). Given the breadth of knowledge necessary to fulfill their responsibilities, these managers often have a background in finance or accounting and/or a strong working knowledge of operations (Dichev et al. 2013). Since frauds often arise without the CFO's initial involvement (e.g., Parmalat, Satyam, Xerox), it is important to understand if, and to what extent, these managers *react* to the presence of fraud red flags in their company's financial statements. In order to detect earnings management or fraud in financial statements, managers must first be able to recognize the signs (Gullkvist and Jokipii 2013).

In a survey of CFOs, Dichev et al. (2013) asked the managers to list red flags that may be present when a company is misrepresenting their reported performance. Although Dichev et al. (2013) specifically *excluded* the examination of fraudulent financial reporting, many of the red flags identified by the CFOs in the survey (e.g., high accruals, build-up of receivables) are also associated with incidences of fraudulent financial reporting (e.g., Dechow et al. 2011).

While Dichev et al. (2013) describe the challenge of isolating red flags that effectively signal earnings management, they did not *test* whether managers are able to identify red flags during the course of their review of the financial reporting package. Recent research has found that other players in the financial reporting process are *not apt to detect such red flags*. For example, auditors often fail to identify red flags when performing their testing, and investors do not divest in companies exhibiting multiple red flags (Brazel et al. 2014, 2018). Both studies also observe that tools that make fraud red flags more transparent enhance auditor and investor reactions to red flags. It is possible that CFOs require such tools as well to effectively identify red flags.

Still, given the expertise required to assume a financial management role and CFOs' reported knowledge vis-à-vis red flags (Dichev et al. 2013), it is reasonable to expect that managers would be sensitive to red flags indicative of extreme earnings management. Indeed, the Committee of Sponsoring Organizations of the Treadway Commission's (COSO's) Internal Control—Integrated Framework has assessing fraud risk as its eighth principle.<sup>3</sup> As such, we predict that managers will have greater concerns over earnings quality when red flags are present.

When the pressure to meet a financial target (e.g., debt covenant ratio, earnings forecast) is higher, the aforementioned positive relation between the presence of red flags and earnings quality concerns may be more acute. Meeting financial targets is of great concern to managers, as

evidenced by the negative market reaction to misses, managers' preferences to sacrifice long-term value to reach targets, and fear of creditor interference due to debt covenant violations (e.g., Graham et al. 2005; Burgstahler et al. 2006). A mature stream of literature in accounting documents the importance and regular occurrence of firms "meeting or just beating" financial targets (e.g., Burgstahler and Eames 2006). Because pressure to meet financial targets has also been identified as a root cause of both fraud (e.g., the fraud triangle (Cressey 1953)) and managed earnings (Dichev et al. 2013), managers may be more inclined to believe earnings management has occurred if red flags accompany a target *just* being met (Dechow et al. 1996; Graham et al. 2005; Dichev et al. 2013). Consistent with the theory of motivated reasoning, managers may be able to rationalize red flags away in *low*-pressure settings (as doing so aligns with their incentives) (e.g., Kunda 1990). However, motivated reasoning only works when subjectivity enables such rationalizations. Greater pressure to meet a financial target may act as a constraint to such motivated reasoning, forcing managers to acknowledge the possibility that the red flags indicate earnings management in high-pressure settings.

Thus, we expect that when pressure is higher, managers will be more concerned about earnings quality when reviewing financial statements exhibiting red flags. Hypotheses 1a and 1b, stated formally, are as follows:

**H1a** Managers have greater concerns over earnings quality when red flags are present (vs. not present).

**H1b** The positive effect of red flags on managers' concerns over earnings quality is stronger when the pressure to meet a financial target is higher (vs. lower).

### Reporting Concerns over Earnings Quality—Internally and Externally

Once red flags are detected in the financial statements, the manager must then decide whether or not to act on his/her concerns. According to Schultz et al. (1993), the willingness of individuals to report concerns over earnings quality is dependent upon the perceived seriousness of the irregularity, personal responsibility for reporting concerns, and personal costs of reporting. Managers in a CFO-level position understand the gravity or seriousness of misrepresentations of financial statement information. Hennes et al. (2008) demonstrate that the turnover rate for CFOs involved in a restatement over an accounting irregularity is 85 percent. Feng et al. (2011) describe how CFOs bear substantial legal costs when involved in material accounting manipulations. Thus, if red flags indicative of a potential fraud are present in the financial statements they are reviewing, CFOs should perceive this to be a serious irregularity.

<sup>3</sup> <https://www.coso.org/Documents/COSO-Fraud-Risk-Management-Guide-Executive-Summary.pdf>.



As discussed above, the financial statements typically fall within the purview of the corporate financial manager/CFO, which should ensure a high level of personal responsibility for reporting concerns over earnings quality (Feng et al. 2011). As such, when red flags are present in financial statements, this should result in both the *seriousness* and *personal responsibility* factors being high. In other words, the likelihood that the manager reports his/her concerns should increase. However, the *personal costs* associated with managers' reporting concerns may be more complex, as these costs often pose an ethical dilemma for the manager.

Those reporting concerns over fraud are most likely to convey their concerns internally to their direct supervisor (Schultz et al. 1993; ACFE 2016; IFAC 2016). However, the CFO has an incentive to *not* report concerns internally to their CEO. Given the responsibility the CFO has in leading the financial reporting process, the CEO may view earnings quality issues as a failure of some sort in the system the CFO manages (Feng et al. 2011). Nevertheless, a bigger or more costly risk to the CFO would be that a material misstatement in the financial statements is later discovered and comes as a surprise to their CEO. Indeed, the market's reaction to restatements is often significantly negative (Myers et al. 2013).

By sharing their concerns with the CEO, which follows established lines of communication and authority, managers are able to keep the CEO apprised of the situation and may even view doing so as a shift in responsibility. In addition, the CEO carries with him/her the same pressure to meet financial targets, but also produce reliable financial statements. As a result, when red flags are present, reporting concerns to the CEO may reduce the personal costs incurred by the CFO. Consequently, we predict that the presence of red flags results in managers being more likely to raise concerns internally to the CEO.

The motivation to report concerns to the CEO may be particularly acute when the pressure to meet a financial target is high and, in turn, the stakes are greater. Although market reactions to restatements are typically negative (e.g., Myers et al. 2013), a subsequent restatement that causes the company to miss a previously met financial target would likely compound this effect. If misstatements are later identified that coincide with just meeting a financial target, it is likely that the misstatements could be viewed as *intentional* by financial statement users, regulators, and jurors (vs. as a result of error) (Graham et al. 2005). The CFO is the leader of the accounting function (IFAC 2013) and company insurance policies do not cover firm management when courts find the firm guilty of fraud (Dyck et al. 2010). Thus, the personal costs to the manager of *not* reporting earnings quality concerns internally are even higher when there is pressure to meet a financial target. As a result, in higher-pressure settings, we expect that managers who observe red flags will

be even more likely to raise concerns to the CEO. Hypotheses 2a and 2b, stated formally, are as follows:

**H2a** Managers are more likely to report concerns over earnings quality internally when red flags are present (vs. not present).

**H2b** The positive effect of red flags on managers reporting concerns internally is stronger when the pressure to meet a financial target is higher (vs. lower).

If a manager raises concerns over earnings quality inside the company and those concerns are not adequately resolved, the manager must then decide whether or not to report the concerns externally. Managers are likely to consider external control mechanisms when internal parties fail to respond to their earnings quality concerns (Dyck et al. 2010). However, the dynamics of the *personal costs* to the manager change and an ethical dilemma arises when reporting to external parties (e.g., the external auditor) versus internally to the CEO.<sup>4</sup>

When reporting concerns internally to the CEO, the financial reporting incentives of the manager are typically aligned with the CEO. As a result, reporting concerns to the CEO is more likely to be an open dialogue about whether or not adjustments need to be made to correct for any misrepresentation. Conversely, if the manager's concerns regarding earnings quality are valid, external parties are more independent of the company's financial performance and tend to care much less about the company meeting financial targets. If the financial statements are misstated, reporting to an external party like the auditor is more likely to lead to adjustments that correct the earnings management (Nelson et al. 2003). Kinney and Martin (1994) observe that such adjustments typically decrease reported earnings. Thus, if a manager reports earnings quality concerns to an external party, there are additional personal costs to consider. For example, the social costs and retaliation faced by employees that blow the whistle externally are significant and well documented (e.g., Jos et al. 1989; Carson et al. 2008; Miceli et al. 2009). Dyck et al. (2010) note that the personal consequences for

<sup>4</sup> Extant research suggests that managers are more apt to report concerns internally over externally (e.g., Robertson et al. 2011; Brink et al. 2013). Consistent with this notion, demographic data from our participants (presented in Table 1 and discussed in the Participants section) illustrate a strong preference for reporting internally vs. externally. Given this preference, we designed our experiment such that participants chose to report internally first and then considered reporting externally only after "inside the company nothing was done in response to your concern." We believe this design choice reflects the decision-making process managers would employ in practice.

managers who blow the whistle on fraud include termination, poor job prospects, and threats/intimidation.

Still, *not* reporting concerns externally when red flags are present could also yield negative outcomes or personal costs to managers. If red flags are present after internal efforts have been exhausted, earnings quality issues may be subsequently discovered. In such settings, managers could suffer substantial repercussions both professionally and personally. For example, the managers who expressed accounting concerns internally in high-profile frauds like Enron faced federal indictments *because they did not subsequently report externally* when their concerns were not placated (Scannel and Latour 2004). As Dyck et al. (2010) note, avoiding legal liabilities arising from being associated with a fraud is a substantial factor that causes employees to express concerns externally.

In addition, anecdotal evidence from high-profile fraud cases suggests that it is not uncommon for the CEO to direct financial statement frauds (e.g., Satyam, Parmalat (Melis 2005; Soltani 2014)), and these frauds are likely to be perpetrated by accounting department staff (e.g., Feng et al. 2011; ACFE 2014). Feng et al. (2011) find that CEOs with higher compensation incentives and power typically drive and orchestrate accounting manipulations. As such, it is possible for the CFO (or other corporate financial managers) to be caught *between* the director(s) and perpetrator(s) of a financial statement fraud. An inadequate internal response may indicate CEO involvement and should increase the sense of personal responsibility in the manager. As such, when red flags are present, we expect that managers will be more likely to report concerns over earnings quality externally if the CEO is made aware of the situation and does not act. Hypothesis 3a, stated formally, is as follows:

**H3a** If concerns over earnings quality are not adequately resolved inside the company, managers are more likely to report their concerns externally when red flags are present (vs. not present).

The degree of pressure faced by managers or the margin for error in meeting a financial target may also impact the likelihood that managers report externally. In terms of reporting earnings quality concerns internally, as mentioned above, the manager and CEO's financial reporting incentives are aligned (i.e., both are motivated to meet financial targets). This, combined with evidence that executives are often willing to be creative and use the discretionary piece of earnings to meet targets (Dichev et al. 2013), suggests that sharing concerns with the CEO in high-pressure situations may allow the manager to not only resolve the earnings quality issue, but to do so without missing any targets. Indeed, "the market believes that most firms can "find the money" to hit earnings targets" (Graham et al. 2005, p. 5).

When reporting externally (e.g., to the external auditor), however, the manager is increasing the likelihood that any earnings management is not only detected but also adjusted (Nelson et al. 2003). Accordingly, there may be more significant personal costs involved in reporting externally when the company is facing a high level of financial reporting pressure. In a high-pressure setting, adjustments to the financial statements that stem from reporting externally may cause the company to *not* meet a financial target. For example, an adjustment to the financial statements could lead to a violation of a debt covenant that causes the bank to call a loan and the external auditor to issue a going concern opinion (DeFond and Jiambalvo 1994). A negative earnings surprise can lead to costly turmoil in equity markets as well (Graham et al. 2005). In such cases, multiple stakeholders would be affected, likely resulting in a severe backlash against the manager. Dyck et al. (2010) report that in 82 percent of cases where an employee blew the whistle on a fraud, the employee claims they were fired, subsequently quit due to duress, or had their job responsibilities significantly altered.

Thus, higher-pressure situations often impose an ethical dilemma as managers face countervailing personal costs. If a manager reports their concerns externally, they are likely to cause a negative adjustment to earnings and harm their career in the short-term. On the other hand, if they *do not report externally* and an issue becomes known later, they may face long-term personal costs and legal liabilities. Again, misstatements identified later that coincide with just meeting a financial target are likely to be viewed as intentional by financial statement users, regulators, and jurors. Consequently, given the countervailing personal costs, it is unclear whether pressure to meet a financial target will affect the positive relation between the presence of the red flags and the decision to report concerns externally. Thus, we pose the following research question:

**RQ** Is the positive effect of red flags on managers reporting concerns externally affected by the pressure to meet a financial target?

## Method

### Participants

Two hundred and four corporate managers completed an online experimental instrument for this study. To obtain our sample of participants, we first contacted 1052 privately held and publicly traded Italian companies obtained from Aida - Bureau Van Dijk, a database of public and private Italian companies, as well as from corporate contacts developed by one of this study's investigators. We contacted a

management representative from each company directly and 951 companies agreed to participate in the study.

For companies that agreed to participate, we obtained names and email addresses for corporate managers in the accounting and corporate finance areas. We targeted CFOs first, and, if no response was obtained, we contacted controllers and other-related corporate managers. Managers were contacted via email and provided with a link to the online research instrument (described below). There were up to three follow-up emails to encourage participation. Two hundred and twenty managers began the instrument, 14 of those managers did not complete the instrument, and we removed two observations from the same participant, leaving a sample of 204 managers. Our response rate of 19.4% (204/1052) is greater than the response rates of prior studies that have engaged corporate managers in the areas of accounting and corporate finance (e.g., Graham et al. 2005; Dichev et al. 2013; Evans et al. 2015). Given our success in obtaining these managers as participants in our study, we provide additional details regarding our recruiting method in “Appendix A.”<sup>5</sup>

Table 1 provides demographic data for our participants and their companies. We have an experienced set of participants, with 38.73% and 27.45% being CFOs and controllers, respectively. Participants have, on average, 10–19 years of experience at their job, are between 40 and 49 years of age, and hold an undergraduate degree.<sup>6</sup> Given their management positions, and consistent with our discussion above, 100% of our participants are involved with the production of financial statements and 83.82% are in some manner responsible for their companies’ financial statements. Our participants are also apt to search for red flags when reviewing their company’s financial statements (see Variable 5 in Table 1 with an average response of 5.28 out of 7).

Participants reported being highly likely to report red flags internally to a superior, with an average response of 6.33 out of 7 (Variable 6) and a relatively low standard deviation of 1.04. This is indicative of substantial consensus amongst managers to report concerns internally to a superior. On the other hand, these managers are less likely to report concerns to a whistleblower hotline or someone external to the company, with average responses (standard deviations) of 3.91 (2.36) and 4.22 (2.27), respectively (Variables 7 and 8). These responses are consistent with

Taylor and Curtis (2010) and Brink et al. (2013), who find that employees are more likely to report concerns over earnings quality internally (vs. externally). Note also that the standard deviations for reporting via a hotline or externally are more than twice the magnitude of reporting internally, indicating *less* consensus amongst managers regarding these two reporting options. This lack of consensus may reflect the countervailing personal costs of reporting externally, as noted previously.

Participants’ companies have, on average, between \$100 and \$499 million in total sales, and between 25 and 50% of total sales are foreign sales (Variables 13 and 14, respectively). Consistent with the Italian economy being dominated by privately held companies, 81.86% of our participants work for privately held companies (Variable 15).<sup>7</sup> The mean company age is 41.83 years and the most common industries are manufacturing, service/consulting, and retail/wholesale (Variables 16–19, respectively). Finally, 65.33% of the participants’ companies were audited by an international accounting firm (vs. an Italian accounting firm) (Variable 22).<sup>8</sup>

<sup>7</sup> Burgstahler et al. (2006) document that, within the European Union, private companies are much more prevalent than public companies and private companies exhibit higher levels of earnings management. In Italy, approximately 360 companies are publicly listed (<http://www.borsaitaliana.it/homepage/homepage.htm>), 7500 companies are owned by the State (<http://www.panorama.it/economia/aziende/aziende-pubbliche-quanto-costano-stato>), and 5.3 million companies are privately owned ([http://www.digital4.biz/pmi/appfondimenti/quasi-53-milioni-le-imprese-in-italia\\_4367215623.htm](http://www.digital4.biz/pmi/appfondimenti/quasi-53-milioni-le-imprese-in-italia_4367215623.htm)). We acknowledge that private company managers do not face the pressures associated with widely dispersed investors, which may affect their willingness to report red flags (e.g., the market reaction to restatements is not as forefront in their minds as it would be for managers of publicly traded companies). To investigate differences between private and public company participants, we compare the responses provided by private and public company managers in our most extreme condition (PRESSURE high and RED FLAGS present or Condition 4 as described in Figure 1 and Table 3). Mean responses for CONCERN, INTERNALLY, and EXTERNALLY are not significantly different ( $p$ 's > .05) between private and public company managers.

<sup>8</sup> Given that our study extends the work of Dichev et al. (2013), we compare our demographic data in Table 1 to that obtained from the survey participants in Dichev et al. (2013) who worked for private U.S. companies (see Table 1 in Dichev et al. (2013), where 54.93% of participants worked for a private company). Like our sample, the private company CFOs in Dichev et al. (2013) are most likely managing a manufacturing company with between \$100–\$499 million in sales. As one would expect, given that Italy is a smaller market than the U.S., our participants report a higher proportion of foreign sales. Our participants are also slightly younger, but have greater experience in their position. Last, the percentage of our participants with a public accounting background (41.32%) is very similar to the 41.26% observed by Dichev et al. (2013).

<sup>5</sup> For the initial sample of 951 companies, 132 were public (13.88%; 132/951), while 819 were private (86.12%; 819/951). The final sample of 204 companies consisted of 37 public companies (18.14%; 37/204) and 167 private companies (81.86%; 167/204).

<sup>6</sup> According to a 2010 EY survey of 669 CFOs from Europe, the Middle East, India, and Africa, only 27% had obtained the MBA degree ([http://www.ey.com/Publication/vwLUAssets/Estudio\\_DNA\\_CFOs\\_2010/\\$FILE/DNA\\_CFOs\\_2.pdf](http://www.ey.com/Publication/vwLUAssets/Estudio_DNA_CFOs_2010/$FILE/DNA_CFOs_2.pdf)).

**Table 1** Demographic data

Variables	Response [n=204] Mean (SD)
<b>Participant variables</b>	
1. % CFO	38.73
2. % Controller	27.45
3. % Involved with the production of financial statements	100.00
4. % Responsible for the financial statements	83.82
5. Search for red flags	5.28 (1.80)
6. Report internally to a superior	6.33 (1.04)
7. Report anonymously to whistleblower hotline	3.91 (2.36)
8. Report externally	4.22 (2.27)
9. Experience at position	2.76 (.86)
10. Age	1.57 (.713)
11. Education	2.98 (.74)
12. % Background in public accounting	41.32
<b>Company variables</b>	
13. Sales	2.58 (1.70)
14. Foreign sales	2.55 (1.16)
15. % Privately held	81.86
16. Company age	41.83 (34.57)
17. % Manufacturing industry	20.59
18. % Service/Consulting industry	12.25
19. % Retail/Wholesale industry	9.80
20. % Other industry	35.31
21. % Did not provide industry	22.05
22. % Audited by an international accounting firm	65.33

1. % **CFO** Coded 1 if the participant inputted their job title as chief financial officer, 0 otherwise

2. % **Controller** Coded 1 if the participant inputted their job title as controller, 0 otherwise

3. % **Involved with the production of financial statements** As part of your current job, are you in anyway involved with producing your company's financial statements? Coded 1 if the participant responded yes, 0 otherwise

4. % **Responsible for the financial statements** As part of your current job, are you in anyway responsible for your company's financial statements? Coded 1 if the participant responded yes, 0 otherwise

5. **Search for red flags** When you review the financial statements of your company, to what extent do you search for red flags related to fraud? Measured via a scale where 1 = "Never" and 7 = "Always."

6. **Report internally to a superior** If you identified a fraud red flag while reviewing your company's financial statements, what would be the likelihood you would discuss the fraud red flag with your boss at your company? Measured via a scale where 1 = "Low Likelihood" and 7 = "High Likelihood."

7. **Report anonymously to whistleblower hotline** If you identified a red flag while reviewing your company's financial statements and your company was not responsive to your concern, what would be the likelihood you would report the red flag to your company's anonymous whistleblower hotline? Measured via a scale where 1 = "Low Likelihood" and 7 = "High Likelihood."

8. **Report externally** If you identified a red flag while reviewing your company's financial statements and your company was not responsive

**Table 1** (continued)

to your concern, what would be the likelihood you would discuss the red flag with someone outside your company (e.g., external auditor)? Measured via a scale where 1 = "Low Likelihood" and 7 = "High Likelihood."

9. **Experience at position** Your time in job. Measured via a scale where 1 = "< 4 years" and 4 = "≥ 20 years"

10. **Age** Your age. Measured via a scale where 1 = "< 40" and 4 = "≥ 60 years"

11. **Education** Your education. Measured via a scale where 1 = "High school" and 5 = "non-MBA masters"

12. % **Background in public accounting** Coded 1 if the participant indicated that their background was in public accounting, 0 otherwise

13. **Sales** Sales revenue. Measured via a scale where 1 = "Less than \$25 million" and 7 = "More than \$10 billion"

14. **Foreign sales** Proportion of foreign sales at your company. Measured via a scale where 1 = "0%" and 4 = "≥ 50"

15. % **Privately held** Is the company you currently work for privately held or publicly traded? Coded 1 if the participant responded privately held, 0 otherwise

16. **Company age** Company age in years inputted by participant

17. % **Manufacturing industry** Coded 1 if the participant indicated the company was in the manufacturing industry, 0 otherwise

18. % **Service/Consulting industry** Coded 1 if the participant indicated the company was in the Service/Consulting industry, 0 otherwise

19. % **Retail/Wholesale industry** Coded 1 if the participant indicated the company was in the Retail/Wholesale industry, 0 otherwise

20. % **Other industry** Coded 1 if the participant indicated the company was in an industry other than Manufacturing, Service/Consulting, or Retail/Wholesale, 0 otherwise

21. % **Did not provide industry** Coded 1 if the participant did not provide a company industry, 0 otherwise

22. % **Audited by an international accounting firm** Is your company's auditor an international accounting firm (e.g., KPMG) or an Italian accounting firm. Coded 1 if participant responded international firm, 0 otherwise

## Description of the Experimental Context

The experimental materials placed participants in the position of CFO of a hypothetical company named Tecno Sporting Goods, a manufacturer of sporting goods equipment consisting of four divisions. Their task was to perform a preliminary, top-level review of Tecno Sporting Goods' consolidated, year-end financial condition. Participants learned that Tecno's main financing came in the form of loans from First National Bank and that the bank required audited financial statements annually. Tecno's debt covenant with First National Bank required that they meet several financial ratios. Participants were informed that if there was a debt covenant violation, the bank had the right to require that all future payments under the loans be due immediately. The materials also provided participants with additional information about Tecno and its industry, including product and customer information, industry sales, and highlights from a



**Table 2** Description of the study's four experimental conditions

	RED FLAGS not present	RED FLAGS present
PRESSURE low	<p><u>Condition 1</u> Accrual red flag <b>not present</b> NFM red flag <b>not present</b> Ratio for percent return on assets <b>easily exceeds</b> the required ratio as stated in the debt covenant</p>	<p><u>Condition 3</u> Accrual red flag <b>present</b> NFM red flag <b>present</b> Ratio for percent return on assets <b>easily exceeds</b> the required ratio as stated in the debt covenant</p>
PRESSURE high	<p><u>Condition 2</u> Accrual red flag <b>not present</b> NFM red flag <b>not present</b> Ratio for percent return on assets <b>just barely meets</b> the required ratio as stated in the debt covenant</p>	<p><u>Condition 4</u> Accrual red flag <b>present</b> NFM red flag <b>present</b> Ratio for percent return on assets <b>just barely meets</b> the required ratio as stated in the debt covenant</p>

recent business news article. These materials were held constant across experimental treatments and served the purpose of providing background context.

Participants were also told the following:

Tecno Sporting Goods consists of four divisions that are consolidated for financial reporting purposes. Each division has a controller in charge of preparing the division's financial statements. The corporate controller (who works directly under you) is in charge of consolidating the divisions' financial statements into one set of financial statements for Tecno Sporting Goods. Your corporate controller is primarily responsible for preparing Tecno Sporting Goods' consolidated financial statements.

Participants were informed that, in order to perform their top-level review of Tecno's financial condition, they asked their corporate controller for: (1) preliminary 20XX Tecno consolidated financial statements (along with comparative financial statements from the two prior years), (2) financial ratio calculations, and (3) important non-financial data for Tecno (e.g., employee headcounts, number of patents).<sup>9</sup>

<sup>9</sup> The experimental instrument was provided online and in Italian, the native language of the participants. The instrument was first developed in English. To develop the Italian version of the instrument, we followed the translation-back procedures outlined by Brislin (1986). Specifically, in the first stage, the experimental instrument was translated from English to Italian by one of the authors who is fluent in both languages. Then, another independent academic translated the Italian version back to English (back-translated English version). The original and back-translated English versions were then compared, and all discrepancies resolved by the translators. In a second stage, to assure that the material would be realistic and understood by respondents, the instrument was carefully pre-tested. First, the instrument was reviewed by Italian academic scholars to assess the clarity of the instrument. Afterwards, a pilot study was also conducted with a group of accounting managers from three Italian companies (with their input being incorporated into the instrument). Finally, the final instrument was reviewed once more by a panel of three Italian academic scholars.

## Independent Variables

The experiment manipulated two variables between subjects, each at two levels, resulting in four experimental conditions. Table 2 illustrates the four experimental conditions. The first manipulated variable was the presence of red flags, manipulated as red flags either being present or not present in the current year financial statements under review (RED FLAGS).

Dichev et al.'s (2013) surveys and interviews of CFOs suggest that companies managing earnings typically exhibit *multiple* red flags (e.g., Table 14 of Dichev et al. (2013) lists 20 red flags, each identified by multiple CFOs). Prior research studies related to fraud have also concluded that fraud firms typically exhibit *multiple* red flags prior to detection (e.g., Hogan et al. 2008). As such, we manipulate multiple (two) red flags at levels of both fraud and non-fraud companies for our RED FLAGS present and not present conditions, respectively.

The CFOs in Dichev et al. (2013) most frequently cited earnings that are inconsistent with cash flows (i.e., high accruals) as a red flag for earnings management. Thus, the first red flag we manipulate is the accrual red flag. The accrual red flag is manipulated as present or not present, based upon the findings of Lee et al. (1999) and Brazel et al. (2009). For the RED FLAGS present (*not present*) condition, accruals represented 11% (1%) of total assets. We manipulated the level of positive accruals, as net income exceeded cash flow from operations in both conditions.

Companies managing earnings are often referred to as companies that misrepresent their economic performance or the results of operations (e.g., Dichev et al. 2013). Companies disclose non-financial measures ("NFM," such as number of patents, production space, and employee headcount) that reflect key aspects of performance/operations and represent measures of economic activity (Francis et al. 2003; Schultz et al. 2010). Both Brazel et al. (2009) and

Dechow et al. (2011) document that fraud firms exhibit substantial differences between growth in their reported financial measures (e.g., revenue growth) and growth in related NFM. Thus, the second red flag we manipulate is the NFM red flag. In all conditions, the current year's sales growth was 6%. In the RED FLAGS present condition, participants observed current year NFM growth of, on average, -19% (25 percentage points different from sales growth). For the RED FLAGS not present condition, participants observed current year NFM growth of, on average, 0% (6 percentage points different from sales growth). For all participants, prior year accruals were low and prior year sales and NFM growth were consistent (i.e., both the accrual and NFM red flags were *not* present in the prior year). Consistent with our predictions and extending Dichev et al. (2013), manipulation checks indicate that managers can identify red flags when reviewing the financial reporting package.<sup>10</sup>

The second manipulated variable was the pressure to meet a financial target (PRESSURE). Related to PRESSURE, Dichev et al. (2013) asked CFOs if companies report earnings to misrepresent economic performance to avoid violation of debt covenants. Eighty-nine percent (73%) of private (*public*) CFOs agreed that companies did.

In the low-PRESSURE condition of our study, participants were told the following:

You have been informed by your corporate controller that Tecno's 20XX ratio for percent return on assets from the preliminary 20XX consolidated financial statements easily exceeds the required ratio as stated in the First National Bank debt covenant.

In the high-PRESSURE condition, participants were told the following:

You have been informed by your corporate controller that Tecno's 20XX ratio for percent return on assets from the preliminary 20XX consolidated financial statements just barely meets the required ratio as stated in the First National Bank debt covenant.

<sup>10</sup> Participants were post-experimentally asked to recall: 1) the difference between the company's net income and cash flow from operations; and 2) the difference between the company's sales growth and growth in NFM (measured via scales, where 1 = "Very small" and 7 = "Very large"). Non-tabulated results indicate that those in the RED FLAGS present conditions rated both differences to be significantly larger than those in the RED FLAGS not present conditions (both  $p$ 's < 0.01). In addition, both of these measures have a significant impact on CONCERN, but the difference between the company's net income and cash flow from operations appears to have a slightly stronger influence ( $t = 3.92$ ,  $p = 0.001$  vs.  $t = 2.23$ ,  $p = 0.027$  for the NFM red flag). All tests reported in the text and the tables are two-tailed.

Given the expectation that our participants would be CFOs or controllers of both privately and publicly held companies, we selected a financial target that would be relevant to both private and public companies (vs. equity-based pressures).<sup>11</sup> See "Appendix B" for a portion of our experimental materials that provides the experimental context and the independent variable manipulations.

## Dependent Variables

Our first dependent variable of interest is the level of the manager's concern over earnings quality (CONCERN). After reviewing the experimental materials, participants responded to the following prompt:

Based on your preliminary review, *net income* for *Tecno* in 20XX is:

Participants responded on a 7-point response scale ranging from 1 to 7, with the left endpoint labeled "Materially understated" and the right endpoint labeled "Materially overstated." The middle of the scale, which was 4, was labeled "Very accurate."<sup>12</sup>

Our other dependent variables of interest, measured after CONCERN, are the likelihood that the manager will report concerns over earnings quality internally (INTERNALLY) and the likelihood that the manager will report concerns over earnings quality externally (EXTERNALLY). If a participant responded to CONCERN with a "4," they were not asked questions about INTERNALLY and EXTERNALLY because such questions would be non-sensical given that they indicated that net income was "Very accurate" (i.e., there are no concerns to discuss). As such, these participants are excluded from analyses of INTERNALLY and EXTERNALLY. We measured INTERNALLY with the following question:

<sup>11</sup> Related to our PRESSURE manipulation, participants were asked to recall if Tecno's percent return on assets just met or was well above the ratio required by First National Bank (measured via scale, where 1 = "Just met" and 7 = "Well above"). Non-tabulated results indicate that the mean response for those in the high-PRESSURE condition was significantly lower than those in the low-PRESSURE condition ( $p < .01$ ).

<sup>12</sup> Our manipulations of PRESSURE and RED FLAGS would be more likely associated with net income being *overstated* than understated (e.g., pressure related to the return on assets, net income substantially higher than cash flow from operations). Indeed, only three participants in the PRESSURE high/RED FLAGS present condition (Condition 4 in Table 3) indicated concerns that earnings were understated (our tests of hypotheses are robust to excluding these three participants from our analyses). However, to avoid demand effects, we provided our participants with the option to respond that net income was either understated, very accurate, or overstated.

You stated that the 20XX net income for Tecno may be overstated/understated. To what extent would you discuss this concern with your Chief Executive Officer (CEO)?

Whether the question indicated “overstated” or “understated” was determined by the participant’s response to the aforementioned CONCERN prompt. Participants responded on a 7-point response scale ranging from 1 to 7, with the left endpoint labeled “Would not discuss” and the right endpoint labeled “Definitely discuss.” We measured INTERNALLY by examining reporting intentions to the CEO because ethics standards require discussing such matters with the immediate supervisor (IFAC 2016), the CEO is the superior to the CFO role that participants assumed in the study, those reporting concerns over fraud are most likely to convey their concerns to their direct supervisor (ACFE 2016, see also Variable 6 in Table 1), and to be consistent with prior research (e.g., Schultz et al. 1993). Furthermore, given that the financial statements are prepared by controllers *subordinate* to the CFO and our measure of INTERNALLY involves reporting to the *superior* CEO, we contribute to our understanding of whistleblower behavior by examining the under-researched setting where the potential whistleblower is a *superior* to those that may have committed fraudulent acts.

We measured EXTERNALLY with the following question:

You stated that the 20XX net income for Tecno may be overstated/understated. If inside your company nothing was done in response to your concern, to what extent would you discuss this concern with your external auditor?

Participants responded on a 7-point response scale ranging from 1 to 7, with the left endpoint labeled “Would not discuss” and the right endpoint labeled “Definitely discuss.” We measured EXTERNALLY by examining reporting intentions to the auditor because, for the CFO, the auditor is likely the closest independent external party to the financial statements. In addition, both the CFO and the auditor are “part of a chain of actors” responsible for the reliability of the financial statements (IFAC 2013).

## Testing of Hypotheses

### Descriptive Statistics

Participants’ mean responses (standard deviations) for CONCERN, INTERNALLY, and EXTERNALLY by experimental condition are presented in Table 3 and graphed in Figs. 1, 2, and 3. Consistent with H1a, managers in the RED FLAGS

present conditions have higher CONCERN levels (vs. the RED FLAGS not present conditions). Consistent with H1b, the aforementioned effect of RED FLAGS on CONCERN appears to be stronger when PRESSURE is higher versus lower. Related to H2a, H2b, H3a and our RQ, the levels of INTERNALLY and EXTERNALLY are higher when RED FLAGS are present, but it appears that the effects of RED FLAGS are only moderated by the level of PRESSURE for EXTERNALLY. One last item to note is that, regardless of PRESSURE, when RED FLAGS are present the likelihood of reporting INTERNALLY is typically high (greater than 5 on the 7-point scale). However, with the exception of the condition where PRESSURE is low and RED FLAGS are present (Condition 3), the likelihood of reporting EXTERNALLY is typically low to moderate (3.83–4.47 on the 7-point scale).

## Results

We formally test H1a and H1b using an ANOVA presented in Table 4. As predicted by H1a, there is a strong effect for RED FLAGS on CONCERN ( $F$  statistic = 57.35,  $p < .001$ ). As depicted in Table 3 and Fig. 1, and in line with our manipulation check (see Footnote 10), when RED FLAGS are present, our participants identify those red flags and, in turn, have greater concerns over earnings quality. Consistent with PRESSURE being a root cause of both managed earnings (Dichev et al. 2013) and fraud (e.g., the fraud triangle (Cressey 1953)), we also observe a significant main effect for PRESSURE on CONCERN ( $F$  statistic = 9.15,  $p = .003$ ). Table 3 depicts a higher mean for CONCERN under higher PRESSURE (vs. lower). Related to H1b, we find a significant interaction between RED FLAGS and PRESSURE ( $F$  statistic = 7.86,  $p = .006$ ). H1b predicts that the positive effect of red flags on managers’ concerns over earnings quality is stronger when the pressure to meet a financial target is higher (vs. lower). In other words, H1b predicts that the difference between Conditions 4 and 2 for CONCERN (see Table 3) should be larger than the difference between Conditions 3 and 1. Visual inspection of the means in Fig. 1 suggests the form of the interaction is consistent with H1b. However, to formally test whether the form of the interaction is consistent with our hypothesis, we performed a planned contrast. Non-tabulated results confirm that the observed interaction is consistent with the form of the interaction posited by H1b (value of the contrast (Condition 4–2) – (Condition 3–1)) = 1.01,  $t$  statistic = 2.81,  $p = .006$ ).

We formally test H2a, H2b, H3a, and our RQ using a MANOVA presented in Table 5. Consistent with H2a, there is a strong effect for RED FLAGS on INTERNALLY ( $F$  statistic = 46.18,  $p < .001$ ). The means provided in Table 3

**Table 3** Descriptive statistics—CONCERN, INTERNALLY, and EXTERNALLY

	RED FLAGS not present	RED FLAGS present	PRESSURE main effect
PRESSURE low	<u>Condition 1</u> CONCERN = 4.00 (1.07) <i>n</i> = 48 INTERNALLY = 3.72 (1.25) EXTERNALLY = 3.83 (1.95) <i>n</i> = 29	<u>Condition 3</u> CONCERN = 4.86 (1.64) <i>n</i> = 50 INTERNALLY = 5.22 (0.75) EXTERNALLY = 5.46 (1.46) <i>n</i> = 37	CONCERN = 4.44 (1.45) <i>n</i> = 98 INTERNALLY = 4.56 (1.24) EXTERNALLY = 4.74 (1.87) <i>n</i> = 66
PRESSURE high	<u>Condition 2</u> CONCERN = 4.04 (1.07) <i>n</i> = 50 INTERNALLY = 4.35 (1.91) EXTERNALLY = 3.85 (2.30) <i>n</i> = 34	<u>Condition 4</u> CONCERN = 5.91 (1.27) <i>n</i> = 56 INTERNALLY = 5.90 (1.29) EXTERNALLY = 4.47 (1.42) <i>n</i> = 51	CONCERN = 5.03 (1.50) <i>n</i> = 106 INTERNALLY = 5.28 (1.73) EXTERNALLY = 4.22 (1.84) <i>n</i> = 85
RED FLAGS main effect	CONCERN = 4.02 (1.07) <i>n</i> = 98 INTERNALLY = 4.06 (1.66) EXTERNALLY = 3.84 (2.13) <i>n</i> = 63	CONCERN = 5.42 (1.54) <i>n</i> = 106 INTERNALLY = 5.61 (1.14) EXTERNALLY = 4.89 (1.51) <i>n</i> = 88	

Table 3 reports the mean levels (standard deviations) for CONCERN, INTERNALLY, and EXTERNALLY in each of the four experimental groups and for the main effects of RED FLAGS and PRESSURE. Our first dependent variable is the level of the manager's concern over earnings quality (CONCERN). After reviewing the experimental materials, participants responded to the following prompt:

"Based on your preliminary review, net income for Tecno in 20XX is:"

Participants responded on a 7-point response scale ranging from 1 to 7, with the left endpoint labeled "Materially understated" and the right endpoint labeled "Materially overstated." Our other dependent variables of interest are the likelihood that the manager will report concerns over earnings quality internally (INTERNALLY) and externally (EXTERNALLY). Participants who responded that net income was "Very Accurate" were not asked about reporting concerns (given they had no concerns to report) and are thus excluded from the analyses of INTERNALLY and EXTERNALLY. We measured INTERNALLY with the following question:

"You stated that the 20XX net income for Tecno may be overstated/understated. To what extent would you discuss this concern with your Chief Executive Officer (CEO)?"

Participants responded on a 7-point response scale ranging from 1 to 7, with the left endpoint labeled "Would not discuss" and the right endpoint labeled "Definitely discuss."

We measured EXTERNALLY with the following question:

"You stated that the 20XX net income for Tecno may be overstated/understated. If inside your company nothing was done in response to your concern, to what extent would you discuss this concern with your external auditor?"

Participants responded on a 7-point response scale ranging from 1 to 7, with the left endpoint labeled "Would not discuss" and the right endpoint labeled "Definitely discuss."

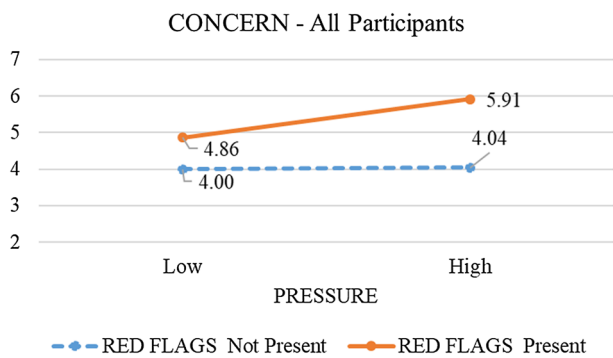
Participants responding "4" to CONCERN were excluded from our analyses of INTERNALLY and EXTERNALLY. As a result, the sample size declines between CONCERN and INTERNALLY/EXTERNALLY

and depicted in Fig. 2 suggest that, when RED FLAGS are present, managers are more inclined to report their concerns over earnings quality INTERNALLY to their CEO. In Table 5 we also observe a significant main effect for PRESSURE on INTERNALLY ( $F$  statistic = 8.63,  $p = .004$ ). Thus, in the presence of RED FLAGS or higher PRESSURE, participants are more apt to report concerns INTERNALLY. However, unlike our results for CONCERN and contrary to H2b, in Table 5 we do not observe a significant interactive effect between RED FLAGS and PRESSURE ( $F$  statistic = 0.02,  $p = .899$ ). Thus, PRESSURE does not positively moderate the effect of RED FLAGS on INTERNALLY, but rather higher PRESSURE increases the likelihood of reporting internally regardless of whether or not red flags are present. This result may reflect our finding in Table 1 of a relatively low standard deviation for "Report internally to

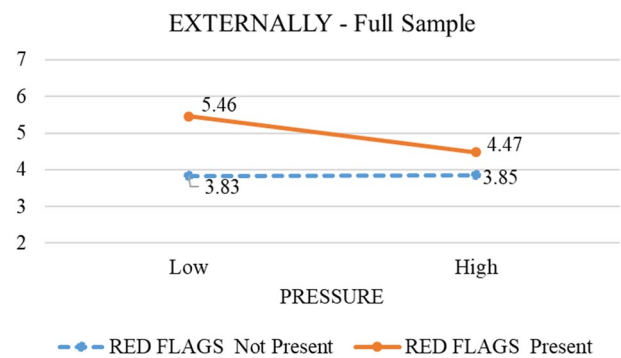
a superior" (Variable 6 in Table 1), which is indicative of substantial consensus amongst managers to discuss red flag concerns internally (regardless of context). It also suggests that if targets have been barely met (i.e., pressure is higher), managers will have internal discussions.

Our inferences remain the same if we measure INTERNALLY with discussing their concern with the corporate controller. Discussing concerns with the corporate controller, who the instrument explicitly states is *responsible for preparing* the company's consolidated financial statements, would likely be a more direct method of correcting any financial reporting issues. This of course assumes that the controller is aware of any issues and/or is willing to admit to any wrongdoing, which may not be the case. We find that, when red flags are present, the mean participant response for discussing their concern with their controller (mean = 5.56)

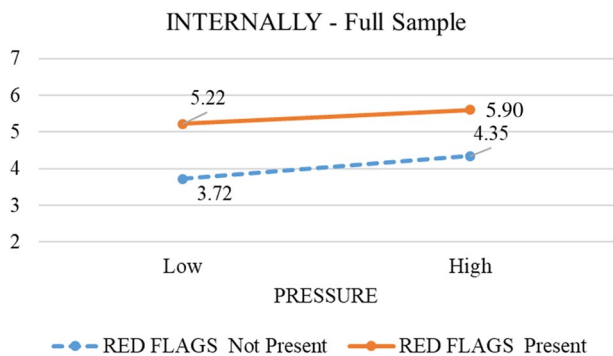




**Fig. 1** Graph of mean responses to CONCERN. All participants are included in this analysis. CONCERN=After reviewing the experimental materials, participants responded to the following prompt: “Based on your preliminary review, net income for Tecno in 20XX is:” Participants responded on a 7-point response scale ranging from 1 to 7, with the left endpoint labeled “Materially understated” and the right endpoint labeled “Materially overstated.” The middle of the scale, which was 4, was labeled “Very accurate.” RED FLAGS=Manipulated as present (both the accrual and NFM red flag were present) or not present (both the accrual and NFM red flag were not present). PRESSURE=Manipulated as high (ratio for percent return on assets just barely meets the required ratio as stated in the debt covenant) and low (ratio for percent return on assets easily exceeds the required ratio as stated in the debt covenant)



**Fig. 3** Graph of mean response to EXTERNALLY—full sample. All participants that indicated at least some level concern regarding earnings quality (response to the CONCERN dependent variable was not a “4” on the scale labeled “Very Accurate”) are included in the analysis. EXTERNALLY=After reviewing the experimental materials, participants responded to the following prompt: “You stated that the 20XX net income for Tecno may be overstated/understated. If inside your company nothing was done in response to your concern, to what extent would you discuss this concern with your external auditor?” Participants responded on a 7-point response scale ranging from 1 to 7, with the left endpoint labeled “Would not discuss” and the right endpoint labeled “Definitely discuss.” RED FLAGS=Manipulated as present (both the accrual and NFM red flag were present) or not present (both the accrual and NFM red flag were not present). PRESSURE=Manipulated as high (ratio for percent return on assets just barely meets the required ratio as stated in the debt covenant) and low (ratio for percent return on assets easily exceeds the required ratio as stated in the debt covenant)



**Fig. 2** Graph of mean responses to INTERNALLY—full sample. All participants that indicated at least some level concern regarding earnings quality (response to the CONCERN dependent variable was not a “4” on the scale labeled “Very Accurate”) are included in the analysis. INTERNALLY=After reviewing the experimental materials, participants responded to the following prompt: “You stated that the 20XX net income for Tecno may be overstated/understated. To what extent would you discuss this concern with your Chief Executive Officer (CEO)?” Participants responded on a 7-point response scale ranging from 1 to 7, with the left endpoint labeled “Would not discuss” and the right endpoint labeled “Definitely discuss.” RED FLAGS=Manipulated as present (both the accrual and NFM red flag were present) or not present (both the accrual and NFM red flag were not present). PRESSURE=Manipulated as high (ratio for percent return on assets just barely meets the required ratio as stated in the debt covenant) and low (ratio for percent return on assets easily exceeds the required ratio as stated in the debt covenant)

is approximately the same as the mean response for discussing their concern with their CEO (mean = 5.61). Thus, participants did not express a preference for one form of internal reporting over the other.<sup>13</sup>

Supporting H3a, in Table 5 we observe a significant main effect for RED FLAGS on EXTERNALLY ( $F$  statistic = 14.69,  $p < .001$ ). Inspection of the means for EXTERNALLY in Table 3 and Fig. 3 reveal that, when RED FLAGS are present and concerns are not resolved internally, participants are more apt to report EXTERNALLY to their external

<sup>13</sup> We measured discussing concerns with the corporate controller with following: Based on your preliminary review, you stated that the 20XX net income for Tecno may be overstated/understated. To what extent would you discuss this concern with your corporate controller in charge of consolidating the divisions’ financial statements? The response scale was the same as INTERNALLY. We measured discussing concerns with the corporate controller prior to discussing concerns with the CEO (INTERNALLY). However, given our one-time access to participants, we were unable to discern the sequential process and iterations our participants would have followed given their experimental condition (e.g., having several meetings with the corporate controller before meeting with the CEO). Examining the sequential processes and iterations involved in reporting concerns over earnings quality internally and externally represents a fruitful avenue for future research.



**Table 4** ANOVA: H1a and H1b testing—CONCERN

Independent variables <sup>a</sup>	df	Mean square	F	p <sup>b</sup>
RED FLAGS	1	94.761	57.345	< 0.001
PRESSURE	1	15.118	9.149	0.003
RED FLAGS × PRESSURE	1	12.982	7.856	0.006
Error	200	1.652		

*CONCERN* After reviewing the experimental materials, participants responded to the following prompt:

“Based on your preliminary review, net income for Tecno in 20XX is:”

Participants responded on a 7-point response scale ranging from 1 to 7, with the left endpoint labeled “Materially understated” and the right endpoint labeled “Materially overstated.” The middle of the scale, which was 4, was labeled “Very accurate.”

<sup>a</sup>RED FLAGS = Manipulated as present (both the accrual and NFM red flag were present) or not present (both the accrual and NFM red flag were not present)

PRESSURE = Manipulated as high (ratio for percent return on assets just barely meets the required ratio as stated in the debt covenant) and low (ratio for percent return on assets easily exceeds the required ratio as stated in the debt covenant)

<sup>b</sup>All tests are two-tailed

auditor. Our RQ asks: Is the positive effect of red flags on managers reporting externally affected by the pressure to meet a financial target? As depicted in Fig. 3, we observe a marginally significant interaction between RED FLAGS and PRESSURE ( $F$  statistic = 2.99,  $p = .086$ , two-tailed). Examining the means in Table 3, it appears that when RED FLAGS are present, managers are *less willing* to report EXTERNALLY when PRESSURE is high.

Overall, we provide strong evidence that managers can identify and react to the presence of RED FLAGS and mixed evidence related to the role of PRESSURE. Higher PRESSURE appears to increase the likelihood of reporting INTERNALLY, but makes managers more reluctant to report EXTERNALLY.

## Exploratory Analyses

### Ethical Dilemma—The Countervailing Costs of Reporting Concerns Externally

Given our finding that pressure reduces the likelihood managers will report to the auditor when red flags are present, we specifically examine the countervailing short- and long-term costs associated with reporting concerns externally. While bearing concerns over earnings quality may cause personal stress for the corporate manager, the *act of reporting* EXTERNALLY comes with significant short-term costs for the manager and presents an ethical dilemma. When reporting externally (e.g., to the external auditor or bank), the manager is increasing the likelihood that any earnings

**Table 5** MANOVA: INTERNALLY & EXTERNALLY—full sample

Independent variables <sup>a</sup>	df	Mean square	F	p <sup>b</sup>
RED FLAGS (RF): INTERNALLY	1	83.673	46.181	< 0.001
EXTERNALLY	1	45.783	14.685	< 0.001
PRESSURE: INTERNALLY	1	15.634	8.629	0.004
EXTERNALLY	1	8.399	2.694	0.103
RF × PRESSURE: INTERNALLY	1	0.029	0.016	0.899
EXTERNALLY	1	9.307	2.985	0.086
Error INTERNALLY	147	1.812		
Error EXTERNALLY	147	3.118		

INTERNALLY = After reviewing the experimental materials, participants responded to the following prompt:

“You stated that the 20XX net income for Tecno may be overstated/understated. To what extent would you discuss this concern with your Chief Executive Officer (CEO)?”

Participants responded on a 7-point response scale ranging from 1 to 7, with the left endpoint labeled “Would not discuss” and the right endpoint labeled “Definitely discuss.”

EXTERNALLY = After reviewing the experimental materials, participants responded to the following prompt:

“You stated that the 20XX net income for Tecno may be overstated/understated. If inside your company nothing was done in response to your concern, to what extent would you discuss this concern with your external auditor?”

Participants responded on a 7-point response scale ranging from 1 to 7, with the left endpoint labeled “Would not discuss” and the right endpoint labeled “Definitely discuss.”

<sup>a</sup>RED FLAGS (RF) = Manipulated as present (both the accrual and NFM red flag were present) or not present (both the accrual and NFM red flag were not present)

PRESSURE = Manipulated as high (ratio for percent return on assets just barely meets the required ratio as stated in the debt covenant) and low (ratio for percent return on assets easily exceeds the required ratio as stated in the debt covenant)

<sup>b</sup>All tests are two-tailed

management and/or fraud in the financial statements is not only detected, but also adjusted (i.e., restated). As noted previously, the short-term social costs/retaliations faced by employees that blow the whistle externally are significant and well documented (e.g., Carson et al. 2008; Jos et al. 1989). To measure this short-term cost, we asked participants in our study:

As the CFO of *Tecno*, please describe how your *career at Tecno* would be affected if you adjusted Tecno’s 20XX *net income downward* to correct any accounting misstatements (ADJUSTMENT):

Participants responded on a 7-point response scale ranging from 1 to 7, with the left endpoint labeled “Very negatively” and the right endpoint labeled “Very positively.”

However, short-term career costs associated with a potential adjustment to earnings may not be the only personal cost considered by managers when deciding to report EXTERNALLY. We also examine the *long-term* costs of *not reporting* concerns EXTERNALLY. Feng et al. (2011) and Beasley et al. (2010) describe how CFOs of companies that manipulated earnings face future employment restrictions, legal issues, and other long-term costs. In line with these long-term costs, we asked participants in our study two questions:

As the CFO of *Tecno*, please describe the *risk to your career* if you submit the 20XX *Tecno* financial statements to First National Bank (assuming no adjustments are made to the financial statements) (CAREER RISK):

As the CFO of *Tecno*, please describe your *risk of litigation* if you submit the 20XX *Tecno* financial statements to First National Bank (assuming no adjustments are made to the financial statements) (LITIGATION RISK):

Participants responded on 7-point response scales ranging from 1 to 7, with the left endpoints labeled “None” and the right endpoints labeled “Very high.”

In non-tabulated tests of moderated mediation using the Hayes (2013) bootstrapping procedure, we find that ADJUSTMENT significantly mediates the relation between RED FLAGS and EXTERNALLY, but only when PRESSURE is high (Index =  $-.360$ , SE =  $.199$ , LLCI =  $-.949$ , ULCI =  $-.091$ ). In other words, when pressure to meet a financial target exists, managers are less likely to report to the auditor because of the negative short-term career implications of adjusting net income downwards (and potentially missing the financial target).

Although the presence of RED FLAGS and PRESSURE affect CAREER RISK and marginally affect LITIGATION RISK, neither CAREER RISK nor LITIGATION RISK are significant mediators of the relation between RED FLAGS and EXTERNALLY. These measures of long-term costs did not provide additional explanatory power in examining the reporting behavior of our managers.

### Alternative Reporting Outlets

With respect to responding externally after reporting concerns internally, IFAC (2016) notes the importance of alerting the auditor under such circumstances, so that the auditor is provided with all the information that is necessary for them to complete their audit. Still, those reporting fraud externally often use multiple outlets (including their auditor) to convey their concerns (ACFE 2016). Reporting concerns over earnings quality to an audit committee or an

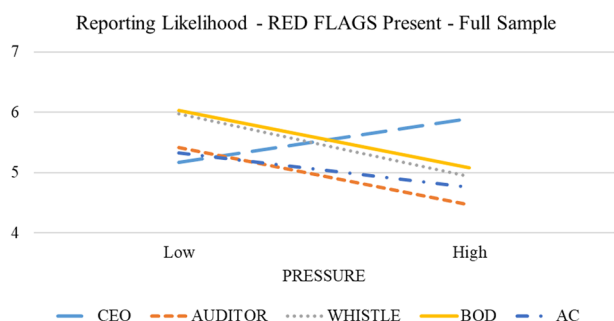
anonymous whistleblower hotline may be a less extreme step than reporting to the external auditor (Gao et al. 2017). Figure 4 depicts the relative likelihood of reporting to various channels when RED FLAGS are present in the financial statements. The CEO is the only reporting channel in which participants were more likely to report when PRESSURE was higher versus lower. For all other reporting channels, participants were more hesitant to report when PRESSURE was higher, consistent with the costs of reporting externally increasing as PRESSURE increases.

### Examination of CFO and Controller Participants

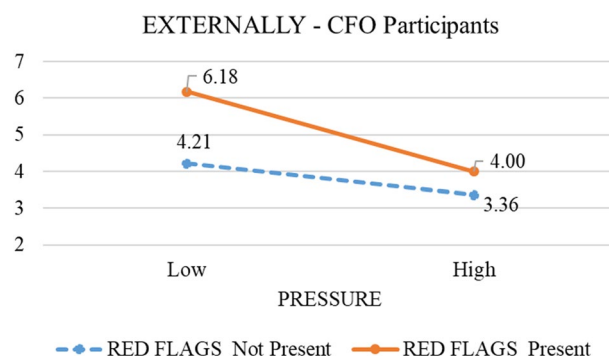
Seventy-nine (38.7%) and 56 (27.5%) of our participants were CFOs and controllers, respectively. We conducted exploratory analyses to determine whether the reporting behavior differed between these two groups. Encouragingly, and consistent with expectations, we observe significant main effects for RED FLAGS on CONCERN for both CFOs and controllers. As such, it appears both types of participants were able to recognize when red flags were present in the financial statements under their review. Furthermore, there were no significant differences in perceptions of costs to their career and/or litigation for reporting externally. However, controllers did view both the NFM and the accrual differences (our study’s two RED FLAGS) as larger than CFOs.

We also note for both CFOs and controllers significant main effects for RED FLAGS on all internal and external reporting channels (all  $p$ 's < 0.040 for reporting to the CEO, board of directors, audit committee, whistleblower hotline, and auditor), with the exception of controllers reporting to the auditor, which is marginally significant ( $p = 0.053$ ). PRESSURE also significantly affected the reporting decisions of both CFOs (to the CEO, audit committee, whistleblower hotline, and auditor) and controllers (CEO, audit committee, and auditor) (all  $p$ 's < 0.100); however, it affected reporting differently depending on participant type and reporting outlet. More specifically, controllers were more likely to report to all outlets when pressure was higher. When pressure was higher, CFOs were marginally more likely to report internally to the CEO ( $p = 0.099$ ), but were *less likely* to report to the audit committee ( $p = 0.063$ ), whistleblower hotline ( $p = 0.025$ ), and auditor ( $p = 0.003$ ).

Still, these main effects must be considered in light of interactions. When examining the interactions, different patterns emerged for controllers and CFOs. For controller participants, we note marginally significant interactions for reporting to the whistleblower hotline ( $p = 0.051$ ) and auditor ( $p = 0.053$ ), such that the effect of RED FLAGS on reporting was *stronger* when PRESSURE was higher. Interactions were similarly noted for CFOs for reporting to the audit committee ( $p = 0.057$ ), whistleblower hotline ( $p = .015$ ), and auditor ( $p = 0.086$ ), but a different pattern



**Fig. 4** Graph of likelihood of reporting to various reporting channels. All participants that indicated at least some level concern regarding earnings quality (response to the CONCERN dependent variable was not a “4” on the scale labeled “Very Accurate”) are included in the analysis. RED FLAGS=Manipulated as present (both the accrual and NFM red flag were present) or not present (both the accrual and NFM red flag were not present). PRESSURE=Manipulated as high (ratio for percent return on assets just barely meets the required ratio as stated in the debt covenant) and low (ratio for percent return on assets easily exceeds the required ratio as stated in the debt covenant). CEO=After reviewing the experimental materials, participants responded to the following prompt: “You stated that the 20XX net income for Tecno may be overstated/understated. To what extent would you discuss this concern with your Chief Executive Officer (CEO)?” Participants responded on a 7-point response scale ranging from 1 to 7, with the left endpoint labeled “Would not discuss” and the right endpoint labeled “Definitely discuss.” AUDITOR=After reviewing the experimental materials, participants responded to the following prompt: “You stated that the 20XX net income for Tecno may be overstated/understated. If inside your company nothing was done in response to your concern, to what extent would you discuss this concern with your external auditor?” Participants responded on a 7-point response scale ranging from 1 to 7, with the left endpoint labeled “Would not discuss” and the right endpoint labeled “Definitely discuss.” WHISTLE=After reviewing the experimental materials, participants responded to the following prompt: “You stated that the 20XX net income for Tecno may be overstated/understated. If inside your company nothing was done in response to your concern, to what extent would you report this concern to your company’s anonymous whistleblower hotline?” Participants responded on a 7-point response scale ranging from 1 to 7, with the left endpoint labeled “Would not report” and the right endpoint labeled “Definitely report.” BOD=After reviewing the experimental materials, participants responded to the following prompt: “You stated that the 20XX net income for Tecno may be overstated/understated. If inside your company nothing was done in response to your concern, to what extent would you discuss this concern with your board of directors?” Participants responded on a 7-point response scale ranging from 1 to 7, with the left endpoint labeled “Would not discuss” and the right endpoint labeled “Definitely discuss.” AC=After reviewing the experimental materials, participants responded to the following prompt: “You stated that the 20XX net income for Tecno may be overstated/understated. If inside your company nothing was done in response to your concern, to what extent would you discuss this concern with your audit committee?” Participants responded on a 7-point response scale ranging from 1 to 7, with the left endpoint labeled “Would not discuss” and the right endpoint labeled “Definitely discuss.”



**Fig. 5** Graph of mean response to EXTERNALLY – CFO participants. All participants that indicated at least some level concern regarding earnings quality (response to the CONCERN dependent variable was not a “4” on the scale labeled “Very Accurate”) and also indicated a job title of “CFO” are included in the analysis. EXTERNALLY=After reviewing the experimental materials, participants responded to the following prompt: “You stated that the 20XX net income for Tecno may be overstated/understated. If inside your company nothing was done in response to your concern, to what extent would you discuss this concern with your external auditor?” Participants responded on a 7-point response scale ranging from 1 to 7, with the left endpoint labeled “Would not discuss” and the right endpoint labeled “Definitely discuss.” RED FLAGS=Manipulated as present (both the accrual and NFM red flag were present) or not present (both the accrual and NFM red flag were not present). PRESSURE=Manipulated as high (ratio for percent return on assets just barely meets the required ratio as stated in the debt covenant) and low (ratio for percent return on assets easily exceeds the required ratio as stated in the debt covenant)

emerged—one consistent with our main analyses and not in the direction one would necessarily hope. As illustrated in Fig. 5, higher-pressure settings made CFOs *less likely* to report EXTERNALLY when RED FLAGS were present (vs. lower pressure settings).

### Job Tenure and Reporting Earnings Quality Concerns

In relation to the sham-account sales scandal at Wells Fargo (that led to the ouster of the CEO, substantial fines, etc.), Wells Fargo executives reported to the press that “[the] root of Wells Fargo’s crisis-control debacle is an insular corporate culture, fostered by executives with decades of tenure” (Glazer 2016). In his study of white-collar criminals, Soltes (2016, p. 320) notes that “once individuals become more senior within an organization, they tend to be more susceptible to overconfidence and trust their own ability to successfully navigate challenges.” In non-tabulated analyses, we find a decrease in reporting EXTERNALLY as tenure increases. Thus, we provide initial evidence that corporate managers with longer tenure at their positions may be *less likely* to “rock the boat” and report concerns over earnings quality externally.

## The Professional Accountant's Role in Reporting Concerns

As described in Table 1 (Variable 12), 41.32% of our participants indicated that their background was in public accounting (vs. finance, credit, investment banking). IFAC (2016, p. 4) notes: "A distinguishing mark of the accountancy professional is its acceptance of the responsibility to act in the public interest." In addition, if a misstatement is later identified, the CFO with an accounting background is more likely to be held responsible for the error or fraud (vs. a CFO with finance experience who may be able to deflect responsibility to a corporate controller). Provided this added incentive for managers with public accounting backgrounds to report earnings quality concerns, we examine correlations between a public accounting background and the likelihood of reporting concerns INTERNALLY and EXTERNALLY when RED FLAGS are present. Although we see the same basic reporting pattern described in the main analyses, the means of reporting both INTERNALLY and EXTERNALLY are slightly higher for participants with public accounting backgrounds (RED FLAG present mean = 5.64 for INTERNALLY and 5.21 for EXTERNALLY) versus those with non-public accounting backgrounds (means = 5.52 and 4.52, respectively). In the most extreme condition where reporting EXTERNALLY is most critical (where red flags are present and pressure is higher), we observe means of 4.80 and 4.13, respectively for public accountants versus non-public accountants. Thus, consistent with the recent ethical framework set forth by IFAC (2016), we observe that, when fraud red flags are present, managers with public accounting backgrounds are more likely to report externally.<sup>14</sup>

## Conclusion

The objective of this study was to examine the influence of red flags and the pressure to meet an earnings target on the intention of managers, controllers, and CFOs to report earnings quality concerns. The managers participating in our study were primarily employed by private companies and involved in the financial reporting process. Management is tasked with preventing and detecting extreme earnings management at companies, as it is both costly and undermines public confidence in the financial reporting process.

<sup>14</sup> Interestingly, even though shorter tenure and a CPA background are associated with a higher likelihood of reporting externally, we do not observe significant correlations between these two factors and responses to our red flag manipulation checks (see Footnote 10). Thus, managers with shorter tenure and CPA backgrounds were no more likely to identify the red flags, but were more apt to report their concerns externally.

Consequently, it is important for us to not only understand whether managers are able to recognize the red flags that indicate earnings management, but also whether they are willing to respond to such risks by reporting concerns to the appropriate party(ies). In this study, we observe that managers' concerns over earnings quality increase when red flags are present in the financial statements they review. In addition, when the pressure to meet a financial target is greater, managers are more concerned about earnings quality when reviewing financial statements exhibiting red flags.

We also document that when red flags are present, managers are more likely to report both internally to their CEO and, if their concerns are not resolved internally, externally to their auditor. Interestingly, pressure to meet a financial target increases the likelihood managers report internally, but decreases their likelihood of reporting externally when red flags are present. Additional analyses document reporting differences between CFOs and controllers, and examine the important roles that short-term personal costs, job tenure, and an accounting background play in the ethical dilemma managers face when deciding whether to report externally.

Our study makes important contributions to the academic literature and practice. Dichev et al. (2013) have shown that CFOs are able to list the signs of earnings management. We extend this line of literature by experimentally examining whether these managers are also able to *recognize* when these red flags are present in financial statements under their review. Furthermore, since merely recognizing financial reporting issues is often viewed as an inadequate response (Scannel and Latour 2004), we provide initial insights into factors that impact the likelihood of reporting (or not reporting) concerns both internally and externally. Such examinations are important given the significant costs of fraud to investors, creditors, companies, etc. (e.g., NASAA 2006; Karpoff et al. 2008; Beasley et al. 2010; Brazel et al. 2015).

We illustrate the important roles that pressure, job tenure, and a non-accounting background play in inhibiting external reporting decisions. How these factors vary within and between corporate management teams may serve as a key to auditors, audit committees, boards of directors, or investors when assessing the risk of fraud. Auditors should be aware that CFOs will be hesitant to report concerns to the auditor, particularly in the crucial setting where reporting pressure is high. As such, auditors, audit committee members, investors, regulators, and other capital market participants should be prepared to identify red flags on their own (vs. expecting management to raise the issue). These participants may need additional training as research suggest that, at times, they are not apt to detect fraud red flags (e.g., Brazel et al. 2014, 2015).

Our results could also be beneficial to internal control designers assigned the difficult task of developing effective whistleblower systems. For example, when companies



typically operate under high reporting pressure, substantial investment may be needed to develop a system that encourages the reporting of fraud. Finally, to our knowledge, we are the first to investigate whether and how the pressure to meet a financial target impacts the willingness of managers to report concerns. We observe that high pressure inhibits CFOs from reporting red flags externally more than corporate controllers. This lack of response from our CFO participants suggests that CFOs may be more prone to fall down the “slippery slope” as described by Schrand and Zechman (2012) and Suh et al. (2018).

This study’s limitations should be recognized when considering its conclusions and its potential to spur future research. First, our sample of participants consisted of Italian managers who primarily worked for privately held companies. In the development of our hypotheses, we relied largely on U.S. research, guidance, and standards (e.g., Graham et al. 2005; Dyck et al. 2010; Dichev et al. 2013; Brink et al. 2013; COSO 2013; ACFE 2016). We believe that our Italian managers behaving, in most respects, consistent with our hypotheses provides some evidence that our findings are likely generalizable to the U.S. setting. However, further research is needed to determine the extent to which our findings generalize to other settings (e.g., CFOs of U.S. publicly traded companies, CFOs of companies in other European Union countries).

Second, while we are not aware of any empirical evidence regarding what goes through CFOs’ minds when they review financial statements, we acknowledge that our measure of concerns over earnings quality may not fully reflect CFOs’ thought processes. We felt that, given the verbiage used by findings of Dichev et al. (2013), our measure of concern was an effective and efficient measure. While Dichev et al. (2013) refer to “earnings quality” we decided to measure concern with the participant’s perception of net income being materially understated or materially overstated to avoid the subjectivity associated with the term “quality.” It is also possible that our measure prompted participants to think that there was a problem with the company’s financial statements. To avoid demand effects, we provided our participants with the option to respond that net income was understated, very accurate, or overstated (see Footnote 12). In addition, as can be discerned from the sample size declines between CONCERN and INTERNALLY/EXTERNALLY in Table 3 (i.e., participants that responded “4” to CONCERN or that net income was “Very accurate”), we had a number of participants ( $n = 53$ ) express that net income was very accurate, even when RED FLAGS were present ( $n = 18$ ) and when PRESSURE was high ( $n = 21$ ). This provides some support that our measure was not overly forceful in prompting participants to perceive a problem. However, additional research is needed to determine whether a more effective measure of earnings quality concerns can be identified that

better emulates what actually goes through the minds of CFOs when they review financial statements.

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## Appendix A: Participant Recruiting Method

In order to increase the validity of our experimental study, we tried to obtain participation from experienced corporate financial managers. The first phase of the project involved the creation of a small working team, comprised of one of the authors, acting as the group coordinator, and two graduate students that were recruited and instructed to conduct the data collection process. The strategy used to recruit participants was to approach each potential respondent informally before sending the official invitation letter. This first step was taken to obtain some sense of commitment, to obtain personal details like a valid working email, and to increase the overall chance of receiving valid feedback once the experimental instrument was distributed.

Participants were recruited from a variety of industries/public and privately held companies and were employed in managerial roles related to the aims and scopes of the project (i.e., corporate financial reporting). Potential participants were identified in three ways. First, the research group began the recruitment process from the working network of one of the authors who had previously led other large-scale surveys in the field of managerial accounting. Thus, the research team started to approach Italian CFOs and Controllers who shared the same author’s LinkedIn groups (e.g., the Italian Association of Administrative and Financial Directors (ANDAF), the Italian Chief Financial Officer Group (CFO Italia), the Consolidation & Financial Reporting Group (CFR), the Strategic CFO, the Italian Controllers Group). Second, a list of CFOs, Controllers, and other accounting practitioners from a large variety of organizations was identified using Aida - Bureau Van, a database of public and



private Italian companies. Finally, practitioners were also selected based upon their previous involvement and collaborations with the author's past research. Once identified, an informal message was sent using the LinkedIn platform to introduce the aims and scopes of the project briefly, and a telephone call followed in case the potential respondent asked for more details on the project. This procedure allowed the research team to gain the trust of the selected respondents and assure the confidentiality of the results if they agreed to be involved with the project.

Individuals who indicated an interest in participating were presented with the informed consent document at the beginning of the survey. The document gave instructions for the study, highlighted that participation was on a voluntary basis, and gave assurances of confidentiality. The informed consent document also contained the identities of the data collection team and their contacts (email and mobile number) in order to answer to any questions. The survey was administrated using the Qualtrics platform. Respondents were free to end their participation at any time.

The data collection team followed up with participants as needed if they did not complete the survey, but the team was sensitive to the fact that participants were full-time employees that were participating voluntarily without any incentive or prize. The extent of follow-ups varied by participant, but the maximum number of follow-ups the data collection team made was three attempts. Typically, participants chose to participate after the initial attempt or one follow-up. Once the respondents completed the survey, a letter of thanks was sent. We did not note any significant difference in participation, reactions, or follow-ups that could be tied to a particular organization type, industry or region. In addition, we offered to provide feedback about the study to participants after the study was complete.

## Appendix B—Portion of Experimental Materials

Note: Not seen by participants: The experimental instruments were programmed into Qualtrics and completed online by participants. See Footnote 9 for information about how the instrument was translated from English to Italian. Also, all U.S dollars were converted to Euros.

The University of XXXX and XXXX University are conducting a study of financial and accounting managers' decisions. We would greatly appreciate you participating in our study. The study will place you in the role of a financial manager of a hypothetical company, provide you with information about the company, and ask you to complete a survey. We estimate this study will take you less than **20 min** to complete.

### INITIAL QUESTIONS

- As part of your current job, are you in anyway involved with producing your company's financial statements?  
[Yes] [No]

- As part of your current job, are you in anyway responsible for your company's financial statements?

[Yes] [No]

- Is the company you currently work for privately held or publicly traded?

[Privately Held] [Publicly Traded]

### YOUR ROLE, TECNO SPORTING GOODS, AND AN INDUSTRY OVERVIEW

Assume you are the Chief Financial Officer of **Tecno Sporting Goods**. **Tecno Sporting Goods** consists of four divisions that are consolidated for financial reporting purposes. Each division has a controller in charge of preparing the division's financial statements. The corporate controller (who works directly under you) is in charge of consolidating the divisions' financial statements into one set of financial statements for **Tecno Sporting Goods**. Your corporate controller is primarily responsible for preparing **Tecno Sporting Goods'** consolidated financial statements.

Your company's main financing comes in the form of loans from **First National Bank**. First National Bank requires your company to provide audited financial statements annually. Your company's debt covenant with First National Bank requires that you meet several financial ratios. If the debt covenant is violated/if these financial ratios are not met, First National Bank has the right to require that all future payments under the loans are due and payable immediately.

**Tecno Sporting Goods** is a manufacturer of sporting goods equipment. Specifically, **Tecno Sporting Goods** specializes in manufacturing balls and related products for soccer, tennis, basketball, and golf, as well as other sports. These products are typically sold to sporting goods retailers where they are purchased by individual consumers. The industry has four major manufacturers with Technogym Sporting Goods Co. holding the largest market share. Annual sales growth for **Tecno Sporting Goods** has been between 4-6% for the last two years. This sales growth is also in line with industry averages.

**Tecno Sporting Goods** was the subject of a recent business news article. Here are some highlights from the article:

- It is expected that the trend towards consolidation in the sporting goods industry will continue. Tecno Sporting Goods should benefit from the consolidation. Given Tecno Sporting Goods' leadership in the industry, Tecno Sporting Goods may acquire other companies

with valuable manufacturing technologies and build the product lines into successful businesses.

- Tecno Sporting Goods' soccer balls enjoy a high level of acceptance among many youth soccer leagues in Italy. Trade magazines consistently give high marks to the soccer division's products. Tecno Sporting Goods' soccer division should continue to contribute to Tecno Sporting Goods' sales and profits and offer technological contributions to the soccer industry. However, given a difficult economy, sales of high-end youth soccer equipment may decrease significantly over the next 2 years.
- In the coming years, new rule changes are expected in some of the sports for which Tecno Sporting Goods creates products. These rule changes, like a possible change in the weight of youth basketballs, will change the way many of Tecno Sporting Goods' products are manufactured. Basketball teams and leagues will be required to buy new equipment to comply with some rule changes. Tecno Sporting Goods may benefit and possibly gain market share from some rule changes as they are already retooling their manufacturing processes in anticipation of these changes.

#### YOUR CURRENT SITUATION

Your company's current fiscal year-end is 12/31/20X3. It is 2 weeks after your 20X3 fiscal year-end. Your corporate controller has recently obtained your four divisions' annual financial statements. Your corporate controller and his staff are in the process of consolidating those financial statements into the 20X3 *Tecno Sporting Goods* fiscal year-end financial statements.

As described previously, your company's main financing comes in the form of loans from First National Bank. *Tecno Sporting Goods*' debt covenant with First National Bank requires that *Tecno Sporting Goods* meet several financial ratios (e.g., current ratio, return on assets). If these financial ratios are not met, First National Bank has the right to require that all future payments under the loans are due and payable immediately.

In order to perform your initial, preliminary, top-level review of *Tecno Sporting Goods*' financial condition, you have asked your corporate controller for:

- preliminary, non-detailed 20X3 *Tecno Sporting Goods* financial statements (along with comparative financial statements from the two prior years)
- financial ratio calculations
- important operational data for *Tecno Sporting Goods*. Feel free to use a calculator or take notes when reviewing this information.

Note: Not seen by participants: Below is the low-PRESSURE manipulation (the paragraph below was highlighted yellow).

You have been informed by your corporate controller that Tecno's 20X3 ratio for **percent return on assets** from the preliminary 20X3 consolidated financial statements **easily exceeds** the required ratio as stated in the First National Bank debt covenant.

Note: Not seen by participants: Below is the high-PRESSURE manipulation (the paragraph below was highlighted yellow).

You have been informed by your corporate controller that Tecno's 20X3 ratio for **percent return on assets** from the preliminary 20X3 consolidated financial statements **just barely meets** the required ratio as stated in the First National Bank debt covenant.

In about a week, the consolidation process will be complete. At that time, detailed, consolidated financial statements for Tecno will be provided to your external auditor.

#### PRELIMINARY 20X3 TECNO SPORTING GOODS CONSOLIDATED FINANCIAL STATEMENTS (ALONG WITH THE TWO PRIOR YEARS)

##### INCOME STATEMENT (\$ millions)

	Year ended December 31,		
	20X3	20X2	20X1
Total sales	\$771	\$728	\$699
Cost of sales	287	269	256
Gross profit	484	459	443
Operating expenses	391	372	377
Operating income	93	87	66
Income tax expense	32	30	23
Net income	\$61	\$57	\$ 43

##### BALANCE SHEET (\$ millions)

	As of December 31,		
	20X3	20X2	20X1
<b>ASSETS</b>			
Current assets	\$ 393	\$ 364	\$364
Non-current assets	540	517	467
<b>TOTAL ASSETS</b>	<b>\$933</b>	<b>\$881</b>	<b>\$831</b>
<b>LIABILITIES &amp; OWNERS' EQUITY</b>			
Current liabilities	\$ 170	\$ 167	\$ 151
Non-current liabilities	166	159	154
Owners' equity	597	555	526
<b>TOTAL LIAB. &amp; OWNERS' EQUITY</b>	<b>\$933</b>	<b>\$881</b>	<b>\$831</b>

Note: Not seen by participants: Below is the RED FLAGS not present manipulation.

## STATEMENT OF CASH FLOWS (\$ millions)

	Year ended December 31,		
	20X3	20X2	20X1
Net income	\$61	\$57	\$43
Total cash flows from operating activities	52	48	35
Total cash flows from investing activities	(20)	(19)	(18)
Total cash flows from financing activities	3	2	2
Increase (decrease) in cash and cash equivalents	35	31	19
Cash and cash equivalents at beginning of year	116	85	66
Cash and cash equivalents at end of year	\$ 151	\$ 116	\$ 85

Note: Not seen by participants: Below is the RED FLAGS present manipulation.

## STATEMENT OF CASH FLOWS (\$ millions)

	Year ended December 31,		
	20X3	20X2	20X1
Net income	\$61	\$57	\$43
Total cash flows from operating activities	(42)	48	35
Total cash flows from investing activities	(20)	(19)	(18)
Total cash flows from financing activities	3	2	2
Increase (decrease) in cash and cash equivalents	(59)	31	19
Cash and cash equivalents at beginning of year	116	85	66
Cash and cash equivalents at end of year	\$ 57	\$ 116	\$ 85

## FINANCIAL RATIOS

	20X3	20X2	20X1
Current ratio (current assets/current liab.)	2.31	2.18	2.41
Debt to equity (total liab./total equity)	0.56	0.59	0.58
Leverage (non-current liab./total assets)	0.18	0.18	0.18
Percent return on assets (net income/total assets)	6.54%	6.46%	5.17%
Gross margin (gross profit/total sales)	0.62	0.63	0.63

Note: These financial ratios are consistent with *Tecno Sporting Goods's* competitors/industry.

**OPERATIONAL INFORMATION FOR TECNO SPORTING GOODS CO.**

Note: Not seen by participants: Below is the RED FLAGS not present manipulation.

	20X3	20X2	20X1
Number of employees	3,350	3,321	3,321
Production lines	10	10	11

	20X3	20X2	20X1
Patents	6	6	7
Square meters of production space	1,550,000	1,680,000	1,680,000
Number of retailers	50	46	51
New products	5	5	5

Note: Not seen by participants: Below is the RED FLAGS present manipulation.

**OPERATIONAL INFORMATION FOR TECNO SPORTING GOODS**

	20X3	20X2	20X1
Number of employees	2,550	3,321	3,321
Production lines	8	10	11
Patents	5	6	7
Square meters of production space	1,425,000	1,680,000	1,680,000
Number of retailers	37	46	51
New products	4	5	5

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