Do Shareholders Assess Managers' Use of Accruals to Manage Earnings as a Negative Signal of Trustworthiness Even When its Outcome Serves Shareholders' Interests?*

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ABSTRACT

We examine how shareholders' trust in managers is affected by (1) the outcome of earnings management (inconsistent vs. consistent with shareholders' interests) and (2) the method of earnings management (accruals vs. real methods). Using a controlled experiment, we predict and find that trust is impaired when the outcome of earnings management suggests that managers have put their interests above shareholders' interests and/or when the method of earnings management suggests that managers misreported the firm's economic performance. We argue that shareholders assess managers putting their interests above shareholders' interests as a signal of untrustworthiness because it involves a transfer of the firm's resources away from shareholders to managers. We argue that shareholders also assess managers' use of accruals to manage earnings as a signal of untrustworthiness because, in this instance, managers misreport the firm's economic performance. Finally, we show that trust mediates the combined effects of the outcome of earnings management and the method of earnings management on investment decisions. Our study incrementally contributes to the literature by highlighting the adverse implications of managers' use of accruals to manage earnings even when its outcome serves shareholders' interests.

Keywords: *earnings management; shareholders' interests; accruals; trust; investment decisions*
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1. Introduction

Recent survey evidence highlights the prevalence of earnings management as CFOs believe that at least 20 percent of public firms manage their earnings (Dichev et al. 2013). Despite many studies documenting earnings management, few studies examine why shareholders react to earnings management. Given that the consequences of earnings management for shareholders are significant (Dechow et al. 1996), we examine the role of shareholders' trust in managers in explaining current shareholders' reaction to earnings management.[1]

Shareholders entrust managers to act in shareholders' interests and to objectively report the firm's economic performance to shareholders.[2] We consider how earnings management affects shareholders' trust in managers to fulfill these responsibilities. Specifically, we examine the effects of the *outcome* and *method* of earnings management on shareholders' trust in managers and investment decisions. Because managers' actions and reporting decisions could also affect expected cash flows, we also control for shareholders' assessments of cash flows.

We predict that trust is impaired when the outcome of earnings management suggests that managers have put their interests above shareholders' interests and/or when the method of earnings management suggests that managers misreported the firm's economic performance. The "outcome of earnings management" represents the contractual consequence of managers using earnings management to achieve an earnings-based target in an existing contract (e.g., pay

[1] We limit our examination to one important user of financial information: *current* shareholders. We do not consider *prospective* shareholders or creditors. Throughout the paper, we use the term "shareholders" to refer to current shareholders. Future research could consider how earnings management affects other users' trust in managers.
[2] Managers may use their reporting discretion (i.e., accruals) to report what they believe to be the firm's economic performance. However, we argue that managers misreport the firm's economic performance when their use of accruals is primarily aimed at satisfying a contractual outcome.

executive bonuses or avoid violating a debt covenant). Shareholders assess that managers have put their interests above shareholders' interests when earnings management involves a transfer of the firm's resources away from shareholders to managers (Jensen and Meckling 1976; Watts and Zimmerman 1986). We expect that shareholders assess this outcome as a signal of untrustworthiness, which impairs their trust in managers.

The "method of earnings management" represents managers' use of either accruals or real methods to manage earnings. The use of accruals to manage earnings provides a signal of untrustworthiness because it highlights that managers misreported the firm's economic performance. In contrast, the use of real methods on its own does not provide a signal of untrustworthiness because managers can objectively report the corresponding economic transactions and these transactions could serve the interests of shareholders.

We test our theory by conducting a controlled 2 × 2 between-subjects experiment in which we manipulated (1) the outcome of earnings management (*inconsistent with shareholders' interests* vs. *consistent with shareholders' interests*) and (2) the method of earnings management (*accruals* vs. *real methods*). One hundred and eighty-five business professionals served as proxies for current shareholders. These participants provided assessments of trust, several investment-related assessments, and various other assessments to allow us to rule out alternative explanations for our findings. Our experiment allows us to document the effects of earnings management on trust by incorporating several key features. First, we held constant how earnings management is revealed to shareholders by providing all participants with a summary of an analyst's article that presents our manipulations. Second, we informed participants that managers' use of accruals to manage earnings did not represent fraud in our setting and participants' assessments confirm that they understood this design feature. Third, we captured

participants' assessments of trust—as well as various other assessments—to ensure that we can demonstrate the effect of trust on investment decisions.

Our findings support the hypothesized effects. We find that trust is lower when the outcome of earnings management is inconsistent with shareholders' interests and/or when managers use accruals to manage earnings. Further, when the outcome of earnings management is inconsistent with shareholders' interests, we find that the method of earnings management has no incremental effect on trust, i.e., managers putting their interests above shareholders' interests is sufficient to impair trust. When the outcome of earnings management is consistent with shareholders' interests, we find that trust is lower when managers use accruals to manage earnings. Finally, we find that the combined effects of the outcome of earnings management and the method of earnings management on trust ultimately affect investment decisions.

We demonstrate that our findings are robust in several ways. First, when constructing our primary measures, we use principal component analysis to systematically combine multiple measures based on the correlations between these measures (Kline 1994). Second, we show that our findings hold when we control for assessments of cash flows. Finally, we use path analysis to show that trust mediates the combined effects of the outcome of earnings management and the method of earnings management on investment decisions.

Our study incrementally contributes to the literature by documenting the mediating role of trust on the combined effects of the outcome of earnings management and the method of earnings management on investment decisions. We find that trust is impaired when the outcome of earnings management is inconsistent with shareholders' interests and/or when managers use accruals to manage earnings. We further find that the method of earnings management can provide a distinct signal of managers' untrustworthiness when the outcome of earnings

management is consistent with shareholders' interests (i.e., when managers do not put their interests above shareholders' interests). Overall, we show the adverse implications of managers' use of accruals to manage earnings even when its outcome serves shareholders' interests.

The remainder of our paper is organized as follows. The second section discusses the relevant literature and develops our hypotheses. The third section describes the experimental method. The fourth and fifth sections discuss the results and conclusions, respectively.

2. Background and hypotheses

Definition of earnings management

Several studies suggest that earnings management is common (Dichev et al. 2013; Degeorge et al. 1999; Burgstahler and Dichev 1997).[3] In its 1999 Annual Report, the SEC defines earnings management as "the use of various forms of gimmickry to distort a company's true financial performance in order to achieve a desired result" (SEC 1999, 84). Similarly, Healy and Wahlen (1999, 368) suggest that "[e]arnings management occurs when managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers." Therefore, these definitions refer to (1) a "desired result" or an "outcome" of earnings management and (2) the method of earnings management (i.e., "forms of gimmickry" or the "judgment in financial reporting and in structuring transactions").

[3] See Libby and Seybert (2009), Xu et al. (2007), Fields et al. (2001), and Healy and Wahlen (1999) for reviews of the earnings management literature.

The outcome of earnings management

We focus on how earnings management affects the relationship between shareholders and managers. Contracts are often used to align the interests of shareholders and managers; however, these contracts also create incentives for earnings management (Watts and Zimmerman 1986; Dichev et al. 2013). Further, the contractual outcomes of earnings management (e.g., payment of executive bonuses or avoidance of violating a debt covenant) suggest whether managers have acted in shareholders' interests.

Watts and Zimmerman (1986) describe when the outcome of earnings management is inconsistent with shareholders' interests. The outcome of earnings management is inconsistent with shareholders' interests when it leads to a transfer of the firm's resources away from shareholders to managers, e.g., when earnings management enables managers to achieve higher bonuses. Healy (1985) finds that managers use their discretion to increase executive bonuses. Further, Dichev et al. (2013, 26) document that 89 percent of surveyed CFOs agree that managers misrepresent their firm's performance "to influence executive compensation." In this instance, the payment of higher compensation to managers represents managers putting their interests above shareholders' interests. We argue that this outcome provides shareholders with a signal of managers' untrustworthiness.

However, the outcome of earnings management often does not involve managers putting their interests above shareholders' interests (Watts and Zimmerman 1986). For example, research highlights managers' use of discretion to avoid violating debt covenants as a situation in which earnings management is in the interests of both shareholders and managers (Sweeney 1994; DeFond and Jiambalvo 1994). Dichev et al. (2013, 26) find that 72 percent of surveyed CFOs agree that managers misrepresent their firm's performance "to avoid violation of debt

covenants." In this situation, both shareholders and managers benefit as the outcome of earnings management results in lower interest and/or avoiding the costs of debt renegotiation. We argue that this outcome does not provide shareholders with a signal of managers' untrustworthiness.[4]

The method of earnings management

Research on the methods of earnings management generally falls into two categories: managers' use of either accruals or real methods to manage earnings. Managers' use of accruals to manage earnings includes their choice of cost flow assumptions (Kinney and Wempe 2004; Hunt et al. 1996; Hand 1993; Dopuch and Pincus 1988), as well as cost capitalization (Loudder and Behn 1995; Johnson and Ramanan 1988). We argue that managers' use of accruals to manage earnings provides shareholders with a signal of untrustworthiness because, in this instance, managers misreport the firm's economic performance.

Research also identifies managers' use of real methods to manage earnings. These methods often involve firms sacrificing some of their current or future cash flows to achieve earnings targets, e.g., offering price discounts, overproduction, and reducing discretionary costs (Roychowdhury 2006). Graham et al. (2005) find that 80 percent of surveyed managers would decrease spending to meet an earnings target. Further, Evans et al. (2015) find that managers have a preference for using real methods—rather than accruals—to manage earnings. However, unlike managers' use of accruals to manage earnings, the use of real methods does not necessarily provide a signal of untrustworthiness because managers who use real methods to manage earnings can still objectively report the firm's economic performance.

[4] These outcomes can still suggest that managers do not share the same interests of another key stakeholder, e.g., debtholders. However, when earnings are managed to avoid a debt covenant, both shareholders and managers benefit from a firm not violating its debt covenants; whereas the debtholders bear the costs of earnings management. Future research could examine how debtholders' trust in managers is affected by earnings management.

The effect of earnings management on shareholders' trust in managers

Our theoretical framework describes how shareholders' trust in managers is affected by (1) the outcome of earnings management and (2) the method of earnings management. Hypothesis 1 predicts that the outcome of earnings management and the method of earnings management affect trust. Hypothesis 2 predicts that the combined effects of the outcome of earnings management and the method of earnings management on trust ultimately affect investment decisions.

The role of trust in relationships

Rousseau et al. (1998, 395) define trust as "a psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behavior of another." Cook and Wall (1980, 39) further state that trust reflects "the extent to which one is willing to ascribe good intentions to and have confidence in the words and actions of other people." Based on these definitions, we define shareholders' trust in managers as shareholders' willingness to adopt a position of vulnerability with respect to managers' decisions and reporting. Importantly, trust not only involves shareholders' positive beliefs concerning managers' decisions and reporting, but it also involves shareholders' willingness to adopt a position of vulnerability based on these beliefs. This willingness to adopt a position of vulnerability is ultimately reflected in shareholders' financial investment in the firm.

When assessing trust, research suggests that people have a tendency to believe that others fall into one of two categories: trustworthy or untrustworthy (Lewicki and Wiethoff 2000; Bigley and Pearce 1998). While trustworthy people are trustworthy in all settings, untrustworthy people base their behavior on the situation and incentives they face. Kim et al. (2004, 106) emphasize this point by stating "people intuitively believe that those with high integrity will refrain from

dishonest behaviors in any situation, whereas those with low integrity may exhibit either dishonest or honest behaviors depending on their incentives and opportunities. For this reason, a single honest behavior is typically discounted as a signal of honesty, given that those who are honest or dishonest can each behave honestly in certain situations … However, a single dishonest behavior is considered to offer a reliable signal of low integrity, given the belief that only persons of low integrity will perform in dishonest ways."

Two important implications stem from this theoretical framework. First, a single untrustworthy act provides a signal about a person's untrustworthiness. Second, acting in an untrustworthy manner in one situation is interpreted as a signal of a willingness to act in an untrustworthy manner in other situations. This 'trust spillover' effect has been observed in settings involving both individuals and firms. For example, irregularities discovered at one firm are associated with negative abnormal trust-related returns for other firms (Wielhouwer 2015). Therefore, when trust is impaired as a result of a signal of untrustworthiness, any further signals of untrustworthiness are incrementally less important.

Hypotheses development

We examine how shareholders' trust in managers is affected by (1) the outcome of earnings management and (2) the method of earnings management. Each feature of earnings management potentially provides shareholders with a signal of managers' untrustworthiness. When assessing trust, shareholders consider whether managers have put their interests above shareholders' interests and whether managers misreported the firm's economic performance.

The outcome of earnings management potentially provides one signal of managers' untrustworthiness. Managers have put their interests above shareholders' interests when they make decisions for the purpose of transferring the firm's resources away from shareholders to

managers (e.g., by paying executive bonuses). In this situation, trust is impaired as shareholders assess managers' selfish decisions as a signal of untrustworthiness. However, in many instances, managers do not put their interests above shareholders' interests. For example, when managers make decisions to avoid the violation of a debt covenant, the outcome of earnings management does not provide shareholders with a signal of managers' untrustworthiness. Therefore, shareholders only assess the outcome of earnings management as a signal of managers' untrustworthiness when managers have put their interests above shareholders' interests.

The method of earnings management also potentially provides a signal of managers' untrustworthiness. Research suggests that people infer trustworthiness by evaluating others' "words," as well as others' actions (Cook and Wall 1980). Accordingly, we argue that shareholders assess managers misreporting the firm's economic performance as a signal that managers are untrustworthy. Whereas managers' use of real methods to manage earnings does not provide a signal of untrustworthiness (i.e., in this instance, we argue that managers can objectively report the firm's economic performance), managers' use of accruals to manage earnings inherently involves managers' opportunistic use of reporting discretion. Therefore, shareholders assess the method of earnings management as a signal of managers' untrustworthiness when managers misreport the firm's economic performance.

Finally, given that a single signal of managers' untrustworthiness impairs trust, we expect that additional signals of untrustworthiness are incrementally less important. For example, taking this feature of trust to the extreme, we would expect that the method of earnings management does not incrementally affect trust if the outcome of earnings management signals managers' untrustworthiness. This prediction is reflected in Figure 1 and stated as follows:

[INSERT FIGURE 1 HERE]

HYPOTHESIS 1. *Trust is impaired when the outcome of earnings management suggests that managers have put their interests above shareholders' interests and/or when the method of earnings management suggests that managers misreported the firm's economic performance.*

Research suggests that shareholders' trust in managers can ultimately facilitate investment (Elliott et al. 2012; Creed and Miles 1996; Mishra 1996; Jensen and Meckling 1976). If shareholders are willing to invest—or continue to invest—in a firm, their investment highlights their willingness to adopt a position of "vulnerability" (i.e., an important feature of trust). Shareholders are vulnerable in this setting as managers may not act in shareholders' interests in the future and such actions are costly to shareholders. Therefore, our second hypothesis suggests that the effect predicted in Hypothesis 1 ultimately affects investment decisions.

HYPOTHESIS 2. *Trust mediates the combined effects of the outcome of earnings management and the method of earnings management on investment decisions.*

3. Experimental setting and design

Experimental setting – Summary of an analyst's article describing earnings management

To empirically test our hypotheses, we constructed an experimental setting to examine the role of shareholders' trust in managers when shareholders react to earnings management. A requirement of our setting is that it presents earnings management to our experimental participants such that any variation in participants' responses does not stem from *how* earnings management is revealed. Accordingly, we use a summary of a fictitious analyst's article to describe earnings management to all participants.

Although we use a summary of an analyst's article to hold constant how earnings management is revealed (i.e., for internal validity reasons), this choice of setting reflects an increasingly common mechanism through which shareholders learn about earnings management.

We establish our experimental setting's external validity by discussing two assumptions underlying this setting: shareholders are both aware of the possibility of earnings management and rely on analysts for specific information concerning earnings management.

Shareholders' awareness of the possibility of earnings management

We argue that shareholders are aware of the possibility of earnings management due to statements made by regulators, the business press, and researchers about the incidence of earnings management. Since the late 1990s, regulators have regularly discussed earnings management. For example, in 1998, then SEC chairperson Arthur Levitt delivered an often-quoted speech (Levitt 1998, 14) stating his concern "that we are witnessing an erosion in the quality of earnings, and therefore, the quality of financial reporting. Managing may be giving way to manipulation; integrity may be losing out to illusion."

Aside from statements made by regulators, prominent cases of fraudulent earnings management in the early 2000s (e.g., Enron, Worldcom, etc.) fueled concerns in the business press that *non-fraudulent* earnings management—which occurs when managers use their discretion through the "accepted set" of accounting choices (Watts and Zimmerman 1990)—is also widespread (e.g., Condon 2015; Matthews 2014). As a result, it is common for the business press to speculate about earnings management. For example, Condon (2015) states that "[t]hose record profits that companies are reporting may not be all they're cracked up to be."

The business press also often discusses research that examines the incidence of earnings management. For example, a recent article in *The Wall Street Journal* (Grant 2016) describes research (Dichev et al. 2013) finding that CFOs believe that at least 20 percent of public firms manage their earnings. This research is supported by the finding that approximately 30 percent of the managers participating in the Evans et al. (2015) study indicate that their firms would

manage earnings. In light of earnings management being regularly discussed by regulators, the business press, and researchers, it is not surprising that shareholders also believe that earnings management is common. For instance, Hodge (2003) finds that 58.4 percent of a sample of National Association of Investors Corporation shareholders believe that managers of publicly-traded firms manage earnings at least half of the time. Collectively, this evidence supports our assumption that shareholders are generally aware of the possibility of earnings management.

Shareholders' reliance on analysts for specific information concerning earnings management

Given shareholders' general awareness of earnings management, we argue that they then rely on analysts for relevant firm-specific information about earnings management (Kelly et al. 2012; Hirst et al. 1995). The Exhibit provides examples of analysts discussing earnings management. To further validate that analysts discuss earnings management, we asked several analysts whether they discuss earnings management with their clients. One analyst commented, "I can assure anyone that analysts definitely do consider earnings management—across the board now. Not just us niche specialists on the short side." A second analyst noted that analysts also privately discuss earnings management with their clients.

Experimental design

We presented the manipulations underlying our 2 × 2 between-subjects experimental design in a summary of an analyst's article. In the summary, we manipulated the outcome of earnings management (*OUTCOME*) and the method of earnings management (*METHOD*). Our dependent variable for Hypothesis 1 is assessments of trust in managers. Our dependent variable for Hypothesis 2 is investment-related assessments.

Participants

We randomly assigned 185 alumni from a large university's business school to the experimental conditions.[5] Using an alumni database, we recruited alumni who had considerable experience in finance and accounting by only recruiting alumni who had graduated at least five years prior to when our experiment was conducted with a degree in finance or accounting. These participants had been employed, on average, in a position involving finance or accounting for over 20 years. Further, the current positions of 76 percent of the participants primarily involved *using* financial statement information (e.g., financial analysts, financial advisors) and 24 percent were primarily involved with *preparing* financial statement information (e.g., CFOs, controllers, finance directors, auditors). Almost half of the participants stated that they "often" or "very often" make investment decisions and use financial information to evaluate financial performance, and over 90 percent indicated that they at least "sometimes" perform these tasks. Fifty-nine percent held a postgraduate business degree and 84 percent were male.

Given their professional responsibilities and experiences, these participants represented informed shareholders who understood financial information and used it to make investment-related assessments. Libby et al. (2002) stress the importance of matching experimental participants with the research question and experimental task. Because our task required participants to understand the implications of earnings management, we recruited participants who understood managers' decisions as well as their effects on the financial statements.

[5] We obtained institutional ethics clearance for this research involving human participants from the appropriate institution's IRB.

Experimental materials and procedures

Background information

All participants were asked to assume the role of a *current* shareholder in a fictitious firm ("Hi-Tech Corporation"). We provided all participants with the firm's income statement that reflected positive and improving performance over three years. The firm received unqualified audit opinions for all three years from a 'Big 4' accounting firm. After analyzing the income statement, participants read information suggesting that the firm's performance was above industry means and medians on all important earnings-based metrics, and analysts following the firm expected it to outperform the industry over the next several years.[6] After reviewing this information, we asked participants to provide their preliminary investment-related assessments.

Preliminary investment-related assessments

After participants analyzed the firm's income statement and the related industry data, they provided their initial "expectation of Hi-Tech's future financial performance" (*9-point scale: "Very negative"—"Very positive"*), assessments of "the risk that Hi-Tech will experience financial difficulty in the foreseeable future" (*9-point scale: "Much lower than average"—"Much higher than average"*), and whether they would "increase or decrease Hi-Tech's relative importance in [their] portfolio of equity securities" (*9-point scale: "Definitely decrease"—"Definitely increase"*). These preliminary assessments establish a baseline for each participant and enable us to control for idiosyncratic variation in these assessments across participants.

[6] One level of our *OUTCOME* manipulation involves upward earnings management to avoid violating a debt covenant. Dichev and Skinner (2002) note that technical violations occur relatively often and firms that violate debt covenants are not necessarily in financial distress. Consistent with our *OUTCOME* manipulation, Jha (2013) provides large sample evidence that financially healthy firms manage earnings upwards to avoid violating debt covenants. When combining each participant's initial and revised risk assessments, the average *absolute* level of risk in each condition ranges between 5-6 (on the 9-point scale), suggesting that participants viewed the firm as having an "average" risk of failure ('5' on the 9-point scale) more so than a "much higher than average" risk of failure ('9' on the 9-point scale).

Manipulations of OUTCOME and METHOD

Our manipulations of *OUTCOME* and *METHOD* are presented in the summary of the analyst's article (see Appendix). We intentionally provided participants with a summary, rather than the entire article, to reduce noise and control for potential confounds (e.g., the likelihood of detecting the method of earnings management). This design choice is important because our research question focuses on shareholders' reaction to earnings management, not on their ability to uncover information concerning earnings management.[7]

The second bullet point summarizing the article presents our *OUTCOME* manipulation. Earnings were managed to either "achieve a [current year] executive bonus target" (a motivation that leads to an outcome of earnings management that is *inconsistent with shareholders' interests*) or "avoid violating a [current year] debt covenant" (a motivation that leads to an outcome of earnings management that is *consistent with shareholders' interests*). Although both levels of the *OUTCOME* manipulation are in managers' interests, we argue that they represent a strong manipulation as to whether the contractual outcome of earnings management is consistent with shareholders' interests (i.e., strong internal validity).

We argue that our operationalization of *OUTCOME* is also externally valid because there is evidence that we used the most common explicit *contractual* reasons for earnings management (Watts and Zimmerman 1986; Graham et al. 2005; Dichev et al. 2013). While there are other reasons that do not suggest a specific contractual outcome (e.g., "to influence stock price"), survey evidence suggests that executive compensation and debt contracts are the main contracts involved with earnings management. Specifically, Dichev et al. (2013, 26) find that 89 (72)

[7] We hold the likelihood of both detection and regulatory/punitive costs constant in the experiment because research suggests that accruals-based and real earnings management differ with respect to these factors (Kothari et al. 2016; Wongsunwai 2013; Zang 2012; Graham et al. 2005).

percent of surveyed executives agreed that "companies report earnings to misrepresent economic performance to influence executive compensation (avoid violation of debt covenants)."

The first bullet point summarizing the article presents our *METHOD* manipulation. Managers either "capitalized (i.e., reported as an asset instead of an expense) more research and development costs than normal" (*accruals*) or "delayed the start of research and development projects until [next year]" (*real methods*).[8] Our operationalization of this construct is externally valid as there is evidence that earnings management occurs through the reporting of discretionary accruals and/or by accelerating or delaying projects (Seybert 2010; Jackson 2008; Roychowdhury 2006; Fields et al. 2001; Healy and Wahlen 1999). Further, within this setting, there are many transactions that can be used to manage earnings (e.g., maintenance/betterment costs, fixed assets, intangible assets, oil/gas exploration). In the Graham et al. (2005, 35) study, "decreas[ing] discretionary spending (e.g., R&D, advertising, maintenance, etc.)" was the surveyed executives most popular response to the pressure to meet an earnings target.

Our experimental materials also state that the fictitious firm ("Hi-Tech Corporation") belongs to the information technology (IT) industry. Research and development costs for an IT firm are well suited for the 'capitalize vs. delay discretionary costs' setting because firms in the IT industry are allowed to both capitalize and expense research and development costs (FASB 1985, Accounting Standards Codification Topic 985-20-25). Mulford and Roberts (2006) document that IT firms capitalize between zero and 82 percent of their software development costs, with the average amount being 20 percent. Further, in all conditions, the summary of the article states that the analyst does not believe that the firm committed fraud. As a result,

[8] Simply stating that managers used "accruals" or "real methods" to manage earnings could have introduced considerable noise as our participants may have been unfamiliar with the labels used in the academic literature. Therefore, we explicitly described the method of earnings management rather than using these labels.

participants were aware that the firm would not be subject to regulatory costs as a result of managers using accruals to manage earnings.[9]

The first bullet point also states that managers' use of discretion "increased [current year] earnings by approximately 3 percent ($175 thousand, net of taxes)" in all conditions. This statement holds constant the direction and dollar amount of earnings management across conditions. The summary of the article also stated that "[t]he analyst finds no evidence of the executives using their discretion in any other way to increase [current year] earnings" (i.e., the firm's managers used only one method of earnings management).

Revised investment-related assessments

Participants' revised investment-related assessments represent our dependent variable when testing Hypothesis 2. After reading the summary of the analyst's article, participants provided the following three revised investment-related assessments:[10]

FUTURE_PERF: What is your revised expectation of Hi-Tech's future financial performance after publication of the industry analyst's article? *(9-point scale: "Much more negative than previous assessment"—"Much more positive than previous assessment")*

RISK: To what extent do you believe that the risk that Hi-Tech will experience financial difficulty in the foreseeable future increased/decreased after publication of the industry analyst's article? *(9-point scale: "Decreased significantly"—"Increased significantly")*

[9] If our participants did not process this information, and/or believed that the firm would be subject to regulatory action associated with capitalizing the research and development costs, we would expect them to assess the firm's cash flows negatively in the *accruals* conditions. As discussed in Section 4, participants assessed that managers' use of accruals to manage earnings did not significantly affect the firm's cash flows.

[10] We captured participants' revised assessments in this way to eliminate the need to remind participants how they answered a previous question or to assume that they recall how they answered a previous question. Asking the same question twice and then computing the difference can result in participants stating one thing (e.g., "I would decrease my investment") while a change measure would reflect the opposite due to recall error.

INVEST: Based on your revised overall assessments, would you increase or decrease Hi-Tech's relative importance in your portfolio of equity securities? *(9-point scale: "Definitely further decrease"—"Definitely further increase")*

Assessments of trust in managers

Participants' assessments of trust represent our dependent variable when testing Hypothesis 1 and our mediating variable when testing Hypothesis 2. Participants assessed the effect of earnings management on their trust in managers *after* their revised investment-related assessments. As in Elliott et al. (2012), this ordering ensured that we did not create demand effects by asking questions about the possible mediator (i.e., trust) before soliciting participants' investment decisions. To capture trust related to *both* managers' decisions and reporting, we asked participants two questions *(both measured on 9-point scales: "Very low"—"Very high")*.[11]

TRUST_DECISIONS: What level of trust do you have that Hi-Tech's executives made operating, investing, and financing decisions in the interest of shareholders?

TRUST_REPORTING: What level of trust do you have that Hi-Tech's executives reported the results of those decisions to shareholders in good faith?

We attempt to minimize the threat of demand effects by broadly framing our trust questions in terms of the trust related to each of managers' responsibilities to shareholders (i.e., managers'

[11] After these trust assessments, we asked "[w]hich of these two responsibilities to shareholders do you believe is more important?" *(9-point scale: "Making operating, investing, and financing decisions is more important" [-4]—"The two are equally important" [0]—"Reporting in good faith is more important" [+4])*. In the *accruals* conditions, participants responded that "Reporting in good faith is more important" (means: +0.52, +0.62; *p*-values < 0.04, two-tailed; untabulated). In the *real methods* conditions, participants responded that "The two are equally important" (means: +0.05, +0.04; not significantly different from zero, *p*-values > 0.80, two-tailed; untabulated). We argue that this finding suggests that shareholders perceive managers' responsibility to report in good faith to be relatively more important after managers misreport the firm's economic performance. To the extent that participants' responses suggest that our participants systematically differ based on their ex ante beliefs as to which of managers' responsibilities is more important, we control for these beliefs in our main analyses. Specifically, the significance of the hypothesized effect of *OUTCOME* × *METHOD* on trust (Table 2, panel A) and investment decisions (Table 4, panel B) is robust to including these beliefs as a covariate in the analysis of variance (both *p*-values < 0.03, one-tailed). *TRUST_FACTOR* also remains significant when controlling for these beliefs in regression (2) in Table 4, panel A (*p*-value < 0.01, one-tailed).

decisions and managers' reporting), and not directly referencing details of the conditions to which our participants were assigned.

Controlling for assessments of the firm's cash flows

Participants' assessments of the firm's cash flows represent our main control variable when testing our hypotheses. By directly soliciting these assessments, we show that the hypothesized effects on trust are distinct from the effects on assessments of the firm's cash flows. To measure assessments of the firm's cash flows[12], we asked all participants the following two questions *(measured on 9-point scales: "Very negatively"—"Very positively")*:

CASH_OUTCOME: In your opinion, how does [*OUTCOME*] affect the amount of cash available to Hi-Tech in the future?

CASH_METHOD: Independent of the cash flow effect indicated above, how does the specific act of [*METHOD*] affect the amount of cash available to Hi-Tech in the future?

We frame our cash flow questions in terms of the conditions to which participants were assigned to minimize the likelihood that participants considered extraneous factors when providing their assessments of the firm's cash flows.

4. Results and discussion

Manipulation checks and construction of the TRUST_FACTOR variable

As manipulation checks, we first asked participants to select the motivation for earnings management as described by the analyst, which in turn reflects an outcome of earnings management (*inconsistent with shareholders' interests*: "achieve an executive bonus target" vs. *consistent with shareholders' interests*: "avoid violating a debt covenant"). We also asked

[12] The "cash available … in the future" in this context reflects "cash flows" as the cash available in the future can only *change* through a cash flow. Both questions solicit assessments of *changes* in the cash available in the future.

participants to select the method of earnings management as described by the analyst when referring to an example of that method (*accruals*: "capitalized more research and development costs than normal" vs. *real methods*: "delayed the start of research and development projects until [next year]"). Between 92 and 96 percent of the participants in each condition answered both questions correctly. As our results are insensitive to whether we include participants who answer at least one of these questions incorrectly, we include the entire sample in our analyses.

Both of our hypotheses examine shareholders' trust in managers. Panel A of Table 1 reports a high positive correlation (+0.82) between the two trust measures, *TRUST_DECISIONS* and *TRUST_REPORTING*, suggesting that these measures have strong convergent validity (Campbell and Fiske 1959). Further, it also suggests that a loss of trust in one dimension of trust creates a loss of trust in the other dimension, i.e., a 'trust spillover'. Using principal component analysis, we create *TRUST_FACTOR* from participants' assessments of the two possible mediating mechanisms (i.e., trust as the hypothesized mediating mechanism and assessments of the firm's cash flows as an alternative mediating mechanism).[13] As expected, *TRUST_FACTOR* loads primarily on *TRUST_DECISIONS* (0.94) and *TRUST_REPORTING* (0.94). The eigenvalue for *TRUST_FACTOR* is 2.10. We use *TRUST_FACTOR* to test our hypotheses.

[INSERT TABLE 1 HERE]

Hypothesis 1 – Combined effects of OUTCOME and METHOD on trust

Hypothesis 1 predicts that trust is impaired when the outcome of earnings management suggests that managers have put their interests above shareholders' interests and/or when the method of earnings management suggests that managers misreported the firm's economic performance. Consistent with Hypothesis 1, panel B of Table 1 documents that, relative to when

[13] Not surprisingly given the high positive correlations between *TRUST_FACTOR*, *TRUST_DECISIONS*, and *TRUST_REPORTING*, our findings are robust to using any of these trust measures.

neither signal is observed (*consistent with shareholders' interests*/*real methods*: 0.69), *TRUST_FACTOR* is lower when shareholders observe either or both signals (*inconsistent with shareholders' interests*/*accruals*: -0.45; *inconsistent with shareholders' interests*/*real methods*: -0.36; *consistent with shareholders' interests*/*accruals*: 0.07).

A key feature of our theoretical framework is that, when trust is impaired due to a signal of untrustworthiness, any further signals of untrustworthiness are incrementally less important. This feature of trust suggests that the combined effects of *OUTCOME* and *METHOD* produce an interaction effect on trust (see Figure 1). Therefore, we test our first hypothesis by examining whether the outcome of earnings management and the method of earnings management interact to affect trust. Table 2, panel A presents the analysis of variance that examines the interaction effect of *OUTCOME* and *METHOD* on *TRUST_FACTOR*. Consistent with Hypothesis 1, this interaction effect is significant (*F*-statistic = 4.04; *p*-value = 0.02).[14]

[INSERT TABLE 2 HERE]

Further, panel A of Figure 2 illustrates the interaction effect of *OUTCOME* and *METHOD* on *TRUST_FACTOR*, such that trust is lower when the outcome of earnings management and/or the method of earnings management suggests untrustworthiness. Providing further support for Hypothesis 1, panel B of Table 2 documents that *TRUST_FACTOR* is significantly lower when either or both signals are present (all *p*-values < 0.01).

[INSERT FIGURE 2 HERE]

[14] The significance of the hypothesized effect of *OUTCOME* × *METHOD* on trust (Table 2, panel A) and investment decisions (Table 4, panel B) is robust to separately including each demographic factor and preliminary assessment as a covariate in the analysis of variance (all *p*-values < 0.05, one-tailed). *TRUST_FACTOR* also remains significant when separately controlling for each factor and assessment in regression (2) in Table 4, panel A (all *p*-values < 0.01, one-tailed).

Consistent with additional signals of untrustworthiness being less important, the planned comparisons we report in panel B of Table 2 highlight that *METHOD* only leads to a significant difference in *TRUST_FACTOR* within the *consistent with shareholders' interests* conditions (*t*-statistic = 3.18; *p*-value < 0.01) and not within the *inconsistent with shareholders' interests* conditions (*t*-statistic = 0.48; *p*-value = 0.63). However, *OUTCOME* incrementally impairs trust regardless of *METHOD*. That is, for each method of earnings management, *TRUST_FACTOR* is lower when the *OUTCOME* is inconsistent with shareholders' interests (both *p*-values < 0.01).

Are the combined effects of OUTCOME and METHOD on trust distinct from cash flows?

We now examine whether the combined effects of *OUTCOME* and *METHOD* on *TRUST_FACTOR* are distinct from their effects on participants' assessments of the firm's cash flows. We expect a main effect of *OUTCOME* on assessments of cash flows such that shareholders assess the firm's cash flows more negatively when the outcome of earnings management is inconsistent with shareholders' interests than when the outcome of earnings management is consistent with shareholders' interests. We also expect a main effect of *METHOD* on participants' assessments of cash flows such that shareholders assess the cash flow effect of managers' use of real methods to manage earnings in our setting more negatively than managers' use of accruals to manage earnings.

The descriptive statistics we report in panel B of Table 1 are consistent with our expectations. With respect to *CASH_OUTCOME*, participants assessed the firm's cash flows to be significantly negative when the outcome of earnings management is inconsistent with shareholders' interests (overall mean = -1.42; *p*-value < 0.01, one-tailed; untabulated) and positive when the outcome of earnings management is consistent with shareholders' interests (overall mean = 0.53; *p*-value < 0.01, one-tailed; untabulated). With respect to *CASH_METHOD*,

participants assessed the firm's cash flows to be significantly negative when managers used real methods to manage earnings (overall mean = -0.74; *p*-value < 0.01, one-tailed; untabulated), while participants assessed managers' use of accruals to manage earnings to have no significant effect on the firm's cash flows (overall mean = -0.01; *p*-value = 0.93, two-tailed; untabulated).[15]

To further examine whether the combined effects of *OUTCOME* and *METHOD* on *TRUST_FACTOR* are distinct from their effects on participants' assessments of the firm's cash flows, we create *CASH_FACTOR* from participants' assessments of the two possible mediating mechanisms (i.e., trust and cash flows) using principal component analysis. *CASH_FACTOR* loads primarily on *CASH_OUTCOME* (0.65) and *CASH_METHOD* (0.90). The eigenvalue for *CASH_FACTOR* is 1.03.[16] Table 3, panel A presents the analysis of variance testing of the effects of our manipulations on *CASH_FACTOR*. Consistent with our expectations, we find significant main effects of *OUTCOME* (*F*-statistic = 29.92; *p*-value < 0.01) and *METHOD* (*F*-statistic = 12.59; *p*-value < 0.01) on *CASH_FACTOR*.[17]

[INSERT TABLE 3 HERE]

Figure 2, panel B illustrates the observed effects of *OUTCOME* and *METHOD* on *CASH_FACTOR*. Comparing panels A and B of Figure 2 highlights when the effects of *OUTCOME* and *METHOD* on *CASH_FACTOR* and *TRUST_FACTOR* are directionally consistent. Specifically, both panels reveal a main effect of *OUTCOME*, such that the dotted lines (*inconsistent with shareholders' interests* conditions) are lower across both levels of *METHOD* relative to the solid lines (*consistent with shareholders' interests* conditions).

[15] Consistent with shareholders assessing a firm's cash flows to be unaffected by managers' use of accruals to manage earnings, participants' assessments of *CASH_METHOD* did not significantly differ from zero in *either* condition involving managers' use of accruals to manage earnings (both *p*-values > 0.28, two-tailed; untabulated).
[16] *TRUST_FACTOR* and *CASH_FACTOR* account for 78 percent of the variance in the *TRUST* and *CASH* measures.
[17] These effects are also significant when we conduct separate ANOVAs replacing *CASH_FACTOR* with *CASH_OUTCOME* (*OUTCOME* main effect: *F*-statistic = 70.57; *p*-value < 0.01, one-tailed; untabulated) and *CASH_METHOD* (*METHOD* main effect: *F*-statistic = 13.10; *p*-value < 0.01, one-tailed; untabulated), respectively.

Therefore, significantly lower *TRUST_FACTOR* and *CASH_FACTOR* occur when the outcome of earnings management is inconsistent with shareholders' interests, regardless of *METHOD*.

Importantly, comparing panels A and B of Figure 2 also highlights when the effects of *OUTCOME* and *METHOD* on *TRUST_FACTOR* are distinct from their effects on *CASH_FACTOR*. In panel A, the upward sloping solid line shows that participants assessed managers' use of accruals to manage earnings adversely affected *TRUST_FACTOR* when the outcome of earnings management is consistent with shareholders' interests. Further, *METHOD* did not significantly affect *TRUST_FACTOR* when the outcome of earnings management is inconsistent with shareholders' interests. In contrast, the downward sloping lines in panel B reveal that *CASH_FACTOR* is higher when managers use accruals to manage earnings relative to when managers use real methods to manage earnings. Therefore, the combined effects of *OUTCOME* and *METHOD* on *TRUST_FACTOR* (i.e., the interaction effect) are distinct from the main effects of these features of earnings management on *CASH_FACTOR*.

Hypothesis 2 – Does trust mediate the effects of OUTCOME and METHOD on investment decisions?

Hypothesis 2 predicts that trust mediates the combined effects of the outcome of earnings management and the method of earnings management on investment decisions. Before directly examining this hypothesis, we run the following regression to validate that participants' implicit assessments of discounted cash flows are associated with their investment decisions (*INVEST*)[18]:

$$INVEST = \alpha_0 + \alpha_1 CASH\_FACTOR + \alpha_2 RISK + \varepsilon \quad (1)$$

[18] We use *INVEST* as it reflects shareholders' willingness to invest and its measurement is not directly based on *RISK*, unlike *INVEST_FACTOR* (i.e., a principal component analysis component loading on *FUTURE_PERF* [0.88], *RISK* [-0.66], and *INVEST* [0.86]; eigenvalue = 1.96; accounting for 65 percent of the variance).

Panel A of Table 4 documents that both *CASH_FACTOR* (coefficient = 0.27; *p*-value < 0.01) and *RISK* (coefficient = -0.31; *p*-value < 0.01) are significantly associated with *INVEST*.

[INSERT TABLE 4 HERE]

We then supplement the right-hand side of (1) with *TRUST_FACTOR* to examine whether participants' assessments of trust in managers are associated with *INVEST* after controlling for participants' implicit assessments of the firm's discounted cash flows:

$$INVEST = \alpha_0 + \alpha_1 CASH\_FACTOR + \alpha_2 RISK + \alpha_3 TRUST\_FACTOR + \varepsilon \quad (2)$$

We find that *TRUST_FACTOR* is significantly associated with *INVEST* after controlling for participants' implicit assessments of the firm's discounted cash flows (coefficient = 0.56; *p*-value < 0.01). Further, the adjusted R^2 of (2) (0.32) is over double the adjusted R^2 of (1) (0.15).[19]

Our regression analyses suggest that *TRUST_FACTOR* has an effect on *INVEST* that is distinct from the effects of participants' implicit assessments of the firm's discounted cash flows. Our theory suggests that the mediating effect of *TRUST_FACTOR* uniquely results from the interaction of *OUTCOME* and *METHOD*. By comparing panel A of Tables 2 and 3, we note that the interaction effect of *OUTCOME* and *METHOD* on *TRUST_FACTOR* is distinct because our independent variables do not have the same interaction effect on *CASH_FACTOR*. Table 4, panel B presents the analysis of variance that examines the effect of *OUTCOME* × *METHOD* on *INVEST_FACTOR*. This interaction effect is significant (*F*-statistic = 4.06; *p*-value = 0.02). Consistent with our theory, panel C of Table 4 reports that *METHOD* only leads to a significant difference in *INVEST_FACTOR* within the *consistent with shareholders' interests* conditions (*t*-statistic = 2.90; *p*-value < 0.01) and not within the *inconsistent with shareholders' interests* conditions (*t*-statistic = 0.12; *p*-value = 0.91). Further, Figure 2 highlights that *METHOD* has

[19] *TRUST_FACTOR* is also significant when we replace *INVEST* with *FUTURE_PERF* or *INVEST_FACTOR*, and *CASH_FACTOR* with *CASH_OUTCOME* and *CASH_METHOD* (all *p*-values < 0.01, one-tailed; untabulated).

directionally *similar* effects on *INVEST_FACTOR* (panel C) and *TRUST_FACTOR* (panel A) when the outcome of earnings management is consistent with shareholders' interests.

The final test of Hypothesis 2 uses path analysis to examine whether *TRUST_FACTOR* mediates the effect of *OUTCOME* × *METHOD* on *INVEST_FACTOR*. Consistent with panel A of Table 2, panel A of Figure 3 illustrates a significant interaction effect of *OUTCOME* and *METHOD* on *TRUST_FACTOR* (+0.94; *p*-value < 0.01). Further, *TRUST_FACTOR* ultimately affects *INVEST_FACTOR* (+0.50; *p*-value < 0.01). Goodness of fit indices suggest that our data fit the model well (χ^2 = 0.55, *p*-value = 0.46; CFI = 1.00; TLI = 1.02; RMSEA = 0.00).[20] Panels B and C of Figure 3 examine whether *CASH_FACTOR* and *RISK* also mediate the effect of *OUTCOME* × *METHOD* on *INVEST_FACTOR*. We find no evidence supporting the mediating effect of either alternative variable on the effect of *OUTCOME* × *METHOD* on *INVEST_FACTOR*, further highlighting that the mediating role of *TRUST_FACTOR* is distinct due to the lack of a significant interaction effect of *OUTCOME* and *METHOD* on either *CASH_FACTOR* or *RISK*.[21]

[INSERT FIGURE 3 HERE]

5. Conclusion

We examine how shareholders' trust in managers is affected by both the outcome and the method of earnings management. Specifically, we predict and find that trust is impaired when

[20] These paths are statistically equivalent if we use *FUTURE_PERF* or *INVEST* as the dependent variable. Consistent with our primary analyses of Hypothesis 2, we report our path analysis using *INVEST_FACTOR* in Figure 3.

[21] Similar to *CASH_FACTOR* and *RISK*, the interaction effects of *OUTCOME* and *METHOD* on *CASH_OUTCOME* (*p*-value = 0.47, two-tailed; untabulated) and *CASH_METHOD* (*p*-value = 0.54, two-tailed; untabulated) are not significant. Further, goodness of fit indices for the path analyses involving *CASH_OUTCOME* and *CASH_METHOD* suggest that our data do not fit these two models well. Therefore, we do not find support for the mediating effects of *CASH_OUTCOME* and *CASH_METHOD*.

managers put their interests above shareholders' interests and/or when managers misreport the firm's economic performance. We argue that managers' use of accruals to manage earnings provides a signal of untrustworthiness because it involves managers opportunistically using their reporting discretion to report the firm's performance. In contrast, managers' use of real methods on its own does not provide a signal of untrustworthiness because managers can objectively report the corresponding economic transactions and these transactions could serve the interests of shareholders. Finally, we show that trust mediates the combined effects of the outcome and the method of earnings management on investment decisions.

Our study incrementally contributes to the literature by highlighting the adverse implications of managers' use of accruals to manage earnings even when its outcome serves shareholders' interests. We show that trust plays a key mediating role when shareholders react to information concerning earnings management. Whereas archival research generally focuses on the mediating role of shareholders' assessments of cash flows when examining shareholders' reaction to earnings management (e.g., Kothari et al. 2016; Cohen and Zarowin 2010), we use a controlled experiment to demonstrate that other factors—such as trust—also ultimately affect shareholders' reactions to earnings management. For example, we demonstrate situations in which shareholders react more negatively to managers' use of accruals—relative to real methods—to manage earnings despite shareholders assessing managers' use of accruals to have no effect on the firm's cash flows. In these situations, shareholders are less likely to invest in the firm because they assess managers' opportunistic use of reporting discretion as a signal of untrustworthiness.

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Exhibit Examples of analysts reporting earnings management

Panel A: *OUTCOME*: *inconsistent with shareholders' interests*

We raise the concern that [the company's] 2007 annual bonus incentive plan was based on net income for the CEO and COO. Such targets as net income or EPS may provide motivation for management to reduce current year provision expense in order to meet target objectives, while hampering future earnings.

The company reduced the reserves/non-accrual loans ratio from 133% in 3Q07 to 112% in 4Q07. Had the company maintained the 3Q07 level of reserve coverage in the fourth quarter an estimated additional provisioning expense of $8.1 million (net of tax) would have dropped 2007 net income from the 125% payout band to the 115% payout level.

inconsistent with shareholders' interests: *achieve an executive bonus target*

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Panel B: *OUTCOME*: *consistent with shareholders' interests*

[The analyst] published a report on [the company] claiming the company used creative acquisition accounting relating to [an investee] to conceal losses and inflate GAAP financial performance. The report notes that after acquiring [the investee] in 2013, [the company] made adjustments to goodwill and purchase price allocation changes, and created a $1.56 billion reserve that it can use to inflate profitability.

The report claims that [the company] would have had losses without the use of those reserves and that it will sustain losses after the reserves are used. Further, **the report claims the company shall be left highly levered and that either a goodwill write-down or financial restatement may trigger the breach of a debt covenant.** The report concludes that because of this, [the company] is worth only $37 per share.

consistent with shareholders' interests: *avoid violating a debt covenant*

Source: Bar (2014)

Exhibit Examples of analysts reporting earnings management (Continued)

Panel C: *METHOD*: *accruals*

Capitalization of research and development:

In FY 12, the Company began capitalizing and amortizing development costs related to building new features/significant improvements for its core platform (provided that the improvements generate probable future economic benefits).

Potentially unwarranted surge in capitalized R&D, in our view:

In FY 13, capitalized R&D surged 323.5% to $14.4 million. **In our view, the earnings impact of capitalizing R&D (instead of expensing it) was a $0.07 and $0.01 benefit in FY 13 and FY 12, respectively.** The Company did not discuss the surge in capitalized R&D in its Q4 13 Earnings Release, FY 13 Annual Report, or on its Q4 13 Conference Call. Therefore, we are concerned that the surge in capitalization may have been unwarranted.

accruals: *capitalizing R&D*

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Panel D: *METHOD*: *real methods*

Writes [the analyst], "Looking at [the company's] annual incentive program, a pool is funded based on the company's performance on three financial metrics: total revenue, adjusted diluted earnings per share and cash flow from operations … **largely with the aid of its record share repurchase activity, [the company] managed to exceed the 2013 target goal for adjusted diluted EPS**, while producing slightly below-target performance for its revenue and cash flow metrics."

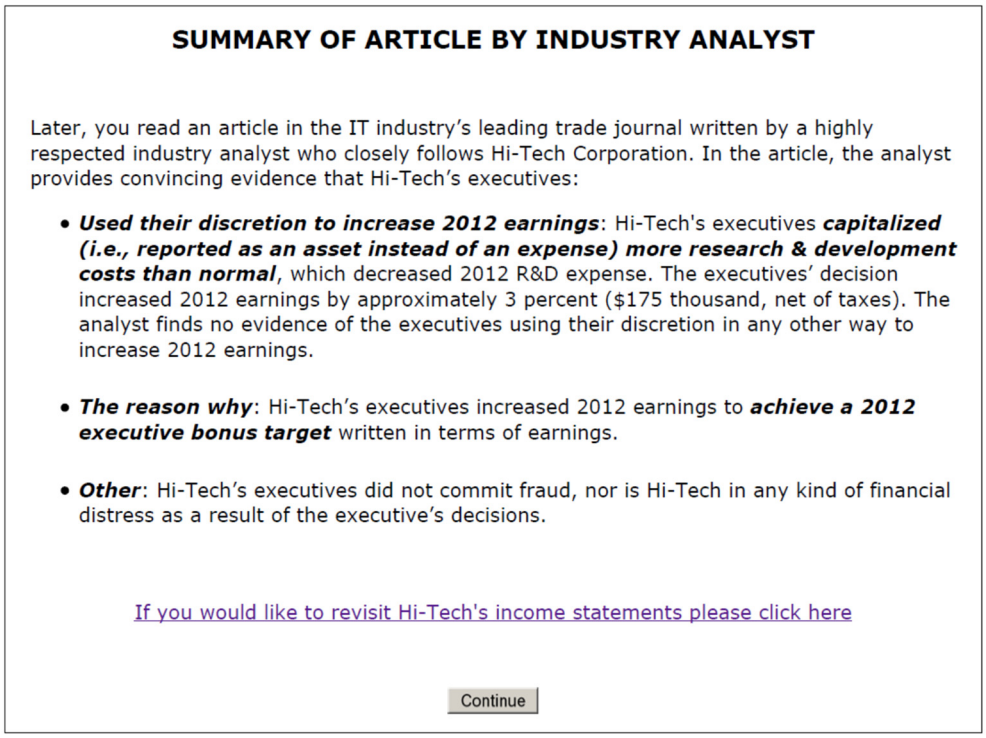
While [the company] didn't have a particularly stellar 2013, its executives still received healthy bonuses, in part because [the company] surpassed its goals for growth in earnings per share, a goal that wouldn't have been met without such a concerted effort to keep the total number of shares outstanding low. Meanwhile, [the company] has **reduced its investment in research and development as a percentage of revenue every year since 2007 — which can't bode well for the company's prospects of launching the next [products].**

real methods: *reducing discretionary spending (e.g., R&D)*

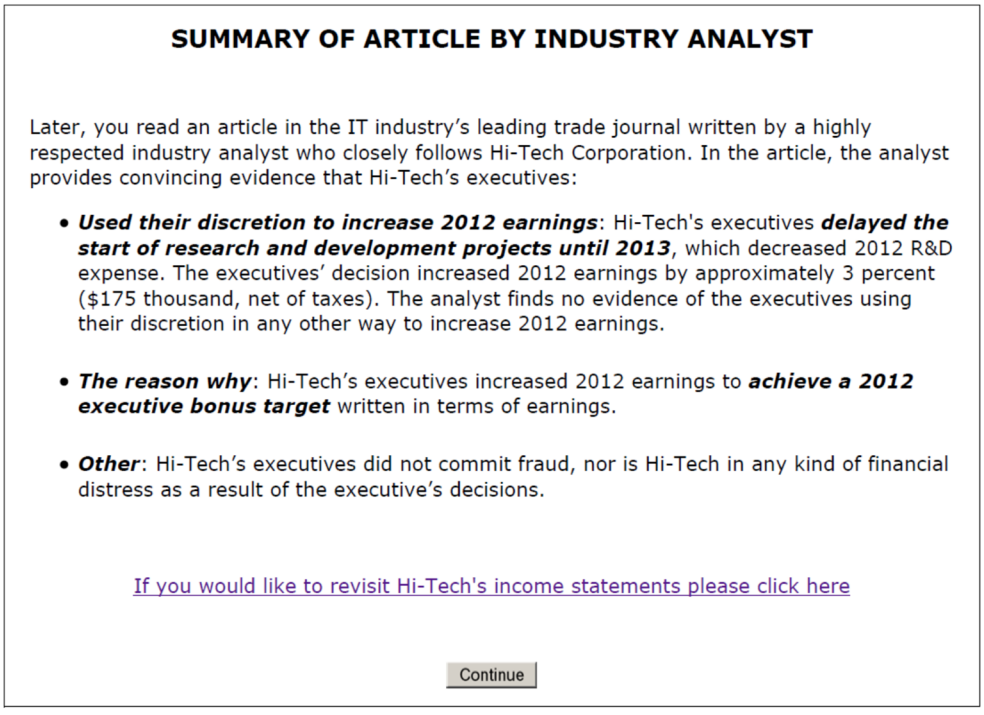
Source: Matthews (2014)

Appendix Examples of experimental screens presenting manipulations

[1]: *inconsistent with shareholders' interests / accruals*

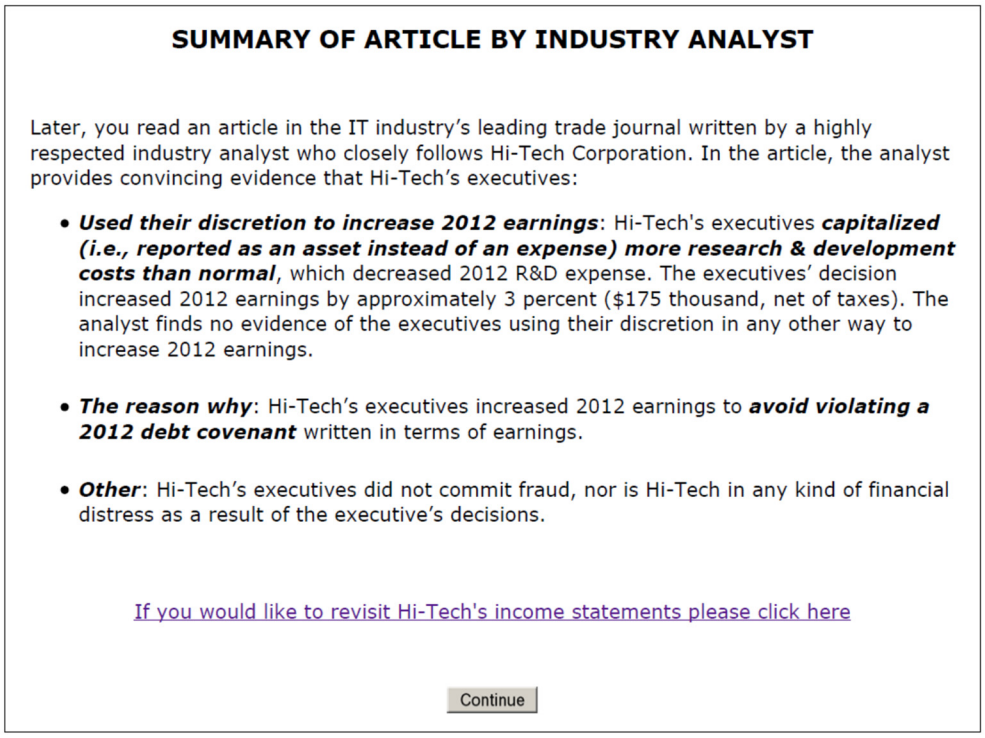


[2]: *inconsistent with shareholders' interests / real methods*



Appendix Examples of experimental screens presenting manipulations (Continued)

[3]: *consistent with shareholders' interests / accruals*



[4]: *consistent with shareholders' interests / real methods*

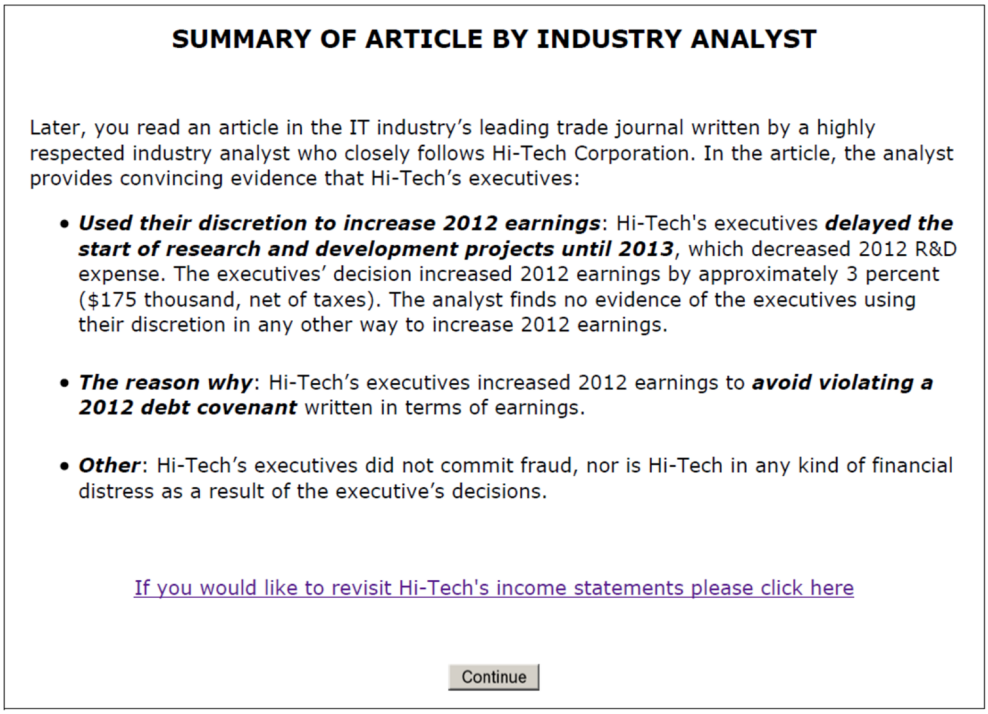


Figure 1 Predicted combined effects of *OUTCOME* and *METHOD* on trust (Hypothesis 1)

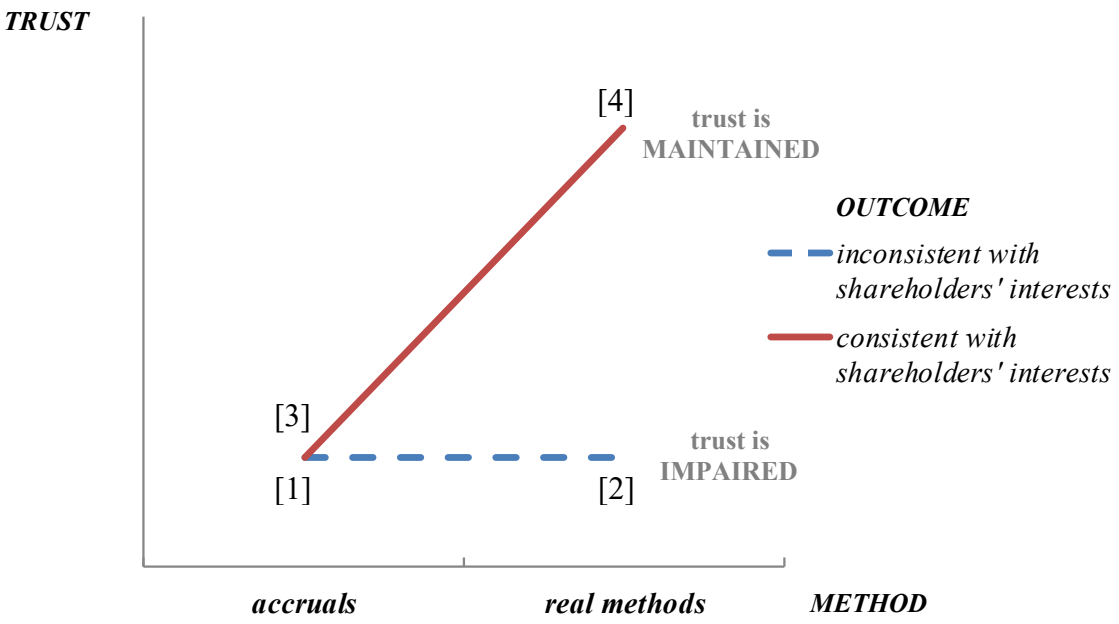
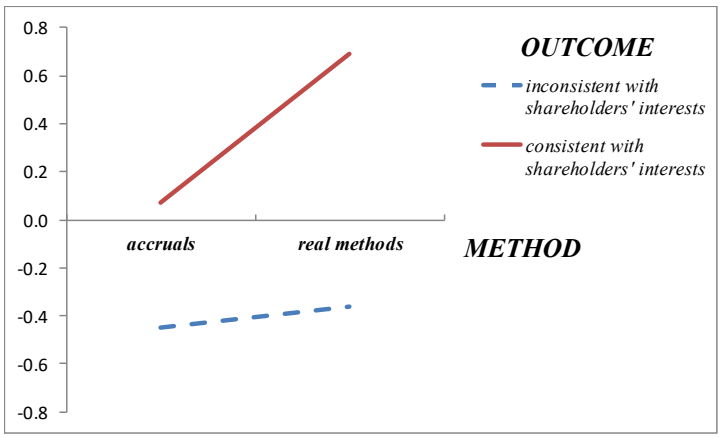


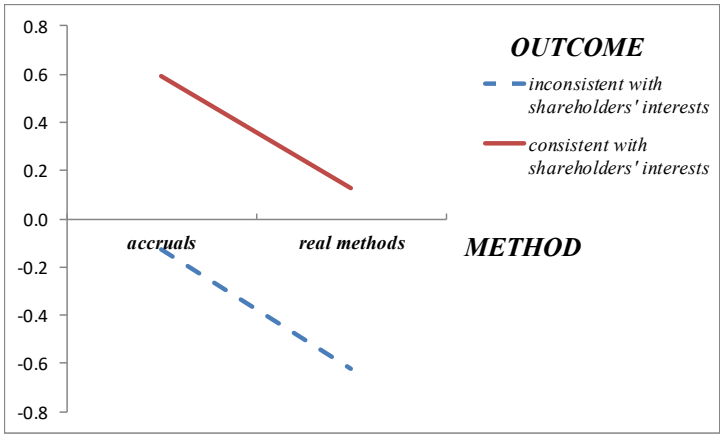
Figure 2 Observed effects of *OUTCOME* and *METHOD* on *TRUST_FACTOR*, *CASH_FACTOR*, and *INVEST_FACTOR*

Panel A: Effects of *OUTCOME* and *METHOD* on *TRUST_FACTOR** (Hypothesis 1)



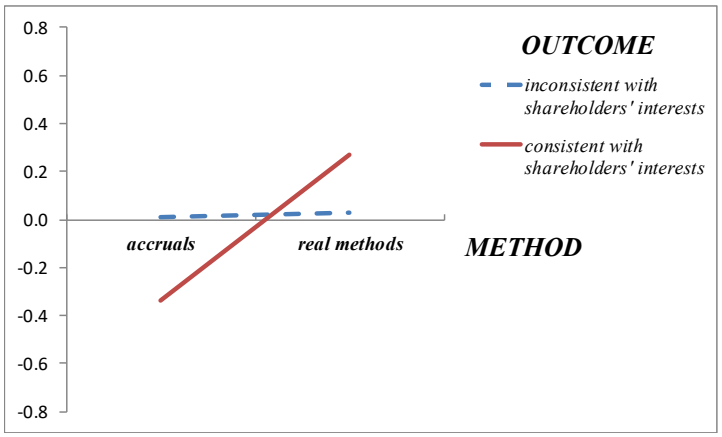
* *TRUST_FACTOR* is the principal component analysis component loading primarily on *TRUST_DECISIONS* (0.94) and *TRUST_REPORTING* (0.94), and has an eigenvalue of 2.10.

Panel B: Effects of *OUTCOME* and *METHOD* on *CASH_FACTOR***



** *CASH_FACTOR* is the principal component analysis component loading primarily on *CASH_OUTCOME* (0.65) and *CASH_METHOD* (0.90), and has an eigenvalue of 1.03.

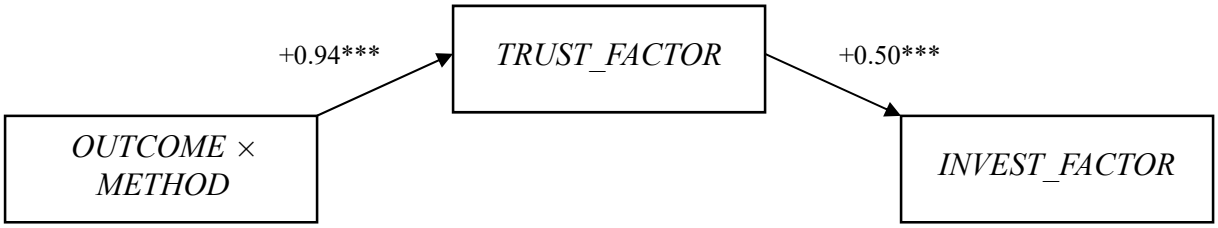
Panel C: Effects of *OUTCOME* and *METHOD* on *INVEST_FACTOR**** (Hypothesis 2)



*** *INVEST_FACTOR* is the principal component analysis component loading on *FUTURE_PERF* (0.88), *RISK* (-0.66), and *INVEST* (0.86), and has an eigenvalue of 1.96.

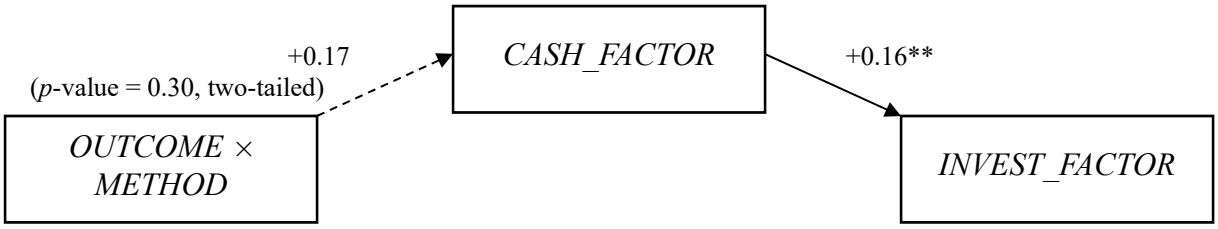
Figure 3 Path analyses involving *INVEST_FACTOR*: The distinct mediating role of trust

Panel A: The effect of *OUTCOME* × *METHOD* on *INVEST_FACTOR* via *TRUST_FACTOR*



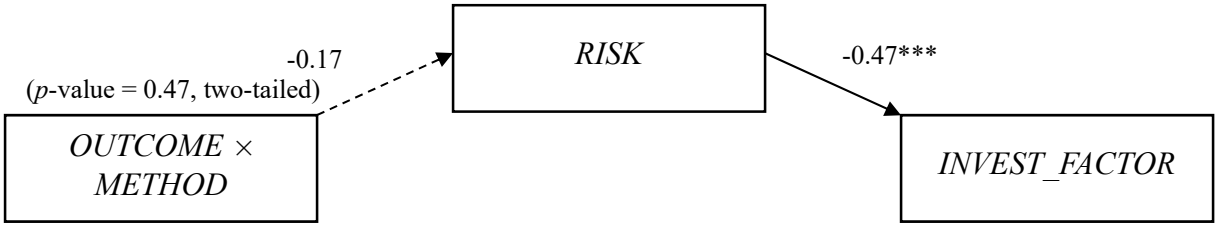
TRUST_FACTOR is the principal component analysis component that loads primarily on *TRUST_DECISIONS* (0.94) and *TRUST_REPORTING* (0.94), and has an eigenvalue of 2.10. Goodness of fit indices suggest that our data fit the model well in panel A (χ^2 = 0.55, *p*-value = 0.46; CFI = 1.00; TLI = 1.02; RMSEA = 0.00).

Panel B: The effect of *OUTCOME* × *METHOD* on *INVEST_FACTOR* via *CASH_FACTOR*



CASH_FACTOR is the principal component analysis component that loads primarily on *CASH_OUTCOME* (0.65) and *CASH_METHOD* (0.90), and has an eigenvalue of 1.03. Goodness of fit indices suggest that our data *do not* fit the model well in panel B (χ^2 = 4.33, *p*-value = 0.04; CFI = 0.54; TLI = -0.39; RMSEA = 0.13).

Panel C: The effect of *OUTCOME* × *METHOD* on *INVEST_FACTOR* via *RISK*



RISK reflects participants' responses to "[t]o what extent do you believe that the risk that Hi-Tech will experience financial difficulty in the foreseeable future increased/decreased after publication of the industry analyst's article?" The scale related to the *RISK* question ranged from "Decreased significantly [-4]" to "Increased significantly [+4]." Goodness of fit indices suggest that our data *do not* fit the model well in panel C (χ^2 = 5.42, *p*-value = 0.02; CFI = 0.96; TLI = 0.88; RMSEA = 0.16).

Figure 3 presents path analyses examining whether the interaction effect of *OUTCOME* and *METHOD* on *INVEST_FACTOR* is mediated by *TRUST_FACTOR* (panel A), *CASH_FACTOR* (panel B), or *RISK* (panel C). *OUTCOME* reflects the outcome of earnings management (*inconsistent with shareholders' interests* [0] vs. *consistent with shareholders' interests* [1]). *METHOD* reflects whether managers used *accruals* [0] or *real methods* [1] to manage earnings. *INVEST_FACTOR* is the principal component analysis component loading on *FUTURE_PERF* (0.88), *RISK* (-0.66), and *INVEST* (0.86), and has an eigenvalue of 1.96.

Links that are significant at the 1% and 5% level (one-tailed) are represented by *** and **, respectively. Significant (insignificant) links are presented as solid (dotted) lines.

TABLE 1
Correlations and descriptive statistics

Panel A: Correlation matrix – Pearson (Spearman) correlations below (above) diagonal

	TRUST_ DECISIONS	***TRUST_ REPORTING***	***TRUST_ FACTOR***	***CASH_ OUTCOME***	***CASH_ METHOD***	***CASH_ FACTOR***	***FUTURE_ PERF***	***RISK***	***INVEST***	***INVEST_ FACTOR***
TRUST_DECISIONS		0.82***	0.94***	0.38***	0.12	0.22***	0.47***	-0.18**	0.52***	0.50***
TRUST_REPORTING	0.82***		0.92***	0.31***	0.09	0.15**	0.47***	-0.20***	0.46***	0.48***
TRUST_FACTOR	0.94***	0.94***		0.50***	0.05	0.22***	0.45***	-0.15**	0.48***	0.46***
CASH_OUTCOME	0.36***	0.31***	0.48***		0.25***	0.64***	0.12*	0.09	0.20***	0.10
CASH_METHOD	0.13*	0.10	0.07	0.24***		0.88***	0.14*	-0.11	0.16**	0.18**
CASH_FACTOR	0.23***	0.18**	0.24***	0.65***	0.90***		0.14*	-0.05	0.19***	0.17**
FUTURE_PERF	0.48***	0.47***	0.48***	0.13*	0.13*	0.14*		-0.37***	0.65***	0.89***
RISK	-0.20***	-0.21***	-0.18**	0.08	-0.08	-0.01	-0.39***		-0.30***	-0.62***
INVEST	0.52***	0.48***	0.51***	0.21***	0.17**	0.21***	0.68***	-0.34***		0.82***
INVEST_FACTOR	0.51***	0.49***	0.50***	0.12*	0.16**	0.16**	0.88***	-0.66***	0.86***	

TABLE 1
Correlations and descriptive statistics (Continued)

Panel B: Descriptive statistics – mean [SD]

	OUTCOME			
	inconsistent with shareholders' interests		***consistent with shareholders' interests***	
	[1] *accruals* n = 48	[2] *real methods* n = 43	[3] *accruals* n = 45	[4] *real methods* n = 49
TRUST_DECISIONS**:** *"What level of trust do you have that Hi-Tech's executives made operating, investing, and financing decisions in the interest of shareholders?"*	3.56 [1.40]	3.49 [1.53]	4.20 [1.65]	5.27 [1.46]
TRUST_REPORTING**:** *"What level of trust do you have that Hi-Tech's executives reported the results of those decisions to shareholders in good faith?"*	3.44 [1.34]	3.63 [1.56]	3.91 [1.56]	4.88 [1.42]
TRUST_FACTOR**:** *[Principal component analysis component based on TRUST and CASH questions]*	-0.45 [0.78]	-0.36 [0.92]	0.07 [1.04]	0.69 [0.84]
CASH_OUTCOME**:** *"[H]ow does [OUTCOME] affect the amount of cash available to Hi-Tech in the future?"*	-1.40 [1.20]	-1.44 [1.10]	0.73 [1.83]	0.35 [1.99]
CASH_METHOD**:** *"[H]ow does the specific act of [METHOD] affect the amount of cash available to Hi-Tech in the future?"*	-0.19 [1.20]	-1.07 [1.65]	0.18 [1.11]	-0.45 [1.62]
CASH_FACTOR**:** *[Principal component analysis component based on TRUST and CASH questions]*	-0.13 [0.70]	-0.62 [1.02]	0.59 [0.85]	0.13 [1.04]
FUTURE_PERF**:** *"What is your revised expectation of Hi-Tech's future financial performance after publication of the industry analyst's article?"*	-1.21 [1.20]	-1.42 [1.16]	-1.56 [1.22]	-0.94 [1.11]
RISK**:** *"To what extent do you believe that the risk that Hi-Tech will experience financial difficulty in the foreseeable future increased/decreased after publication of the industry analyst's article?"*	0.60 [1.27]	0.19 [1.31]	1.04 [1.71]	0.45 [1.21]
INVEST**:** *"[W]ould you increase or decrease Hi-Tech's relative importance in your portfolio of equity securities?"*	-1.15 [1.37]	-1.14 [1.37]	-1.47 [1.36]	-0.80 [0.96]
INVEST_FACTOR**:** *[Principal component analysis component based on FUTURE_PERF, RISK, and INVEST]*	0.01 [0.97]	0.03 [0.94]	-0.34 [1.16]	0.27 [0.86]

TABLE 1
Correlations and descriptive statistics (Continued)

Table 1 presents the correlations (panel A) and descriptive statistics (panel B) for the variables in the experiment. All responses were provided on 9-point scales. In the experiment, we manipulated *OUTCOME* and *METHOD*. *OUTCOME* reflects the outcome of earnings management (*inconsistent with shareholders' interests* vs. *consistent with shareholders' interests*). *METHOD* reflects whether managers used *accruals* or *real methods* to manage earnings.

We asked participants to provide their trust in managers' decisions, i.e., *TRUST_DECISIONS*, and their trust in managers' reporting, i.e., *TRUST_REPORTING*. The scales related to these questions ranged from "Very low [1]" to "Very high [9]." To control for shareholders' assessments of the firm's cash flows, we also asked participants to provide their assessments of the cash available to the firm in the future as a result of *OUTCOME*, i.e., *CASH_OUTCOME*, and their assessments of the cash available to the firm in the future as a result of *METHOD*, i.e., *CASH_METHOD*. The scales related to these questions ranged from "Very negatively [-4]" to "Very positively [+4]." Using principal component analysis, we create *TRUST_FACTOR* and *CASH_FACTOR* from participants' assessments of the two possible mediating mechanisms (i.e., *TRUST* and *CASH*). As expected, *TRUST_FACTOR* loads primarily on *TRUST_DECISIONS* (0.94) and *TRUST_REPORTING* (0.94), and *CASH_FACTOR* loads primarily on *CASH_OUTCOME* (0.65) and *CASH_METHOD* (0.90). The eigenvalues for *TRUST_FACTOR* and *CASH_FACTOR* are 2.10 and 1.03, respectively. *TRUST_FACTOR* and *CASH_FACTOR* account for 78 percent of the variance in the *TRUST* and *CASH* measures.

We also asked participants to provide revised investment-related assessments (*FUTURE_PERF*, *RISK, INVEST*). The scale related to the *FUTURE_PERF* question ranged from "Much more negative than previous assessment [-4]" to "Much more positive than previous assessment [+4]." The scale related to the *RISK* question ranged from "Decreased significantly [-4]" to "Increased significantly [+4]." The scale related to the *INVEST* question ranged from "Definitely further decrease [-4]" to "Definitely further increase [+4]." Using principal component analysis, we also create *INVEST_FACTOR* from participants' revised investment-related assessments. *INVEST_FACTOR* loads on *FUTURE_PERF* (0.88), *RISK* (-0.66), and *INVEST* (0.86). The eigenvalue for *INVEST_FACTOR* is 1.96 and accounts for 65 percent of the variance in the revised investment-related assessments.

In panel A, significance at the 1%, 5%, and 10% level (two-tailed) are represented by ***, ** and *, respectively. In panel B, we report the descriptive statistics according to the experimental conditions to which participants were assigned.

TABLE 2
The effects of *OUTCOME* and *METHOD* on *TRUST_FACTOR* (Hypothesis 1)

Panel A: Analysis of variance

Source of variance	**df**	**Mean Square**	***F*-stat.**	***p*-value**
Main effects:				
OUTCOME	1	28.17	35.03	< 0.01 (2T)
METHOD	1	5.68	7.07	< 0.01 (2T)
Two-way interaction effect:				
OUTCOME × *METHOD* (Hypothesis 1)	1	3.24	4.04	0.02 (1T)
Error	181	0.80		

Panel B: Planned comparisons

	Difference	**df**	***t*-stat.**	***p*-value**
[4] *consistent with shareholders' interests/real methods* vs.				
[1] *inconsistent with shareholders' interests/accruals*	1.13	95	6.85	< 0.01 (1T)
[2] *inconsistent with shareholders' interests/real methods*	1.05	90	5.71	< 0.01 (1T)
[3] *consistent with shareholders' interests/accruals*	0.62	92	3.18	< 0.01 (1T)
[2] vs. [1] (effect of *METHOD* within *inconsistent with shareholders' interests*)	0.09	89	0.48	0.63 (2T)
[4] vs. [3] (effect of *METHOD* within *consistent with shareholders' interests*)	0.62	92	3.18	< 0.01 (1T)
[3] vs. [1] (effect of *OUTCOME* within *accruals*)	0.52	91	2.72	< 0.01 (2T)
[4] vs. [2] (effect of *OUTCOME* within *real methods*)	1.05	90	5.71	< 0.01 (1T)

Table 2, panel A presents the analysis of variance examining the effects of *OUTCOME* and *METHOD* on participants' assessments of trust in managers (*TRUST_FACTOR*). In the experiment, we manipulated *OUTCOME* and *METHOD*. *OUTCOME* reflects the outcome of earnings management (*inconsistent with shareholders' interests* vs. *consistent with shareholders' interests*). *METHOD* reflects whether managers used *accruals* or *real methods* to manage earnings.

We asked participants to provide their trust in managers' decisions, i.e., *TRUST_DECISIONS*, and their trust in managers' reporting, i.e., *TRUST_REPORTING*. The scales related to these questions ranged from "Very low [1]" to "Very high [9]." Using principal component analysis, we create *TRUST_FACTOR* from participants' assessments of the two possible mediating mechanisms (i.e., *TRUST* and *CASH*). As expected, *TRUST_FACTOR* loads primarily on *TRUST_DECISIONS* (0.94) and *TRUST_REPORTING* (0.94). The eigenvalue for *TRUST_FACTOR* is 2.10.

Table 2, panel B presents the planned comparisons associated with Hypothesis 1. The *p*-values for the predicted effects correspond to one-tailed tests (1T). To obtain the one-tailed *p*-values associated with the *F*-statistics, we first convert these statistics to *t*-statistics (given that each *F*-statistic has only 1 df associated with the numerator). All other *p*-values correspond to two-tailed tests (2T).

TABLE 3
The effects of *OUTCOME* and *METHOD* on *CASH_FACTOR*

Panel A: Analysis of variance

Source of variance	**df**	**Mean Square**	***F*-stat.**	***p*-value**
Main effects:				
OUTCOME	1	24.83	29.92	< 0.01 (1T)
METHOD	1	10.45	12.59	< 0.01 (1T)
Two-way interaction effect:				
OUTCOME × *METHOD*	1	0.01	0.01	0.93 (2T)
Error	181	0.83		

Panel B: Planned comparisons

	Difference	**df**	***t*-stat.**	***p*-value**
OUTCOME: *inconsistent with shareholders' interests* vs. *consistent with shareholders' interests*	-0.71	183	5.16	< 0.01 (1T)
METHOD: *accruals* vs. *real methods*	0.44	183	3.06	< 0.01 (1T)

Table 3, panel A presents the analysis of variance examining the effects of *OUTCOME* and *METHOD* on participants' assessments of the firm's cash flows (*CASH_FACTOR)*. In the experiment, we manipulated *OUTCOME* and *METHOD*. *OUTCOME* reflects the outcome of earnings management (*inconsistent with shareholders' interests* vs. *consistent with shareholders' interests*). *METHOD* reflects whether managers used *accruals* or *real methods* to manage earnings.

We asked participants to provide their assessments of the cash available to the firm in the future as a result of *OUTCOME*, i.e., *CASH_OUTCOME*, and their assessments of the cash available to the firm in the future as a result of *METHOD*, i.e., *CASH_METHOD*. The scales related to these questions ranged from "Very negatively [-4]" to "Very positively [+4]." Using principal component analysis, we create *CASH_FACTOR* from participants' assessments of the two possible mediating mechanisms (i.e., *TRUST* and *CASH*). As expected, *CASH_FACTOR* loads primarily on *CASH_OUTCOME* (0.65) and *CASH_METHOD* (0.90). The eigenvalue for *CASH_FACTOR* is 1.03.

Table 3, panel B presents the planned comparisons related to participants' assessments of the firm's cash flows. The *p*-values for the predicted effects correspond to one-tailed tests (1T). To obtain the one-tailed *p*-values associated with the *F*-statistics, we first convert these statistics to *t*-statistics (given that each *F*-statistic has only 1 df associated with the numerator).

TABLE 4
The mediating role of trust on the effect of *OUTCOME* × *METHOD* on *INVEST_FACTOR* (Hypothesis 2)

Panel A: Regression analyses testing the association between *TRUST_FACTOR* and *INVEST*

$$INVEST = \alpha_0 + \alpha_1 CASH\_FACTOR + \alpha_2 RISK + \varepsilon \quad (1)$$
$$INVEST = \alpha_0 + \alpha_1 CASH\_FACTOR + \alpha_2 RISK + \alpha_3 TRUST\_FACTOR + \varepsilon \quad (2)$$

	(1)		(2)	
	Coeff.	***p*-value**	**Coeff.**	***p*-value**
Intercept (α_0)	-0.95	< 0.01 (2T)	-0.99	< 0.01 (2T)
CASH_FACTOR (α_1)	0.27	< 0.01 (1T)	0.14	0.05 (1T)
RISK (α_2)	-0.31	< 0.01 (1T)	-0.24	< 0.01 (1T)
TRUST_FACTOR (α_3)			0.56	< 0.01 (1T)
Adjusted R^2	0.15		0.32	

Panel B: Analysis of variance – *INVEST_FACTOR*

Source of variance	**df**	**Mean Square**	***F*-stat.**	***p*-value**
Main effects:				
OUTCOME	1	0.14	0.15	0.70 (2T)
METHOD	1	4.57	4.72	0.03 (2T)
Two-way interaction effect:				
OUTCOME × *METHOD* (Hypothesis 2)	1	3.93	4.06	0.02 (1T)
Error	181	0.97		

Panel C: Planned comparisons – *INVEST_FACTOR*

	Difference	**df**	***t*-stat.**	***p*-value**
[2] vs. [1] (effect of *METHOD* within *inconsistent with shareholders' interests*)	0.02	89	0.12	0.91 (2T)
[4] vs. [3] (effect of *METHOD* within *consistent with shareholders' interests*)	0.61	92	2.90	< 0.01 (1T)

TABLE 4
The mediating role of trust on the effect of *OUTCOME* × *METHOD* on *INVEST_FACTOR* (Hypothesis 2) (Continued)

Table 4, panel A presents our regression analyses testing the association of *TRUST_FACTOR* with *INVEST* controlling for *CASH_FACTOR* and *RISK*. *TRUST_FACTOR* is the principal component analysis component that loads primarily on *TRUST_DECISIONS* (0.94) and *TRUST_REPORTING* (0.94), and has an eigenvalue of 2.10. *INVEST* reflects participants' responses to the question, "[b]ased on your revised overall assessments, would you increase or decrease Hi-Tech's relative importance in your portfolio of equity securities?" The scale related to the *INVEST* question ranged from "Definitely further decrease [-4]" to "Definitely further increase [+4]." *CASH_FACTOR* is the principal component analysis component that loads primarily on *CASH_OUTCOME* (0.65) and *CASH_METHOD* (0.90), and has an eigenvalue of 1.03. *RISK* reflects participants' responses to "[t]o what extent do you believe that the risk that Hi-Tech will experience financial difficulty in the foreseeable future increased/decreased after publication of the industry analyst's article?" The scale related to the *RISK* question ranged from "Decreased significantly [-4]" to "Increased significantly [+4]."

Table 4, panel B presents the analysis of variance examining the effects of *OUTCOME* and *METHOD* on *INVEST_FACTOR*. In the experiment, we manipulated *OUTCOME* and *METHOD*. *OUTCOME* reflects the outcome of earnings management (*inconsistent with shareholders' interests* vs. *consistent with shareholders' interests*). *METHOD* reflects whether managers used *accruals* or *real methods* to manage earnings. *INVEST_FACTOR* is the principal component analysis component loading on *FUTURE_PERF* (0.88), *RISK* (-0.66), and *INVEST* (0.86). The eigenvalue for *INVEST_FACTOR* is 1.96.

Table 4, panel C presents the planned comparisons testing the effect of *METHOD* within each of the levels of the *OUTCOME* variable.

The *p*-values for the predicted effects correspond to one-tailed tests (1T). To obtain the one-tailed *p*-values associated with the *F*-statistics, we first convert these statistics to *t*-statistics (given that each *F*-statistic has only 1 df associated with the numerator). All other *p*-values correspond to two-tailed tests (2T).