

Auditors and the Deterrence of Managers' Operational Opportunism: The Importance of Communication to the Board and Consistency with Peer Behavior

ABSTRACT: Research indicates that managers are willing to make opportunistic operating decisions to meet short-term targets. In this study, we investigate when and how auditor actions can help deter this opportunistic behavior, commonly known as real earnings management (REM). Informed by Perceptual Deterrence Theory, we conduct three experiments with corporate managers as participants. In Experiment 1 we predict and find that REM can be deterred when managers expect auditors to increase scrutiny (i.e., increased inquiry and testing) and discuss their observations with the board. However, this effect occurs only when managers' operational decisions are inconsistent (as opposed to consistent) with peer behavior. Experiment 2 results suggest that, when communication to the board is not expected, increased auditor scrutiny alone is not likely to deter REM. Experiment 3 findings suggest that when paired, increased auditor scrutiny and communication to the board can be an effective deterrent for both REM and accounting-based earnings management (AEM). However, without communication to the board, auditor scrutiny alone deters AEM, but also appears to induce more REM. Our findings highlight the importance of communication between auditors and the board, but also the limitations of auditor scrutiny as a deterrent to manager opportunism. We provide evidence that, under certain conditions, the benefits of auditor scrutiny can extend beyond the traditional domain of financial statement assurance and improve the quality of managers' operating decisions.

Keywords: Auditor scrutiny, peer behavior, manager opportunism, perceptual deterrence theory, real earnings management.

Data Availability: Contact the authors.

I. INTRODUCTION

It is not uncommon for managers to opportunistically reduce discretionary expenditures like research and development (R&D) or advertising to boost reported earnings and meet short-term targets, but such decisions can negatively impact a business's growth potential, competitiveness, and value creation in the long run (e.g., Graham, Harvey, and Rajgopal 2005; Cohen and Zarowin 2010). The accounting literature commonly refers to this opportunistic behavior as real earnings management (REM).¹ Research suggests that the use of REM has increased significantly since the passage of the Sarbanes-Oxley Act (SOX; Cohen, Dey, and Lys 2008), likely because this form of earnings management does not violate Generally Accepted Accounting Principles (GAAP). Furthermore, the use of REM is difficult for interested parties to detect, including investors, analysts, regulators, and even the board of directors (Dichev, Graham, Harvey, and Rajgopal 2013; Kothari, Mizik, and Roychowdhury 2016). Although identifying mechanisms that deter operational opportunism can help protect shareholders' interests and preserve firm value (Bhojraj, Hribar, Picconi, and McInnis 2009; Cohen and Zarowin 2010), there is limited research on how these shortsighted decisions can be constrained (Kothari et al. 2016).

In this study, we use Perceptual Deterrence Theory (PDT) as our theoretical framework to investigate when and how auditor actions can contribute to the deterrence of operational opportunism. According to PDT, decision-makers simultaneously consider the perceived likelihood of being caught and the expected punishment when considering whether to engage in illegal or unethical behavior (Nagin and Pogarsky 2001; Strelan and Boeckmann 2006). Consistent with PDT, prior accounting research demonstrates that auditor actions can deter managers' aggressive accounting choices (Schneider and Wilner 1990; Chen, Kelly, and Salterio 2012), as

¹ Throughout the paper, we refer to this opportunistic behavior as both REM and operational opportunism.

auditors have both the ability to detect and constrain (i.e., penalize) such behavior (Hirst 1994; Kinney and Martin 1994; Nelson, Elliott, and Tarpley 2002). However, considering the primary responsibility of auditors is to provide reasonable assurance that financial statements are free of material misstatements, the extent to which auditor actions can deter managers from using REM is uncertain.

Research suggests that, even without a targeted search for REM, auditors can (and do) detect the use of REM through the normal course of their audit (Commerford, Hermanson, Houston, and Peters 2016). Research also suggests auditors are likely to increase inquiry and testing as a response to observed REM (Commerford et al. 2016; Commerford, Hermanson, Houston, and Peters 2018a). However, REM does not clearly fall under the “jurisdiction” of auditors. That is, unlike aggressive accounting choices, auditors are not expected to evaluate or judge the quality of managers’ operating decisions, nor is there explicit regulatory guidance requiring them to do so (Commerford et al. 2016). Therefore, although auditors can detect REM, they do not have the power to directly penalize it. PDT asserts that the likelihood of detection and the potential punishment must work jointly to achieve deterrence (Evans, Houston, Peter, and Pratt 2015; Ritchey and Nicholson-Crotty 2011). Accordingly, managers are likely unaffected by auditors’ ability to detect and scrutinize REM, as there is little to no threat of penalty from auditors.

That said, increased scrutiny (i.e., increased inquiry and testing) is not the only course of action auditors can take in response to operational opportunism. Our theory suggests that one way auditors can contribute to the deterrence of REM is to ensure members of the board of directors (hereafter, “the board” or “boards”), who have the power to penalize managers for engaging in such behavior, are informed about instances of potential manager opportunism. Prior research suggests that boards have a negative view of opportunistic operating decisions (Dechow and Sloan

1991; Laux and Laux 2009; Cheng 2004; Chen, Cheng, Lo, and Wang 2015b), but that they also struggle to detect operational opportunism (Jensen 1993; Adams and Ferreira 2007; Armstrong, Guay and Weber 2010; Chen, Cheng, and Wang 2015a). We propose that REM can be deterred when managers expect auditors to scrutinize unusual operating decisions *and* also communicate their observations to the board. PDT suggests that this type of auditor-board communication will better link the auditor's detection ability to the board's ability to penalize, allowing both components to work jointly to achieve deterrence of REM.

One of the unique challenges associated with REM is that it can be difficult to differentiate target-motivated decisions from similar decisions that naturally occur through the normal course of business. It can be particularly difficult to discern the intent of managers' operating decisions when those decisions are consistent with industry norms and trends (Dichev et al. 2013; Commerford et al. 2016). As such, the likelihood of detecting managers' opportunism is diminished when managers' decisions appear to be consistent with peer behavior. Furthermore, even if detected, research suggests that managers use peer behavior to rationalize and justify those decisions to themselves and to others (Gino, Ayal, and Ariely 2009; Brown 2014; Koonce, Miller, and Winchel 2015). This research suggests that consistency with peer behavior likely moderates the extent to which auditor actions deter the use of REM. Therefore, we predict that increased auditor scrutiny *with* auditor-board communication will deter REM when that behavior is inconsistent with peers, but not when such behavior seems to be consistent with peers.

We examine our theory and predictions through a series of three experiments, using experienced corporate managers as participants.² In both Experiment 1 and Experiment 2, we employ a 2 x 2 between-participants design, manipulating the expected auditor response to unusual

² Approval was granted by the Institutional Review Board (IRB) for Human Participants at the universities from which the experiments were administered online.

operating decisions (treatment versus control) and consistency with peer behavior (consistent versus inconsistent). In Experiment 1, our treatment condition creates an expectation that, in response to large reductions in operating expenses, auditors are likely to increase inquiry and testing *and* communicate their observations to the board. In contrast, in the control condition, auditors are expected to use a same-as-last-year (SALY) audit approach. We manipulate consistency with peer behavior by varying whether the current industry trend among peer firms is to reduce or maintain their R&D spending levels relative to prior years. Supporting our theory and predictions, results from Experiment 1 show that managers are less likely to use REM when they expect auditors to scrutinize their decisions (via increased inquiry and testing) and communicate their observations to the board, but that this effect only occurs when managers' decisions are inconsistent (rather than consistent) with peer behavior.

In Experiment 2, we more thoroughly test our theory and examine the importance of auditor-board communication by removing this communication component from our treatment condition, leaving only increased auditor scrutiny. The deterrence we predict and observe in Experiment 1 is based on the notion that deterrence of REM can be achieved when the auditor's ability to detect and the board's ability to penalize are linked via the communication component. PDT suggests that, without the communication component, increased auditor scrutiny alone is unlikely to deter managers' use of REM – due to auditors' inability to penalize such behavior. Consistent with our expectations, in Experiment 2 we find no evidence that increased auditor scrutiny alone (without communication to the board) deters REM.

Experiment 3 builds off our first two experiments by exploring when and how auditor actions impact opportunism when managers are able to use either operating decisions (i.e., REM) or accounting-based earnings management (AEM) to achieve reporting targets. In Experiment 3,

we hold constant that reducing R&D is inconsistent with peer behavior and manipulate the expected auditor response at three levels – Increased Auditor Scrutiny *with* Communication, Increased auditor Scrutiny *without* Communication, and Control (i.e., SALY audit approach). Additionally, we allow participants to choose among three decision options: use REM (i.e., delay operating expenditures) to reduce R&D expense and meet an earnings target, use AEM (i.e., adjust accounting estimates related to R&D equipment) to reduce R&D expense and meet the target, or use neither and miss the earnings target. Consistent with PDT, we predict and find that, with or without expected communication to the board, increased auditor scrutiny deters the use of AEM. Also consistent with PDT and results from our first two experiments, we find that REM is only deterred when auditors are expected to increase scrutiny and communicate their observations to the board. We also find evidence that increased auditor scrutiny *without* communication does not decrease the level of total earnings management, and that such scrutiny can cause managers to use REM as a substitute for AEM.

Our paper makes several important contributions to the accounting literature. While prior research has examined how investors, regulators, and the board of directors can constrain opportunistic operating decisions (Bushee 1998; Cheng 2004; Cohen et al. 2008), we provide evidence that, in some circumstances, auditors can also play a role in deterring such behavior. Specifically, in Experiment 1 we demonstrate that, when coupled with communication to the board, increased audit scrutiny can deter opportunistic operating decisions that are inconsistent with peer behavior. That said, it is important to note that we do not observe deterrence effects when managers' opportunistic operating decisions are consistent with peer behavior. Thus, our study not only demonstrates how auditors can contribute to the deterrence of REM, but also establishes a boundary condition for such a deterrence mechanism.

Additionally, we find evidence that without communication to the board, increased auditor scrutiny does not reduce the level of total earnings management. Rather, managers appear to prefer REM to AEM under such scrutiny. These findings complement and extend prior research that suggests a substitution effect between REM and AEM (Cogen et al. 2008; Zang 2012; Evans et al. 2015). While prior research documents a positive association between the level of REM and regulatory pressures (e.g., the passage of SOX), our study identifies increased auditor scrutiny as a specific casual mechanism for this substitution effect.

Last, although prior accounting studies show that increased auditor scrutiny (i.e., increased inquiry and testing) can deter aggressive accounting decisions (Chen et al. 2012), our study suggests that on its own, this form of auditor scrutiny is unlikely to deter REM. These findings highlight the importance of auditor-board communication and demonstrate how these two governance parties can work in tandem to deter manager opportunism. This type of communication is consistent with the suggestion of James Doty, former Chairman of the Public Company Accounting Oversight Board (PCAOB), that “Boards would benefit from knowing what auditors have learnt during the audit and [should] use that to obtain more insight into fraud risk or management integrity” (Doty 2016). Overall, our study demonstrates how the benefits of an audit can extend beyond the traditional realm of financial statement assurance and improve the quality of managers’ operating decisions.

II. BACKGROUND, THEORY, AND HYPOTHESIS DEVELOPMENT

Operational Opportunism and Perceptual Deterrence Theory

Prior research has widely shown that managers will underinvest in R&D and significantly reduce other discretionary expenses to meet short-term earnings targets (e.g., Baber, Fairfield, and Haggard 1991; Dechow and Sloan 1991; Bushee 1998; Graham et al. 2005, Roychowdhury 2006).

Research suggests that this opportunistic practice, commonly known as REM, has increased significantly since the passage of SOX, likely because this behavior is difficult to detect and does not violate GAAP (Cohen et al. 2008; Dichev et al. 2013). Although there are mixed perspectives regarding the acceptability of this practice (e.g., Kaplan 2001; Bentley, Bloomfield, Bloomfield, and Lambert 2018), recent research consistently shows that the use of REM can negatively affect companies in the long run (Bhojraj et al. 2009; Cohen and Zarowin 2010; Kim and Sohn 2013; Vorst 2016; Khurana, Pereira, and Zhang 2017; Bereskin, Hsu, and Rotenberg 2017). For example, research suggests that the use of REM can lead to a higher cost of capital (Kim and Sohn 2013), lower return on assets (Vorst 2016), increased stock price crash risk (Khurana et al. 2017), and decreased future innovation output (Bereskin et al. 2017).³ Despite the potentially harmful effects, there is limited research examining mechanisms that can deter these opportunistic, and likely shortsighted, operating decisions (Kothari et al. 2016). In this paper, we use Perceptual Deterrence Theory (PDT) to examine when and how auditor actions can contribute towards the deterrence of operational opportunism.

PDT posits that when considering whether to engage in an illegal or unethical activity, decision-makers will simultaneously consider both the perceived likelihood of being caught and the expected punishment (Nagin and Pogarsky 2001; Strelan and Boeckmann 2006). PDT is the theoretical backbone to many criminal justice systems worldwide and as such, there is a considerable amount of research investigating the extent to which PDT appropriately explains and predicts the deterrence of unwanted behaviors (Nagin 1998). This stream of research generally supports the notion that significant deterrence of unwanted behaviors can be achieved through

³ Though the vast majority of research suggests that REM has negative long-term consequences for firms, it is important to note that two studies find evidence suggesting that REM does not negatively affect subsequent operating performance (Gunny 2010; Taylor and Xu 2010). It is also important to acknowledge that investors with shorter investment horizons may prefer management to use REM rather than miss an earnings target (Bushee 1998).

increasing the perceived likelihood of detection and the associated penalties (Nagin 1998; Apel 2013). Importantly though, evidence suggests that the likelihood of detection and the potential punishment must work in tandem to achieve significant deterrence. That is, deterrence is most likely to occur when both components are simultaneously present (Ritchey and Nicholson-Crotty 2011; Evans et al. 2015). For example, Ritchey and Nicholson-Crotty (2011) examine the association between speed limits and traffic fatalities and conclude that, “fines have a modest impact on fatalities unless states employ a sufficient number of troopers to enforce posted limits” (p. 329). In other words, increased punishment with little likelihood of detection, or an increased likelihood of detection without meaningful punishment, will not likely result in deterrence.

While PDT is conceptually straightforward and widely-supported by prior research, the extent to which this theory can generalize to auditors’ deterrence of REM is uncertain for a few reasons. First, although PDT appears to be particularly useful for understanding the determinants of traditional criminal behaviors (e.g., theft, traffic violations, drug-use), research finds mixed evidence regarding the deterrence of criminal behaviors in corporate settings (Schell-Busey, Simpson, Rorie, and Alper 2016; Yaeger 2016). This research suggests that due to complex incentive schemes and organizational structures, legal deterrence of corporate crime is particularly difficult to achieve. Second, PDT is typically applied to individuals’ illegal actions. However, the use of REM does not violate GAAP, nor is it an illegal or fraudulent activity. At the same time, given that REM can be motivated by personal compensation factors rather than shareholders’ interests (e.g., Graham et al. 2005), one could consider the use of REM to be a violation of managers’ fiduciary responsibility. Therefore, REM falls into a “grey area” for managers. Lastly, PDT suggests that deterrence is most likely to occur when both likelihood of detection and potential punishment are simultaneously present. Auditors, who are primarily responsible for

assuring that financial statements are not materially misstated, do not have the ability to punish managers' operational opportunism. Hence, it remains an empirical question as to whether PDT is still applicable in cases where the source of detection does not have the ability to punish.

Auditor Detection of Operational Opportunism

Recent research indicates that it is not uncommon for auditors to detect the use of REM through the normal course of their audit (Commerford et al. 2016). Specifically, when managers significantly reduce discretionary expenses, the resulting account fluctuations are likely to be identified by auditors' analytical procedures (Commerford et al. 2016). Additionally, when unusual fluctuations are identified, auditors are required to scrutinize those fluctuations (i.e., increased inquiry and testing; PCAOB 2010b). Therefore, auditors do not need to increase their audit efforts or engage in a targeted search to detect the use of REM. Rather, research suggests that the detection of REM is a normal byproduct of typical audit procedures.

Although auditors appear quite capable of detecting and scrutinizing managers' use of REM, if properly accounted for in the financial statements, auditors are limited in how they can respond to such behavior. For example, auditors cannot require managers to increase their discretionary expenditures. That said, research suggests that observing the use of REM can affect various auditor judgments and decisions. For example, observing REM can cause auditors to adjust their audit plans and discuss the issue with management (Commerford et al. 2016, 2018a). Recent research suggests that auditors consider the use of REM to be a signal of increased risk (e.g., the risk of material misstatement, business risk), which may lead to increased audit fees (Greiner, Kohlbeck, and Smith 2017) and auditor resignations (Kim and Park 2014; Commerford et al. 2018a). Similarly, research has found evidence that observing REM can cause auditors to perceive relatively poor tone-at-the-top, which increases the likelihood that they discuss such opportunistic

decisions with members of the board, particularly when the client narrowly beats an earnings target (Commerford et al. 2018a). Research also finds that, due to altered perceptions about management aggressiveness, the presence of REM can cause auditors to propose larger audit adjustments to managements' unrelated accounting estimates (Commerford, Hatfield, and Houston 2018b).

Even though these studies demonstrate that observing REM alters auditor judgments, existing research has not examined whether any of these auditor actions can influence managers' willingness to engage in this opportunistic behavior. It is important to note that none of these auditor responses directly penalizes managers' opportunistic operating decisions. Unlike a state trooper who has both the ability to detect traffic violations and the ability to impose fines (and a clear mandate to do so), auditors cannot directly penalize managers for making opportunistic operating decisions. PDT suggests that with little or no risk of penalty, managers' operational opportunism is likely unaffected by increased auditor scrutiny. Therefore, although research indicates that increased auditor scrutiny through inquiry and testing can deter managers' aggressive accounting choices (e.g., Chen et al. 2012), PDT suggests this type of auditor action is unlikely to deter the use of REM.

Linking Detection and Punishment

The preceding discussion describes how auditors appear quite able to detect and scrutinize potential operational opportunism, though they lack the ability (and any requirement) to directly penalize this behavior. One party that does possess the ability to penalize manager opportunism is the board. Research suggests that, on average, boards have a negative view of REM and attempt to constrain such behavior by adjusting management's compensation, employment contracts, and severance agreements (Dechow and Sloan 1991; Cheng 2004; Laux and Laux 2009; Chen et al. 2015b). At the same time, research suggests that, although the board can penalize managers'

opportunistic operating decisions, it might be difficult for them to detect such behavior on their own due to information asymmetry (Jensen 1993; Adams and Ferreira 2007; Armstrong et al. 2010; Chen et al. 2015a). Boards must often acquire information about operating decisions from managers, but managers are likely reluctant to provide information that indicates they have acted opportunistically (Jensen 1993; Adams and Ferreira 2007; Harris and Raviv 2008; Armstrong et al. 2010). Accordingly, Chen et al. (2015a) find that boards only reduce opportunistic earnings management when information acquisition costs are low, suggesting that boards struggle to identify opportunistic manager behavior when information acquisition costs are high. PDT suggests that if boards cannot effectively detect managers' opportunistic operating decisions, their role in constraining such behavior is limited.

In summary, auditors are able to detect and scrutinize operational opportunism through the normal course of their audit but are unable to penalize managers for this behavior. In contrast, boards possess the ability to penalize operational opportunism but struggle to detect such behavior. Recall that, according to PDT, deterrence is most likely to occur when there is a meaningful likelihood of detection *and* punishment (Evans et al. 2015; Ritchey and Nicholson-Crotty 2011). Put another way, deterrence occurs when the likelihood of detection is sufficiently linked to the likelihood of punishment. Without a clear link between the detection and penalization components, PDT suggests that managers will not be deterred from using REM.

We propose that one way to better link auditor detection and board penalization is to create an expectation that auditors will communicate their observations regarding potential operational opportunism to the board.⁴ Recent research suggests that auditors might engage in such

⁴ Auditors are most likely to communicate with audit committee members, which is a subset of the board of directors. However, for expositional purposes, we more simply reference communication to “the board” or “members of the board.”

communication due to concerns about increased risk (i.e., risk of material misstatement, business risk) and poor tone-at-the-top (Kim and Park 2014; Commerford et al. 2016; Commerford et al 2018a).⁵ Although auditors' communication to the board does not directly penalize managers' opportunistic choices, we propose that this type of communication can reduce the board's information acquisition costs, increase the overall transparency of managers' decisions, and create a stronger link between auditor detection and board penalization. Therefore, consistent with PDT, we expect that managers will be less likely to use REM when they expect auditors to scrutinize unusual operating decisions *and* communicate their observations to the board.

Consistency with Peer Behavior

One of the unique challenges associated with deterring REM is that it can be particularly difficult to differentiate REM from normal operating decisions (Cohen et al. 2008; Lo 2008; Dichev et al. 2013; Kothari et al. 2016; Commerford et al. 2018a). When managers' operating decisions deviate from industry or peer norms, those decisions are more likely to be regarded as an attempt to opportunistically alter earnings (Dichev et al. 2013). However, when a reduction in operating expenditures can be construed as consistent with peer behavior, it becomes less clear whether managers' operational decisions are made primarily to achieve short-term earnings targets or to follow industry norms. Thus, managers likely believe that when their operational decisions are consistent with peer behavior, those decisions are less conspicuous, and less likely to be identified as opportunistic.

⁵ We note that, though this is not explicitly required in the audit standards, this type of response to potential REM is consistent with regulations requiring auditors to inquire about unusual account fluctuations and communicate those observations with those charged with governance. For example, Auditing Standard 2201 requires that auditors communicate to the audit committee any significant risks identified during planning, as well as any significant transactions, which are unusual in nature, timing, or size (PCAOB 2007).

Additionally, research suggests that even if their opportunistic decisions are detected by auditors, managers could attempt to justify their decisions by referencing peer behavior. Prior accounting studies show that managers often use peer behavior to guide and justify their own aggressive financial reporting decisions (Farrell and Whidbee 2003; Brown 2014; Kedia, Koh, and Rajgopal 2015; Bratten, Payne, and Thomas 2016). For example, Brown (2014) finds that managers compare their behavior to peer behavior to help rationalize their use of accounting manipulations. Research also suggests that individuals believe their behavior is more justifiable and credible when it is consistent with peers (Kadous and Mercer 2011; Koonce et al. 2015). These studies suggest that managers will use peer behavior as a defense mechanism against claims of inappropriate behavior.

This discussion suggests consistency with peer behavior is an important contextual factor that likely moderates the extent to which auditor actions affect managers' propensity to use REM. That is, consistency with peers reduces the transparency of managers' opportunistic decisions and provides a plausible justification, which decreases the perceived risk of detection and penalization. Consequently, PDT suggests that auditor actions are not likely to deter REM when managers' operational choices appear to be consistent with peer behavior. Hence, we propose the following interaction hypothesis:

H1: Managers will be less likely to use REM when they expect auditors to increase scrutiny of unusual operating decisions and communicate their observations to the board, unless those decisions are consistent (rather than inconsistent) with peer behavior.

H1 is predicated on the notion that auditor detection and board penalization (of REM) are more strongly linked when there is an expectation that auditors will both scrutinize unusual operating decisions *and* communicate their observations to the board. PDT suggests that when detection and penalization are linked in this manner, deterrence is more likely to occur. H1 also

implies that, if the communication link is removed, increased auditor scrutiny alone (i.e., increased inquiry and testing) will not be an effective deterrent to operational opportunism.

We test H1 via two experiments. In Experiment 1, we create an expectation that, in response to potential REM (i.e., a significant reduction in operating expenditures), auditors will likely increase inquiry and testing and also communicate their observations to the board. Creating such a treatment allows us to investigate the conditions in which significant deterrence is most likely to occur and provides a relatively direct test of H1. However, this treatment also makes it difficult to determine whether any observed deterrence is due to the auditor's increased scrutiny or due to the expected communication with the board. Accordingly, in Experiment 2, we remove the expected communication between the auditor and the board, which allows us to more precisely test our theory. If we find no evidence of deterrence in Experiment 2, this would provide additional support for H1 and our theory that operational opportunism is most likely to be deterred when increased auditor scrutiny is paired with communication to the board, rather than increased scrutiny alone. Figure 1 provides an overview for how our treatment conditions differ in Experiments 1 and 2.

[Insert Figure 1 about here.]

III. EXPERIMENT 1

Participants

In our first experiment, we use 86 experienced corporate managers as participants, which we obtain through Qualtrics Panel, a third-party participant recruiting agency.⁶ In order to ensure

⁶ Recent accounting research has used web-based organizations to recruit participants (e.g., Pyzoha 2015). Qualtrics Panel is one such organization that aggregates panels, primarily from actively managed market research panels. To be selected, potential panelists must opt-in by submitting an initial registration requesting to participate in a panel. Panel participants that are likely to qualify, based on their profile attributes and the sample requested, are randomly selected and invited to participate. Participants are compensated based on their profile characteristics and the length of the survey. Various incentives are used to compensate participants, including: cash, airline miles, gift cards, redeemable points, sweepstakes entrances, and vouchers.

that participants have sufficient experience to make the required judgments, participants respond to a set of screening questions at the start of the study regarding their management experiences as well as experience working with auditors. In order to be eligible to participate in our experiment, participants need to have at least 10 years of corporate management experience and have previous experience working with auditors. On average, participants report 25.2 years of work experience and report current position titles that include CEO (10.5%); CFO (5.8%); COO (3.5%); Controller (4.7%); Director (14.0%); President/Partner (5.8%); Vice President (5.8%), and other corporate management positions (49.9%).⁷

In order to provide additional assurance that our participants are appropriately qualified and attentive to our experimental materials, we also require all participants to demonstrate they understand that companies should generally prefer projects with higher Net Present Value (NPV) versus lower NPV. We obtain 112 completed responses; however, 26 participants indicate that companies should prefer projects with lower NPV. Thus, we exclude these participants' responses from our analyses, yielding a final sample of 86 participants. However, our results and conclusions do not significantly differ when these responses are included in the analyses.⁸

Experimental Task

We use Qualtrics, a web-based software tool, to administer 2 x 2 between-participants experiment. In the experiment, we ask participants to help Jason, the manager of a hypothetical consumer audio products company, choose one R&D project from two alternatives based on information provided.⁹ We first provide participants with the company's background information

⁷ Participants provide the titles of their current positions in an open response format, and their titles vary greatly. The other category includes positions such as Operation Manager, CTO, and Regional Manager. Additionally, two participants choose not to disclose their years of work experience.

⁸ When including the 26 responses in our analyses, the pattern of results is similar, and the interaction effect predicted in H1 is still marginally significant (p -value = 0.08).

⁹ We ask participants to help Jason make the decision, instead of making the decision on their own behalf, in order to reduce any social desirability bias associated with making an opportunistic decision (Epley and Dunning 2000).

as well as information about the two potential projects. The experimental materials indicate that Project A requires a higher initial investment and has a higher NPV, while Project B requires a lower initial investment but has a lower NPV. Importantly, if Project A is chosen, the company will most likely miss the consensus analyst EPS forecasts for both the fourth quarter and the fiscal year. Additionally, if Project A is chosen, Jason will lose his annual bonus. In contrast, if Project B is chosen, the company will most likely beat the EPS forecasts. Moreover, Jason will receive his annual bonus. By choosing Project B, participants demonstrate that they are willing to sacrifice future firm value in order to meet short-term performance thresholds (i.e., analysts' EPS forecasts and bonus threshold), consistent with operational opportunism (i.e., REM).¹⁰

Prior to making a project choice, participants also read information about the industry trend for R&D spending levels during the current year, which contains our consistency with peer behavior manipulation. Specifically, participants read that, during the first three quarters of the year, peer firms are either reducing or maintaining their levels of R&D expenditures relative to prior years. Before participants proceed to the next set of information, they respond to four attention check questions related to the R&D project choices and the peer behavior manipulation. The first three attention check questions test whether participants know which project 1) has a higher NPV, 2) would result in beating the earnings targets and meeting the bonus threshold, and 3) would result in R&D expenses that are lower than prior years. The fourth question assesses participants' knowledge regarding the industry trend for R&D expense levels during the first three quarters of the year. Correctly answering all four questions ensures that participants understand

¹⁰ The primary focus of our study is to determine the extent to which auditor actions can contribute to the deterrence of REM. In order to observe any deterrence effect, it is necessary to construct a scenario where a significant portion of managers are relatively likely to behave opportunistically. Therefore, in our study, managers have strong incentives to engage in REM by choosing Project B. That is, we emphasize that missing an earnings target would result in negative stock price consequences as well as negative personal financial consequences (missing a significant annual bonus). Our study is not intended to distinguish whether managers make opportunistic choices due to negative stock price consequences, negative personal financial consequences, or both.

our experimental materials and attend to our manipulation of consistency with peer behavior. Participants cannot proceed unless they provide correct responses to all four questions. If participants answer any of the four questions incorrectly, they are directed to review the case materials and then reattempt the questions until they answer all four questions correctly.

After correctly answering these questions, participants learn that Jason had a conversation with Katie, a general manager at another company, which uses the same auditor as Jason's company. We use this conversation to create (and manipulate) an expectation for how auditors might respond to unusual operating fluctuations. In their conversation, Katie shares her past experience regarding a large fluctuation in operating expenses. Katie explains that her company significantly reduced advertising expenses in the fourth quarter of the previous year and describes how the audit team reacted to the resulting account fluctuation.¹¹ After reading through this conversation, participants review a brief summary of the two projects. Participants then indicate which R&D project they would choose and rate their strength of preference for that choice. We are particularly interested in the proportion of participants who choose Project B, which is the relatively opportunistic R&D investment choice that allows the company to meet the EPS target and the manager to reach the bonus threshold. After participants respond to the main dependent variables, they answer a series of manipulation check questions and debriefing questions.

Independent Variables

Our first independent variable manipulates the expected auditor response to unusual operating decisions. Specifically, participants are either assigned to a treatment condition in which auditors are expected to increase scrutiny of unusual operating fluctuations and communicate their

¹¹ Given that REM can be accomplished through a variety of accounts, we chose to have Katie's company reduce advertising expenses instead of R&D expenses. This allows our findings regarding deterrence to generalize more broadly to the various forms of REM that managers might use. No information is provided about the motive for the reduction in advertising expenses (i.e., earnings management or business decision) in Katie's company.

observations with the board, or to a control condition in which auditors expected to employ a SALY audit approach. In the treatment condition, Katie explains that auditors responded to the significant fluctuation with relatively more inquiry and testing compared to other accounts and previous years. Importantly, she notes, “the auditors discussed the decrease in advertising expenses and my explanations with members of the board.” In contrast, in the control condition, Katie indicates that the level of inquiry and testing was similar to other accounts and previous years and that the auditors did not discuss the issue with members of the board.¹² This experimental manipulation allows us to compare manager behavior in an audit environment that theory suggests is most likely result in deterrence (i.e., when detection is linked to punishment), to manager behavior in an audit environment in which auditors are present, but are not expected to take any additional action in response to potential REM.¹³

Our second independent variable, consistency with peer behavior, is manipulated by varying peer firms’ R&D spending levels during the first three quarters of the current year. Specifically, the industry trend indicates peer firms have been either reducing or maintaining R&D expenses and that they are expected to continue to do so for the remainder of the year. Therefore, choosing Project B (i.e., reducing R&D expenditures) appears to be consistent with peer behavior when there is an industry trend of reducing levels of R&D spending. However, when peer firms

¹² It is important to note that auditor detection of REM is not at all certain in our experiment as the auditor actions observed by Katie may or may not be present on different or subsequent audits (i.e., the audit of Jason’s company). Thus, we do not manipulate the actual likelihood of detection. Rather, we manipulate the threat or possibility of detection, which is consistent with the perceptual nature of PDT.

¹³ This approach is consistent with prior research examining the deterrence effect of auditing on managers’ aggressive accounting choices (Uecker, Brief, and Kinney 1981; Schneider and Wilner 1990; Chen et al. 2012). For example, Uecker et al. (1981) compare a more aggressive auditor to relatively less aggressive auditor, while Schneider and Wilner (1990) compare the presence of an auditor to no auditor at all. Our experimental manipulation is most like the manipulation used by Chen et al. (2012), which compares various combinations of auditor actions to a SALY audit approach. However, it is important to note that all these studies focus solely on auditing as a deterrent to aggressive accounting choices rather than opportunistic operating decisions.

are maintaining their levels of R&D spending, choosing Project B is inconsistent with peer behavior. Participants are randomly assigned to one of the four resulting experimental conditions.

Manipulation Checks

We use two questions to evaluate whether we successfully manipulated participants' expectation for how the auditors are likely to respond to potential REM. First, using an 11-point scale (-5 = very unlikely; 5 = very likely), we ask participants to assess the likelihood that the auditors would ask Jason many questions about a significant reduction in R&D. Second, using the same scale, we ask participants to assess the likelihood that the auditors would discuss a significant reduction in R&D with members of the board. Results indicate we successfully manipulated expected auditor actions. In regards to increased auditor scrutiny, participants assess the likelihood that auditors would ask additional questions as higher in the treatment condition relative to the control condition (2.93 versus -0.87; p -value < 0.01).¹⁴ Similarly, regarding the expectation for auditor communication with the board about potential opportunism, participants in the treatment condition assess the likelihood that auditors would discuss the issue with the board as relatively higher compared to those in the control condition (2.80 versus -0.85; p -value < 0.01). To ensure that participants are attentive to our manipulation of consistency with peer behavior, we require participants to correctly recall the industry trend for R&D spending levels during the first three quarters of the year (i.e., whether peer firms are reducing or maintaining their R&D spending).¹⁵

Results

H1 predicts that managers will be less likely to use REM when they expect auditors to scrutinize unusual operating decisions and communicate their observations to the board, unless

¹⁴ Throughout the paper, unless noted otherwise, reported p -values are one-tailed or one-tailed equivalent due to directional expectations.

¹⁵ Participants are required to correctly answer this industry trend question before they can proceed with the task.

such behavior is consistent with peer behavior. The proportions of managers choosing Project B (the opportunistic choice) in all four conditions are presented in Table 1, Panel A. We also present the proportions graphically, by experimental conditions, in Figure 2. The proportions are visually consistent with our expectations. In order to formally test H1, we use a general linear model (GLM) with a logit link function and binomial distribution, and then conduct planned comparisons.¹⁶

[Insert Table 1 and Figure 2 about here]

The GLM results in Table 1, Panel B indicate the interaction between our independent variables is significant (p -value = 0.04). To better assess if the interaction is consistent with H1, we conduct planned comparisons using Fisher's Exact Tests, as presented in Table 1, Panel C. Consistent with H1, planned comparisons indicate our treatment, which creates an expectation that auditors will scrutinize and communicate with the board about potential REM, reduces the likelihood of managers making an opportunistic choice when doing so is inconsistent with the peer-firm industry trend (81.8% versus 47.8%; p -value = 0.02). However, our treatment does not have an impact on managers' decisions when the opportunistic choice appears to be *consistent* with peer firms (77.8% versus 82.6%; p -value = 0.71, two-tailed). Overall, the observed results are consistent with H1, indicating that auditor actions (i.e., increased scrutiny and communication to the board) can deter managers' opportunistic operating decisions. However, this deterrence effect is not present when managers' opportunistic decision appears to be consistent (rather than inconsistent) with peer behavior.¹⁷

¹⁶ Using a GLM model with logit link function and binomial distribution is equivalent to using a logistic model.

¹⁷ We also find support for H1 using a continuous measure of participants' project preference within a 2 x 2 analysis of variance (ANOVA). Results indicate that there is a significant interaction effect (F -value = 5.01, p -value = 0.01). Additionally, the mean pattern for participants' project preference is consistent with the proportions observed in Figure 2, and all planned comparisons are consistent with H1.

IV. EXPERIMENT 2

Experiment Overview

We conduct a second experiment to investigate the relative importance of auditor-board communication and to more precisely test our theory. The design and task of Experiment 2 are nearly identical to Experiment 1, with only one key modification to our treatment condition. In Experiment 2, for those in the treatment condition, Katie indicates that, in a similar situation in the prior year, the audit team conducted more extensive inquiry and testing. However, in contrast to Experiment 1, the treatment condition in Experiment 2 is devoid of any information referencing communication between the auditor and the board.¹⁸ Similar to Experiment 1, in our control condition for Experiment 2, auditors are expected to employ a SALY audit approach and there is no mention of auditor-board communication. Our theory implies that, if the communication component is not present, auditor scrutiny will not be an effective deterrent to REM.

Our second experiment also uses experienced corporate managers as participants, which we obtain through Qualtrics Panel. Consistent with our first experiment, participants are required to have at least 10 years of corporate management experience and experience working with auditors to be eligible to participate in the experiment. On average, participants report 23.8 years of work experience. To ensure our participants are qualified and attentive to our experimental materials, we require all participants to demonstrate they understand that companies should generally prefer projects with higher NPV. Of the 132 completed responses, 34 participants indicated that companies should prefer projects with lower NPV. Responses from these 34

¹⁸ Alternatively, we could have removed the increased scrutiny component of our treatment condition, leaving only the communication component. However, removing the communication component is a more natural and realistic approach because instances of potential REM would first need to be identified before they could be a topic of discussion for auditors and members of the board.

participants are removed from further analyses, resulting in a final sample of 98 participants. However, including these participant responses does not significantly alter our results.¹⁹

Similar to Experiment 1, we assess the effectiveness of our treatment condition, by asking participants to assess the likelihood that the auditors would ask Jason additional questions about a significant reduction in R&D using an 11-point scale (-5 = very unlikely; 5 = very likely). Compared to participants in the control condition, participants in the treatment condition assessed the likelihood that auditors would ask additional questions as significantly higher (2.65 versus -0.65; p -value <0.01). Additionally, same as in Experiment 1, all participants are required to correctly recall the industry trend for R&D spending levels during the first three quarters of the year (i.e., whether peer firms are reducing or maintaining their R&D spending).²⁰

Results

The results for Experiment 2 are reported in Table 2. We find no evidence that this alternative treatment (i.e., scrutiny *without* communication) deters REM. As reported in Table 2, Panel A, the proportion of managers choosing Project B in each experimental condition ranges from 54 percent to 71 percent. However, GLM results (binomial distribution with logit link function) reported in Table 2, Panel B indicate that neither main effect is significant (both p -values > 0.49, two-tailed). Additionally, in contrast to results from Experiment 1, we do not find a significant interaction effect between our independent variables (p -value = 0.72, two-tailed). To be consistent with our analysis in Experiment 1, we also compare the proportions between conditions using Fisher's Exact Tests (See Table 2, Panel C) and none of the comparisons are

¹⁹ When including the 34 responses in our analyses, the pattern of results is similar. Specifically, both main effects are insignificant (both p -values > 0.31, two-tailed) and the interaction effect also is insignificant (p -value = 0.84, two-tailed).

²⁰ Consistent with Experiment 1, we also ask participants three attention check questions test whether participants know which project 1) has a higher NPV, 2) would result in beating the earnings targets and meeting the bonus threshold, and 3) would result in R&D expenses that are lower than prior years. Participants must answer correctly before proceeding.

statistically significant (all p -values > 0.37 , two-tailed).²¹ Thus, consistent with PDT and our expectations, when auditors are not expected to discuss unusual operating fluctuations with the board, we find no evidence that increased auditor scrutiny alone (i.e., without communication to the board) deters managers from making opportunistic and shortsighted operating decisions, even when those decisions are inconsistent with peer behavior.

[Insert Table 2 about here]

In summary, in Experiment 1, we find that increased auditor scrutiny *with* communication to the board can deter REM when such behavior is inconsistent with peer behavior. In Experiment 2, when increased auditor scrutiny is not coupled with expected communication to the board, we find no evidence of significant deterrence. One must always be cautious when comparing results across separate experiments. However, given that we were careful to make only one small theory-motivated modification to our treatment condition in Experiment 2 (i.e., removing the communication component), we believe the results of our first two experiments provide support for the assertion that auditor communication to the board is quite important for deterring REM.

V. EXPERIMENT 3

Motivation and Hypotheses

We conduct a third experiment to examine whether our results can be replicated in a more complex and realistic setting. In our first two experiments, participants are only given two decision options: 1) engage in REM and beat the earnings target, or 2) do not engage in REM and miss the earnings target. Yet in reality, managers have a third option – accounting-based earnings management (AEM). Prior research suggests that, when AEM is constrained, managers

²¹ Consistent with Experiment 1, we also examine participants' project preference. ANOVA results indicate that neither main effect is significant (both p -values > 0.18 , two-tailed) and the interaction effect is insignificant (F -value = 0.06; p -value = 0.80, two-tailed), consistent with participants' binary project choices in Table 2. Furthermore, none of the planned comparisons are significant (all p -values > 0.26 , two-tailed).

are more likely to rely on REM to achieve their desired outcomes (e.g., Cohen et al. 2008; Zang 2012; Evans et al. 2015). Given that these two earnings management methods are substitutes, it is worthwhile to explore whether the deterrence of REM (observed in Experiment 1) might unintentionally affect managers' propensity to use AEM. Therefore, in Experiment 3, we allow participants to choose among three decision options: use REM to meet an earnings target, use AEM to meet an earnings target, or use neither and miss the earnings target. Expanding the available decision options in this way also increases the generalizability of our findings.

In addition, rather than comparing effects across separate experiments, Experiment 3 provides a more direct comparison of the treatment conditions employed in our first two experiments. Accordingly, in Experiment 3, we include three experimental conditions; Increased Auditor Scrutiny *with* Communication (i.e., the treatment condition from Experiment 1), Increased Auditor Scrutiny *without* Communication (i.e., the treatment condition from Experiment 2), and a SALY audit approach (i.e., the same control condition in the previous two experiments).²²

As previously discussed, PDT proposes that the likelihood of detection and the potential punishment work in tandem to achieve deterrence and that the simultaneous presence of both components is necessary for such deterrence (Evans et al. 2015; Ritchey and Nicholson-Crotty 2011). If management makes aggressive accounting estimates, the auditor can propose adjustments to management's estimates (PCAOB 2010a, Nelson et al. 2002). Thus, auditors are equipped to detect AEM, and they are also able to directly and independently penalize it. Accordingly, PDT suggests that, with or without communication to the board, increased auditor scrutiny will deter

²² In our first two experiments, we find no evidence that auditor actions function as an effective deterrent when management's opportunism can be construed as consistent with peer behavior. Therefore, in Experiment 3, we focus solely on the conditions in which auditor actions are most likely to be an effective deterrent to manager opportunism. Accordingly, in Experiment 3 the industry trend is held constant across all conditions, such that reducing R&D is inconsistent with peer behavior.

the use of AEM. That is, relative to a SALY audit, we expect to observe deterrence of AEM in both treatment conditions.

However, our expectations regarding managers' use of REM differ. Unlike AEM, auditors can detect REM, but they cannot directly penalize managers for engaging in such behavior. Therefore, consistent with PDT and findings from our first two experiments, we predict that deterrence of REM is more likely to occur when increased auditor scrutiny is paired with communication to the board. Based on our theory, we propose the following hypotheses:

H2a: Increased auditor scrutiny, with or without communication to the board, will deter the use of AEM.

H2b: Increased auditor scrutiny with communication to the board is more likely to deter REM than increased auditor scrutiny without communication to the board.

When one considers these predictions in conjunction with the existing earnings management research, which suggests managers will resort to REM when AEM is constrained (e.g., Cohen et al. 2008; Zang 2012; Evans et al. 2015), our hypotheses also have implications for how our treatment conditions will differ in terms of the level and mix of total earnings management (i.e., the combined usage of either REM or AEM). First, if increased auditor scrutiny *without* communication is expected to deter AEM, but not REM, prior earnings management research suggests managers will be more likely to use REM (relative to AEM) under such conditions. In other words, we expect managers to use REM as a substitute for AEM when increased auditor scrutiny (without communication) is expected. Consequently, we expect that, relative to a SALY audit, the overall level of earnings management will not decline when there is increased auditor scrutiny *without* communication. In contrast, since increased auditor scrutiny *with* communication is expected to deter both REM and AEM, we expect the overall level of earnings management to decline relative to the other two conditions.

Experiment Overview

Consistent with our first two experiments, we ask participants to help Jason, the manager of a hypothetical consumer audio products company to make a decision related to R&D. Participants are informed that the company is projected to miss analysts' consensus forecast for earnings per share and that Jason is deciding if and how to intervene to beat this earnings target. Participants are presented with three options. First, Jason can reduce R&D expenses by adjusting accounting estimates related to the depreciation of equipment used in R&D, which is consistent with AEM. His second option is to delay R&D expenditures until after year-end, consistent with REM. Lastly, Jason can choose to not use either AEM or REM and miss the earnings target (i.e., No Earnings Management or No EM).

In Experiment 3, we also use experienced corporate managers as participants, which we obtain through Qualtrics Panel. Again, participants are required to have at least 10 years of corporate management experience and experience working with auditors to be eligible to participate in the experiment. On average, participants report 30.0 years of work experience. To ensure our participants are qualified and attentive to our experimental materials, we require all participants to demonstrate they understand that companies should generally prefer projects with higher NPV. In Experiment 3, participants that did not answer this question correctly, or did not possess the requisite experience, were not allowed to continue to the experiment.²³ We receive 162 completed responses from corporate manager participants.

²³ Similar to Experiments 1 and 2, all participants are also required to correctly answer three attention check questions that test whether participants attended to 1) which decision options would result in beating the earnings targets and meeting the bonus threshold, 2) which decision options would result in R&D expenses that are lower than prior years, and 3) the industry trend for R&D spending levels during the first three quarters of the year. In addition, we require participants to demonstrate they understand that accounting standards provide clear authoritative guidance regarding changes in accounting estimates and that delaying R&D projects could slow the overall progress of the company's R&D efforts. If participants answer any of the questions incorrectly, they are directed to review the case materials and then reattempt the questions. If participants are unable to answer the questions correctly on their second attempt, they are thanked for their participation and dismissed from the study.

Participants are randomly assigned to one of three experimental conditions: Increased Auditor Scrutiny *with* Communication, Increased Auditor Scrutiny *without* Communication, or Control (i.e., SALY audit). Similar to Experiment 1, we assess the effectiveness of our manipulations by asking participants to assess the likelihood auditors would ask Jason additional questions about a significant reduction in R&D and the likelihood auditors would discuss a significant reduction in R&D with members of the board, both using an 11-point scale (-5 = very unlikely; 5 = very likely). Participants in both treatment conditions assessed the likelihood that auditors would ask additional questions as higher relative to the control condition (3.70 and 3.74 versus 0.26; p -values < 0.01). Additionally, participants assess the likelihood auditors would discuss the issue with the board as higher in the Increased Auditor Scrutiny *with* Communication condition relative to the other two conditions (3.59 versus 0.89 and -0.27; p -values < 0.01).

Results

The results for Experiment 3 are reported in Table 3. The proportions of managers choosing each decision option (REM, AEM, or No EM) in each condition are presented in Table 3, Panel A. We also present the proportions graphically, by experimental condition, in Figure 3. The proportions are visually consistent with our expectations. To formally test our predictions, we use three general linear models (binomial distribution with logit link). Results for these models are presented in Table 3, Panel B, Panel C, and Panel D.

[Insert Table 3 and Figure 3 about here]

H2a predicts that AEM will be deterred by increased auditor scrutiny, with or without communication to the board. As presented in Table 3, Panel B, we find that compared to participants in the SALY condition (33.3%), fewer participants in both the Increased Auditor Scrutiny *with* Communication condition and the Increased Auditor Scrutiny *without*

Communication condition chose to use AEM (20.0% and 21.8%, respectively; p -values = 0.06 and 0.09, respectively), supporting H2a. In addition, there is no difference between the two treatment conditions (p -value = 0.82, two-tailed). These results provide evidence that increased auditor scrutiny reduces AEM regardless of whether auditors are expected to communicate their observations to the board.

H2b predicts that REM is more likely to be deterred when increased auditor scrutiny is paired with communication to the board than when the communication component is absent. Results reported in Table 3, Panel C indicate that the proportion of managers choosing REM is significantly lower in the Increased Auditor Scrutiny *with* Communication condition (32.0%) compared to the Increased Auditor Scrutiny *without* Communication condition (47.3%; p -value = 0.06), consistent with H2b.

In fact, we find that the proportion of managers using REM is *higher* in the Increased Auditor Scrutiny *without* Communication condition (47.3%) compared to those in the SALY condition (31.6%; p -value = 0.05). Although the proportion of managers using REM increases, we find no change in the level of total earnings management in the Increased Auditor Scrutiny *without* Communication condition compared to the SALY condition (see Table 3, Panel D; 69.1% versus 64.9%, respectively; p -value = 0.64, two-tailed). Given that we also find Increased Auditor Scrutiny *without* Communication decreases the proportion of managers using AEM, these results are consistent with the notion that managers will resort to REM to achieve their desired outcomes when AEM is constrained (e.g., Cohen et al. 2008; Zang 2012; Evans et al. 2015). That is, managers appear to use REM as a substitute for AEM under such scrutiny.²⁴

²⁴ We also test this assertion using a multinomial regression (untabulated) that examines the proportion of participants choosing REM relative to those choosing AEM. We find that, relative to the proportion of participants choosing AEM, the proportion of participants choosing REM increases significantly between the control condition (i.e., a SALY audit) and Increased Auditor Scrutiny *without* Communication (33.3% AEM and 31.6% REM in

That said, in our experimental setting, this substitution between AEM and REM does not operate in both directions, as managers do not appear to “switch” back to AEM in the Increased Auditor Scrutiny *with* Communication condition when REM is constrained. Instead, we find that total earnings management is significantly lower in the Increased Auditor Scrutiny *with* Communication (52.0%) condition than in the Increased Auditor Scrutiny *without* Communication condition (69.1%; p -value = 0.04), as well as the control condition (64.9%; p -value = 0.09).²⁵ This is consistent with our expectation that the Increased Auditor Scrutiny *with* Communication condition constrains both AEM and REM.

Overall, our Experiment 3 results suggest that while increased auditor scrutiny *without* communication can deter the use of AEM, it can also induce greater usage of REM. However, our results also suggest that the combination of increased auditor scrutiny and communication to the board reduces total earnings management, both in the form of AEM and REM.

VI. CONCLUSION

We conduct three experiments using experienced corporate managers as participants to examine when and how auditor actions can help deter managers’ opportunistic operating decisions. In Experiment 1, we find when auditors increase scrutiny and communicate their observations to the board, operational opportunism can be deterred when such decisions are inconsistent (but not consistent) with peer behavior. In Experiment 2, we do not find evidence that increased auditor scrutiny alone (i.e., without communication to the board) deters operational opportunism,

SALY versus 21.8% AEM and 47.3% REM in Increased Auditor Scrutiny *without* Communication; p -value = 0.04). This result provides additional evidence that managers will substitute REM for AEM, when AEM is constrained.

²⁵ Using a multinomial regression, we find that relative to the proportion of participants choosing REM, the proportion of participants choosing to not manage earnings (No EM) is significantly higher in the Increased Auditor Scrutiny *with* Communication condition than in the Increased Auditor Scrutiny *without* Communication condition (47.3% REM and 30.9% No EM in Increased Auditor Scrutiny *without* Communication versus 32.0% REM and 48.0% No EM in Increased Auditor Scrutiny *with* Communication ; p -value = 0.03, untabulated). This result provides evidence that when increased auditor scrutiny is supplemented with communication to the board, managers’ preferences switch from REM to No EM – consistent with deterrence.

regardless of whether decisions are consistent or inconsistent with peer behavior. In Experiment 3, we expand the choices available to managers by having them choose whether to engage in AEM, REM, or neither. Additionally, we include all three auditor response conditions from our previous experiments – Increased Auditor Scrutiny *with* Communication, Increased Auditor Scrutiny *without* Communication, and a SALY audit – and hold constant that reduced R&D is inconsistent with peer behavior. Consistent with prior research and our theory, we find that increased auditor scrutiny alone (i.e., without communication) deters AEM but increases REM, resulting in a similar level of total earnings management (i.e., substitution). In contrast, we find that when increased auditor scrutiny is paired with auditor-board communication, both AEM and REM are deterred, and consequently, there is a reduction in total earnings management.

Research shows managers' opportunistic operating decisions can negatively affect firms' long-term performance (Cohen and Zarowin 2010; Graham et al. 2005; Vorst 2016), and that it is difficult for financial statement users and interested parties to detect such behavior (Dichev et al. 2013; Kothari et al. 2016). Therefore, identifying mechanisms to deter such behavior should be of interest to regulators, investors, and boards. In discussing the role of auditors in corporate governance, James Doty, former Chairman of the PCAOB stated that, "Auditors were intended to be the eyes through which both directors and investors search for the truth" (Doty 2016). In our study, we demonstrate that auditors can be the eyes through which the board becomes aware of opportunistic operating decisions. Auditor-board communication is an efficient and practical way to reduce the information acquisition costs for boards, and our findings suggest that such communication can play a meaningful role in the deterrence of undesirable manager behavior.

Our study also has significant theoretical contributions to the accounting literature. Libby and Seybert (2009) call for more experimental research investigating the conditions under which

managers are willing to sacrifice cash flows (through REM) in order to boost earnings. In response to this call, our paper provides evidence that auditor actions can deter managers' use of REM. We also show that such a deterrence effect is not because auditors can penalize this form of opportunistic behavior, but because auditors can communicate their observations to the board, who has the ability to penalize managers' opportunistic choices. Consistent with PDT, auditor-board communication creates a clearer path from detection to penalization, which leads to deterrence. While prior studies show more effective and frequent communication between auditors and the board can enhance the quality of financial reporting (Beatty 1989; Jones 1996; Francis, Maydew, and Sparks 1999), our findings contribute to this literature by showing such communication can also be utilized to reduce the prevalence of operational opportunism. Thus, our study demonstrates that the benefits of an audit (particularly when there is open communication between the auditor and the board) can extend beyond the traditional domain of financial statement assurance and improve managerial decision-making quality, complementing recent archival research that finds a positive relationship between high quality auditors and the quality of managers' investment and operating decisions (e.g., Bae, Choi, Dhaliwal, and Lamoreaux 2017).

Our findings also complement and extend prior research examining earnings management practices. Research finds that the use of REM is positively associated with the passage of SOX (Cohen et al. 2008; Zang 2012), the issuance of Securities and Exchange Commission comment letters (Cunningham, Johnson, Johnson, and Lisic 2018), and more effective regulatory environments (Evans et al. 2015). Evidence also indicates that the prevalence of AEM is simultaneously declining, which suggests managers will use REM as a substitute for AEM when AEM is constrained (e.g., Cohen et al. 2008). Yet, as noted by Cohen et al. (2008), the substitution effect observed in archival data could be due to a variety of reasons, including the passage of SOX,

highly publicized Department of Justice enforcement actions, and/or increased investor and auditor vigilance. Accordingly, Libby, Rennekamp, and Seybert (2015) discuss the limitations of using archival methods to investigate how regulatory changes affect managers' actions. Libby et al. (2015) also emphasize the need for more experimental research investigating the causal mechanisms underlying the effects of regulatory changes. Our results complement prior research by providing experimental evidence that managers use REM as a substitute for AEM. However, our experimental research method also allows us to extend prior research by identifying increased auditor scrutiny as a specific causal explanation for this substitution effect. That said, there are likely other factors that can induce earnings management substitution, which future research should work to identify.

While the current study demonstrates that auditor actions can be an effective deterrent to REM, regulators and investors should be aware of the limited efficacy of our proposed REM deterrence mechanism (i.e., increased auditor scrutiny with communication to the board), which is only effective when REM decisions are inconsistent (rather than consistent) with peer behavior. Additionally, our results suggest that if increased inquiry and testing by auditors is not accompanied by auditor-board communication, then deterrence of REM is not likely to occur. Future research could examine whether other auditor responses to potential REM (e.g., discussion with management, resignation) might also result in deterrence. Additionally, even though our proposed mechanism does not require additional audit effort, it should be noted that auditor communication to the board regarding potentially opportunistic operating decisions might strain the auditor's relationship with management. For example, managers might become less forthcoming on issues that are more directly related to the fair statement of the financial statements

(e.g., accounting estimates). Future research should examine whether this course of auditor action might have unintended consequences.

Our study is subject to some limitations. First, in our study we only examine managers' opportunistic decisions within the R&D account. Future studies can examine whether pairing increased auditor scrutiny with communication to board has a similar effect on other operating decisions. Additionally, future studies could investigate how managers might use multiple operating accounts to strategically achieve their financial reporting targets (e.g. Bowlin 2011). Second, rather than manipulating the actual auditor action, we manipulate participants' anticipated auditor response based on a colleague's previous experience. While manipulating auditor actions in this way biases us against finding results, it might be interesting to examine whether the effects documented in our study are stronger in cases where managers personally experience different auditor reactions. Lastly, our study primarily focuses on the actions auditors can take to deter operational opportunism. However, we acknowledge that there are several other interested parties (e.g., analysts, investors, and regulators) that also monitor the decisions of managers. Future experimentation is needed to better understand how the actions of these other monitoring parties might also affect the earnings management decisions of managers.

REFERENCES

- Adams, R. B., and D. Ferreira. 2007. A theory of friendly boards. *The Journal of Finance* 62: 217 – 250.
- Apel, R. 2013. Sanctions, perceptions, and crime: Implications for criminal deterrence. *Journal of Quantitative Criminology* 29 (1): 67-101.
- Armstrong, C. S., W. R. Guay, and J. P. Weber. 2010. The role of information and financial reporting in corporate governance and debt contracting. *Journal of Accounting and Economics* 50: 179 – 234.
- Baber, W. R., P. M. Fairfield, J. A. Haggard. 1991. The effect of concern about reported income on discretionary spending decisions: The case of research and development. *The Accounting Review* 66: 818-829.
- Bae, G. S., S. U. Choi, D. S. Dhaliwal, and P. T. Lamoreaux. 2017. Auditors and client investment efficiency. *The Accounting Review* 92 (2): 19-40.
- Beatty, R. P. 1989. Auditor reputation and the pricing of initial public offerings. *The Accounting Review* 64: 693-709.
- Bentley, J. W., M. J. Bloomfield, R. J. Bloomfield, and T. A. Lambert. 2018. *Moral Attitudes Toward Measurement Management*. Working paper, University of Massachusetts - Amherst. Available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2823705.
- Bereskin, F.L., P. H. Hsu, and W. Rotenberg. 2017. The real effects of real earnings management: Evidence from innovation. *Contemporary Accounting Research*. In Press.
- Bhojraj, S., P. Hribar, M. Picconi, and J. McInnis. 2009. Making sense of cents: An examination of firms that marginally miss or beat analyst forecasts. *Journal of Finance* 64: 2361-2388.
- Bowlin, K. 2011. Risk-based auditing, strategic prompts, and auditor sensitivity to strategic risk of fraud. *The Accounting Review* 86: 1231-1253.
- Bratten, B., J. L. Payne, and W. B. Thomas. 2016. Earnings management: Do firms play “follow the leader”? *Contemporary Accounting Research* 33: 616-643.
- Brown, T. J. 2014. Advantageous comparison and rationalization of earnings management. *Journal of Accounting Research* 52: 849-876.
- Bushee, B. J. 1998. The influence of institutional investors on myopic R&D investment behavior. *The Accounting Review* 73: 305-333.
- Chen, Q., K. Kelly, and S. E. Salterio. 2012. Do changes in audit actions and attitudes consistent with increased auditor scepticism deter aggressive earnings management? An experimental investigation. *Accounting, Organizations and Society* 37: 95-115.
- Chen, X., Q. Cheng, and X. Wang. 2015a. Does increased board independence reduce earnings management? Evidence from recent regulatory reforms. *Review of Accounting Studies* 20: 899 - 933.
- Chen, X., Q. Cheng, A. Lo, and X. Wang. 2015b. CEO contractual protection and managerial short-termism. *The Accounting Review* 90: 1871-1906.

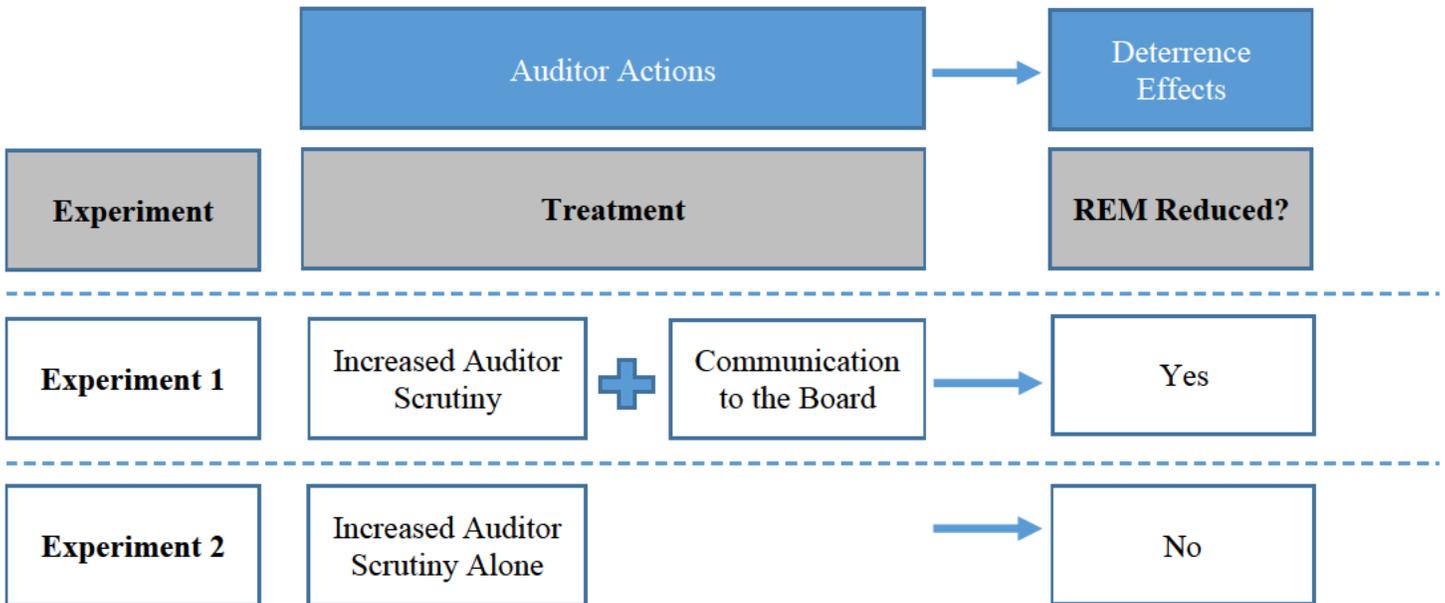
- Cheng, S. 2004. R&D expenditures and CEO compensation. *The Accounting Review* 78: 305-328.
- Cohen, D., A. Dey, and T. Z. Lys. 2008. Real and accrual-based earnings management in the pre- and post-Sarbanes-Oxley periods. *The Accounting Review* 83: 757-787.
- Cohen, D., and P. Zarowin. 2010. Accrual-based and real earnings management activities around seasoned equity offerings. *Journal of Accounting & Economics* 50: 2-19.
- Commerford, B., D. Hermanson, R. Houston, and M. Peters. 2016. Real earnings management: A threat to auditor comfort? *Auditing: A Journal of Practice & Theory* 35: 39-56.
- Commerford, B., D. Hermanson, R. Houston, and M. Peters. 2018a. Auditor sensitivity to real earnings management: The importance of ambiguity and earnings context. *Contemporary Accounting Research*. In Press.
- Commerford, B. P., R. C. Hatfield, and R. W. Houston. 2018b. The effect of real earnings management on auditor scrutiny of management's other financial reporting decisions. *The Accounting Review*. In Press.
- Cunningham, L. M., B. A. Johnson, E. S. Johnson, and L. L. Lisic. 2018. *The Switch Up: An Examination of Changes in Earnings Management after Receiving SEC Comment Letters*. Working paper, University of Tennessee. Available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2760638.
- Dechow, P. M., and R. G. Sloan. 1991. Executive incentives and the horizon problem. *Journal of Accounting and Economics* 14: 51-89.
- Dichev, I. D., J. R. Graham, C. R. Harvey, and S. Rajgopal. 2013. Earnings quality: Evidence from the field. *Journal of Accounting and Economics* 56: 561-33.
- Doty, J. 2016. *The Role of the Bar and the Audit in Shareholder-Director Relationships*. (speech, Nashville, TN, October 7, 2016), PCAOB. <https://pcaobus.org/News/Speech/Pages/Doty-speech-Vanderbilt-10-7-16.aspx>
- Epley, N., and D. Dunning. 2000. Feeling "holier than thou": Are self-serving assessments produced by errors in self-or social prediction? *Journal of Personality and Social Psychology* 79: 861-875.
- Evans, M. E., R. W. Houston, M. F. Peters, and J. H. Pratt. 2015. Reporting regulatory environments and earnings management: U.S. and non-U.S. firms using U.S. GAAP or IFRS. *The Accounting Review* 90: 1969-1994.
- Farrell, K. A., and D. A. Whidbee. 2003. Impact of firm performance expectations on CEO turnover and replacement decisions. *Journal of Accounting and Economics* 36: 165-196.
- Francis, J. R., E. L. Maydew, and H. C. Sparks. 1999. The role of Big 6 auditors in the credible reporting of accruals. *Auditing: A Journal of Practice & Theory* 18: 17-34.
- Gino, F., S. Ayal, and D. Ariely. 2009. Contagion and differentiation in unethical behavior the effect of one bad apple on the barrel. *Psychological Science* 20: 393-398.
- Graham, J. R., C. R. Harvey, and S. Rajgopal. 2005. The economic implications of corporate financial reporting. *Journal of Accounting & Economic* 40: 3-73.

- Greiner, A. J., M. J. Kohlbeck, and T. J. Smith. 2017. The relationship between aggressive real earnings management and current and future audit fees. *Auditing: A Journal of Practice & Theory* 36: 85-107.
- Gunny, K. A. 2010. The relation between earnings management using real activities manipulation and future performance: Evidence from meeting earnings benchmarks. *Contemporary Accounting Research* 27 (3): 855-888.
- Harris, M., and A. Raviv. 2008. A theory of board control and size. *The Review of Financial Studies*. 21: 1797 – 1832.
- Hirst, D. E. 1994. Auditor sensitivity to earnings management. *Contemporary Accounting Research* 11: 405-422.
- Jensen, M. C. 1993. The modern industrial revolution, exit, and the failure of internal control systems. *The Journal of Finance* 48: 831 – 880.
- Jones, F. L. 1996. The information content of the auditor's going concern evaluation. *Journal of Accounting and Public Policy* 15: 1-27.
- Kadous, K., and M. Mercer. 2011. Can reporting norms create a safe harbor? Jury verdicts against auditors under precise and imprecise accounting standards. *The Accounting Review* 87: 565-587.
- Kaplan, S. E. 2001. Ethically related judgments by observers of earnings management. *Journal of Business Ethics* 32: 285-298.
- Kedia, S., K. Koh, and S. Rajgopal. 2015. Evidence on contagion in earnings management. *The Accounting Review* 90: 2337-2373.
- Khurana, I. K., R. Pereira, and E. Zhang. 2017. Is real earnings smoothing harmful? Evidence from firm-specific stock price crash risk. *Contemporary Accounting Research*. In Press.
- Kim, J. B., and B. C. Sohn. 2013. Real earnings management and cost of capital. *Journal of Accounting and Public Policy* 32 (6): 518-543.
- Kim, Y., and M. S. Park. 2014. Real activities manipulation and auditors' client-retention decisions. *The Accounting Review* 89: 367-401.
- Kinney, Jr., W. R., and R. D. Martin. 1994. Does auditing reduce bias in financial reporting? A review of audit-related adjustment studies. *Auditing: A Journal of Practice & Theory* 13: 149-156.
- Koonce, L., J. Miller, and J. Winchel. 2015. The effects of norms on investor reactions to derivative use. *Contemporary Accounting Research* 32: 1529-1554.
- Kothari, S. P., N. Mizik, and S. Roychowdhury. 2016. Managing for the moment: The role of earnings management via real activities versus accruals in SEO valuation. *The Accounting Review* 91 (2016): 559-586.
- Laux, C., and V. Laux. 2009. Board committees, CEO compensation, and earnings management. *The Accounting Review* 84: 869-891.
- Libby, R., and N. Seybert. 2009. Behavioral studies of the effects of regulation on earnings management and accounting choice. In *Accounting, Organizations, and Institutions:*

- Essays in Honour of Anthony Hopwood*, edited by C. S. Chapman, D. J. Cooper, and P. Miller. Oxford, U.K.: Oxford University Press.
- Libby, R., K. M. Rennekamp, and N. Seybert. 2015. Regulation and the interdependent roles of managers, auditors, and directors in earnings management and accounting choice. *Accounting, Organizations and Society* 47: 25-42.
- Lo, K. 2008. Earnings management and earnings quality. *Journal of Accounting and Economics* 41: 350–357.
- Nagin, D. S. 1998. Criminal deterrence research at the outset of the twenty-first century. *Crime and Justice* 23:1-42.
- Nagin, D., and G. Pogarsky. 2001. Integrating celerity, impulsivity, and extralegal sanction threats into a model of general deterrence: Theory and evidence. *Criminology* 39: 865-892.
- Nelson, M. W., J. A. Elliott, and R. L. Tarpley. 2002. Evidence from auditors about managers' and auditors' earnings management decisions. *The Accounting Review* 77: 175-202.
- Public Company Accounting Oversight Board (PCAOB). 2007. *An Audit of Internal Control over Financial Reporting that is Integrated with an Audit of Financial Statements*. Auditing Standard 2201. Washington, DC: PCAOB.
- Public Company Accounting Oversight Board (PCAOB). 2010a. *Evaluating Audit Results*. Auditing Standard 2810. Washington, DC: PCAOB.
- Public Company Accounting Oversight Board (PCAOB). 2010b. *Substantive Analytical Procedures*. Auditing Standard 2305. Washington, DC: PCAOB.
- Pyzoha, J. S. 2015. Why do restatements decrease in a clawback environment? An investigation into financial reporting executives' decision-making during the restatement process. *The Accounting Review* 90: 2515-2536.
- Ritchey, M., and S. Nicholson-Crotty. 2011. Deterrence theory and the implementation of speed limits in the american states. *The Policy Studies Journal* 39: 329-346.
- Roychowdhury, S. 2006. Earnings management through real activities manipulation. *Journal of Accounting & Economics* 42: 335-370.
- Schell-Busey, N., S. S. Simpson, M. Rorie, and M. Alper. 2016. What works? A systematic review of corporate crime deterrence. *Criminology & Public Policy* 15 (2): 387-416.
- Schneider, A., and N. Wilner. 1990. A test of audit deterrent to financial reporting irregularities using the randomized response technique. *The Accounting Review* 65 (3): 668-681.
- Strelan, P., and R. J. Boeckmann. 2006. Why drug testing in elite sport does not work: Perceptual deterrence theory and the role of personal moral beliefs. *Journal of Applied Social Psychology* 36: 2909–2934.
- Taylor, G. K., and R. Z. Xu. 2010. Consequences of real earnings management on subsequent operating performance. *Research in Accounting Regulation* 22: 128-132.
- Uecker, W. C., A. P. Brief, and W. R. Kinney, Jr. 1981. Perception of the internal and external auditor as a deterrent to corporate irregularities. *The Accounting Review* 56 (3): 465-478.

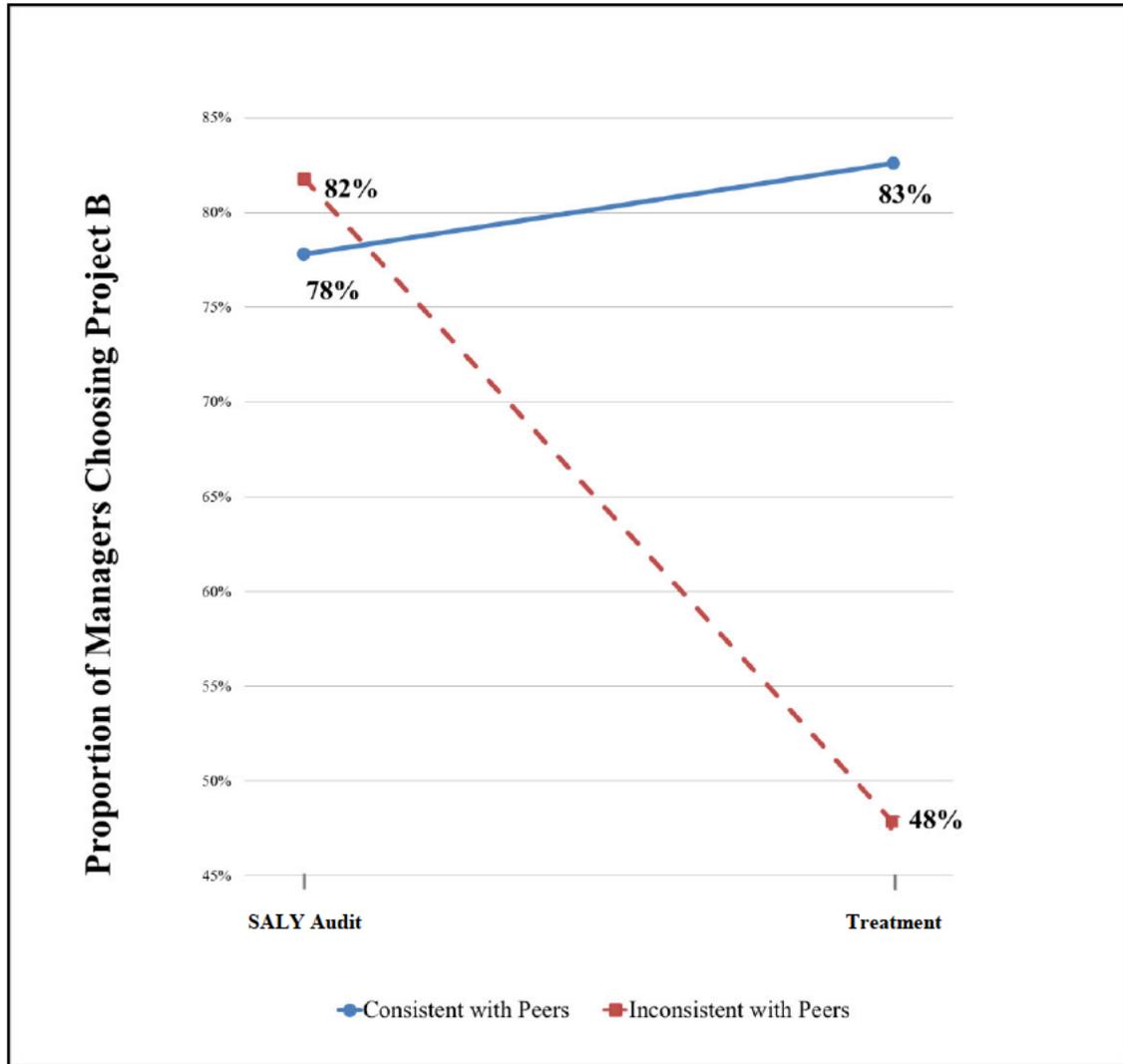
- Vorst, P. 2016. Real earnings management and long-term operating performance: The role of reversal in discretionary investment cuts. *The Accounting Review* 91: 1219-1256.
- Yaeger, D. 2016. *Great Teams: 16 Things High Performing Organizations Do Differently*. Nashville, TN: W Publishing.
- Zang, A. 2012. Evidence on the trade-off between real activities manipulation and accrual-based earnings management. *The Accounting Review* 87 (2): 675-703.

FIGURE 1
Experiment 1 and 2 Treatment Conditions



Increased auditor scrutiny refers to the expectation that auditors will increase inquiry and testing in response to unusual operating fluctuations. Communication to the board refers to the expectation that auditors will discuss their observations regarding managers' unusual operating decisions with the board. In Experiments 1 and 2, in addition to the treatment conditions shown above, we also manipulate consistency with peer behavior as either consistent or inconsistent with peer behavior.

FIGURE 2
Graphic Representation of Experiment 1 Results
Managers' Opportunistic Operating Decisions

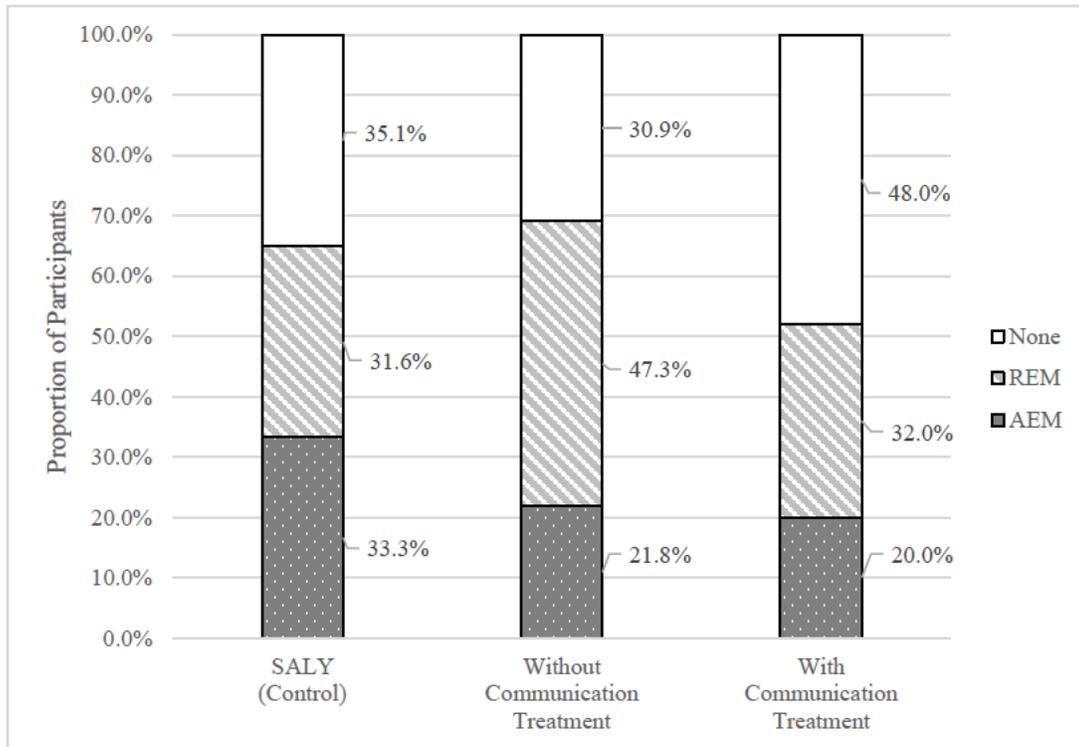


a. We ask managers to choose between Project A and Project B. Project A requires a higher initial investment and has a higher NPV, while Project B requires a lower initial investment but has a lower NPV. Importantly, if Project B (Project A) is chosen, the company will most likely beat (miss) the consensus analyst EPS forecasts for both the fourth quarter and the fiscal year, and Jason will receive (lose) his annual bonus. By choosing Project B, participants demonstrate that they are willing to sacrifice future firm value in order to meet short-term performance thresholds, consistent with operational opportunism (i.e., REM).

b. Our treatment condition in Experiment 1 creates an expectation that, in response to unusual operating fluctuations, auditors will increase scrutiny (i.e., additional inquiry and testing) and communicate their observations to the board. The SALY Audit condition creates an expectation that the level of inquiry and testing was similar to other accounts and previous years and that the auditors did not discuss the issue with members of the board.

c. We manipulate consistency with peer behavior by varying whether the industry trend indicates peer firms have been either reducing or maintaining R&D expenses and whether they are expected to continue to do so for the remainder of the year. Therefore, choosing Project B appears to be consistent (inconsistent) with peer behavior when there is an industry trend of reducing (maintaining) levels of R&D spending.

FIGURE 3
Graphic Representation of Experiment 3 Results
Managers' Earnings Management Choices



In Experiment 3, participants choose among three decision options; 1) use REM (i.e., delay operating expenditures) to reduce R&D expense and meet an earnings target, 2) use AEM (i.e., adjust accounting estimates related to R&D equipment) to reduce R&D expense to meet the target, or 3) use neither (i.e., None) and miss the earnings target. See Table 3 for statistical analyses.

The SALY Audit condition creates an expectation that the level of inquiry and testing was similar to other accounts and previous years and that the auditors did not discuss the issue with members of the board. The Without Communication condition creates an expectation that, in response to unusual operating fluctuations, auditors will increase scrutiny (i.e., additional inquiry and testing), but they will *not* communicate their observations to the board. The With Communication condition creates an expectation that, in response to unusual operating fluctuations, auditors will increase scrutiny (i.e., additional inquiry and testing), and they will communicate their observations to the board.

TABLE 1
Experiment 1 Results
Analysis of Managers' Opportunistic Operating Decisions

Panel A: Proportion of Participants Choosing Project B ^a

	Auditor Actions	
	SALY	Treatment ^b
Consistent with Peer Firms	77.8% (14/18) [A]	82.6% (19/23) [C]
Inconsistent with Peer Firms	81.8% (18/22) [B]	47.8% (11/23) [D]

Panel B: General Linear Model (Binomial Distribution, Logit Link)

<u>Effect</u>	<u>df</u>	<u>Chi-Square</u>	<u>p-value</u>
Consistency	1	5.68	0.02
Treatment	1	0.15	0.70
Interaction Effect ^c	1	3.26	0.04

Panel C: Planned Comparisons

<u>Comparison</u>	<u>Contrast Value</u>	<u>df</u>	<u>Fisher's Exact Test p-value</u>
SALY/Treatment, Inconsistent [B-D] ^c	34.0%	1	0.02
SALY/Treatment, Consistent [A-C]	-4.8%	1	0.71
Consistent/Inconsistent, SALY [A-B]	-4.0%	1	1.00
Consistent/Inconsistent, Treatment [C-D] ^c	-34.8%	1	0.01

^a The dependent variable is coded as "1" for participants who choose to invest in Project B (i.e., the opportunistic choice) and "0" for those who choose to invest in Project A. See Figure 2 for descriptions for Project A and Project B as well as manipulations for consistency with peer behavior and the SALY condition.

^b Our treatment condition in Experiment 1 creates an expectation that, in response to unusual operating fluctuations, auditors will increase scrutiny (i.e., additional inquiry and testing) and communicate their observations to the board.

^c Expectation is directional; p-value is based on one-tailed tests.

TABLE 2
Experiment 2 Results
Analysis of Managers' Opportunistic Operating Decisions

Panel A: Proportion of Participants Choosing Project B ^a

	Auditor Actions	
	SALY	Scrutiny <i>Without</i> Communication Treatment ^b
Consistent with Peer Firms	70.8% (17/24) [A]	54.2% (13/24) [C]
Inconsistent with Peer Firms	70.8% (17/24) [B]	61.5% (16/26) [D]

Panel B: General Linear Model (Binomial Distribution, Logit Link) ^c

Effect	df	Chi-Square	p-value
Consistency	1	0.29	0.60
Treatment	1	0.48	0.49
Interaction Effect	1	0.13	0.72

Panel C: Planned Comparisons ^c

Comparison	Contrast Value	df	Fisher's Exact Test p-value
SALY/Treatment, Inconsistent [B-D]	9.3%	1	0.56
SALY/Treatment, Consistent [A-C]	16.6%	1	0.37
Consistent/Inconsistent, SALY [A-B]	0%	1	1.00
Consistent/Inconsistent, Treatment [C-D]	-7.3%	1	0.71

^a The dependent variable is coded as "1" for participants who choose to invest in Project B and "0" for those who choose to invest in Project A. See Figure 2 for descriptions for Project A and Project B as well as manipulations for consistency with peer behavior and the SALY condition.

^b Our treatment condition in Experiment 2 (i.e., Scrutiny *Without* Communication) creates an expectation that in response to unusual operating fluctuations, auditors will increase scrutiny (i.e., additional inquiry and testing). However, there is no mention of auditors communicating their observations to the board.

^c All reported p-values are two-tailed.

TABLE 3
Experiment 3 Results
Analysis of Managers' Earnings Management Choices

Panel A: Proportion of Participants Choosing Each Option^a

	SALY (Control)	Increased Auditor Scrutiny	
		Without Communication	With Communication
Accounting Earnings Management (AEM)	33.3% (19/57) [A]	21.8% (12/55) [D]	20.0% (10/50) [G]
Real Earnings Management (REM)	31.6% (18/57) [B]	47.3% (26/55) [E]	32.0% (16/50) [H]
<i>Total Earnings Management (AEM + REM)</i>	<i>64.9%</i> <i>(37/57)</i> <i>[A + B]</i>	<i>69.1%</i> <i>(38/55)</i> <i>[D + E]</i>	<i>52.0%</i> <i>(26/50)</i> <i>[G + H]</i>
No Earnings Management	35.1% (20/57) [C]	30.9% (17/55) [F]	48.0% (24/57) [I]

Panel B: AEM – GLM (Binomial Distribution, Logit Link)^b

Effect	df	Chi-Square	p-value
SALY > Without Communication ^c	1	1.83	0.09
SALY > With Communication ^c	1	2.36	0.06
Without Communication versus With Communication	1	0.05	0.82

Panel C: REM – GLM (Binomial Distribution, Logit Link)^b

Effect	df	Chi-Square	p-value
SALY < Without Communication ^c	1	2.86	0.05
SALY versus With Communication	1	0.00	0.96
Without Communication > With Communication ^c	1	2.52	0.06

Panel D: Total EM – GLM (Binomial Distribution, Logit Link)^b

Effect	df	Chi-Square	p-value
SALY versus Without Communication	1	0.22	0.64
SALY > With Communication ^c	1	1.82	0.09
Without Communication > With Communication ^c	1	3.18	0.04

^a In Experiment 3, participants choose among three decision options: AEM, REM or neither. See Figure 3 for detailed descriptions of the three decisions options as well as the SALY, Without Communication, and With Communication manipulations.

^b Statistical tests reported in Panel B, Panel C and Panel D are based on general linear models (binomial distribution, logit link function). For these tests, participant choices are coded as binary responses. The AEM dependent variable (Panel B) is coded as “1” for participants who choose to use AEM and “0” for those who choose otherwise. The REM dependent variable (Panel C) is coded in the same manner. The Total EM dependent variable (Panel D) is coded as “1” for participants who choose to use either REM or AEM and “0” for those who choose not to use either method of earnings management.

^c Reported p-values are one-tailed due to directional predictions.