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## Institutional Investor Distraction and Earnings Management

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### Abstract

In this study, we explore the implications of institutional investor distraction for earnings management. Our identification approach relies on a firm-level measure of institutional investor distraction that exploits exogenous attention-grabbing shocks to unrelated parts of institutional investors' portfolios. We find that firms with distracted institutional shareholders engage more in both accrual-based and real earnings management. Further analyses show that the association between investor distraction and earnings management is stronger in firms with low analyst coverage and weak board monitoring, as well as in firms where managing earnings upward allows meeting or just beating their earnings target. Collectively, our results suggest that managers exploit the loosening in monitoring intensity resulting from investor distraction by engaging in earnings management. Even in the presence of institutional investors with superior monitoring abilities, limited attention may induce insufficient monitoring of earnings management practices.

*JEL classification:* G23, G32, G34, M41

*Keywords:* earnings management, investor distraction, monitoring intensity, discretionary accruals, real earnings management

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## 1. Introduction

The past decades have witnessed a well-documented increase in the ownership of institutional investors in U.S. corporations (e.g., Aghion, Van Reenen, and Zingales, 2013). Institutional investors now own the great majority of U.S. firms and represent the most important set of shareholders. Existing evidence indicates that they are powerful shareholders who monitor managers and firms' decisions (e.g., Froot, Scharfstein, and Stein, 1992; Hartzell and Starks, 2003; Parrino, Sias, and Starks, 2003; McCahery, Sautner, Starks, 2016). Consistent with institutional investors' superior abilities to monitor and discipline managers, prior studies show that institutional ownership is negatively related to earnings management (e.g., Bushee 1998; Chung, Firth, and Kim, 2002; Roychowdhury 2006; Koh 2007; Khurana, Li, and Wang, 2017). Importantly, these studies show that institutional investors who are strong monitors (e.g., blockholders) deter earnings management. In this paper, we show that, when institutional investors (and in particular strong monitors) are distracted and shift their attention to unrelated parts of their portfolios, firms engage more in earnings management. That is, even in the presence of institutional investors, earnings management practices may be temporarily insufficiently monitored.<sup>1</sup>

Attention is generally considered a resource in limited supply (e.g., Kahneman, 1973; Baker and Wurgler, 2011). Institutional investors, who often hold portfolios of hundreds or thousands of stocks, are subject to attention constraints. These attention constraints imply that institutional investors cannot monitor simultaneously all their portfolio firms with the same intensity (e.g., Kempf, Manconi, and Spalt, 2017; Schmidt, 2018). At certain points in time and for some of their portfolio firms, institutional investors may therefore become "distracted" shareholders and provide less than the otherwise optimal monitoring intensity. Prior studies investigating the role played by institutional investors in deterring earnings management generally consider that, at the firm level, the monitoring intensity depends on the level of institutional ownership. In comparison, an important refinement of our approach is to account for the possibility that two firms with the same level of institutional ownership may not be subject to the same

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<sup>1</sup> The literature has also investigated the link between investor monitoring and the quality of reporting in the context of private equity. For example, Cumming and Walz (2010) find that, in the presence of information asymmetries and impediments to monitor effectively, fund managers systematically overreport returns of unsold deals. Consistent with this finding, we document that attention-driven lower institutional investor monitoring is associated with higher earnings management in publicly listed firms.

monitoring intensity depending on whether their respective institutional shareholders are distracted.<sup>2</sup> To measure investor distraction, we replicate the variable developed by Kempf et al. (2017). Specifically, their approach exploits exogenous shocks (i.e., extreme returns) to unrelated industries by a given firm's institutional shareholders to identify periods where shareholders are likely to shift attention away from the firm. The measure of investor distraction aggregates the level of distraction of all the institutional investors at the firm level, overweighting the distraction of investors with superior means and incentives to monitor management (Fich, Harford, and Tran, 2015; Edmans and Holderness, 2017).<sup>3</sup> Earnings management is a common way for managers to maximize their own benefits at the expense of long-term firm value. On the one hand, prior studies show that managers whose compensation is highly sensitive to stock prices have incentives to manipulate earnings to inflate stock prices (e.g., Cheng and Warfield, 2005; Bergstresser and Philippon, 2006; Cohen, Dey, and Lys, 2008). On the other hand, extant literature shows that earnings management is detrimental to shareholders, as it reduces the quality of financial disclosure and increases the cost of capital (e.g., Aboody, Hughes, and Liu, 2005; Kim and Sohn, 2013), and ultimately decreases long-term firm value (e.g., Mizik and Jacobson, 2007; Cohen and Zarowin, 2010; Kothari, Mizik, and Roychowdhury, 2015). When institutional shareholders are distracted, managers may therefore react to the temporary loosening of monitoring intensity by engaging in income-increasing earnings management.<sup>4</sup>

In our empirical analysis, we analyze the relationship between institutional investor distraction and both accrual-based and real earnings management, which are the most common earnings management practices. Following Dechow, Sloan, and Sweeney (1995), we measure accrual-based earnings management using the modified Jones (1991) model. Following Roychowdhury (2006), we measure real earnings management using abnormal production costs, abnormal discretionary expenses, and abnormal operating cash flows. Using a large sample of U.S. listed firms for 1994-2016 period (30,661 firm-year observations),

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<sup>2</sup> As we explain in the empirical methodology, we systematically control for the level of institutional ownership in all our tests, hence the effect of investor distraction on earnings management we document cannot be attributed to differences in institutional ownership.

<sup>3</sup> In auxiliary analyses, we analyze the effect of investor distraction on earnings management considering a variety of distraction measures. For example, we construct separate measures of distraction for investors that have a large stake in the company and those for which the firm represents a large fraction of their portfolio. We also construct measures of investor distraction based on positive extreme returns only and on negative extreme returns only.

<sup>4</sup> Our main hypothesis and empirical analysis relates to income-increasing earnings management because it is likely to be the outcome of an opportunistic behavior of managers when institutional investors are distracted. Lafond (2008) suggests that if one is concerned about self-serving practices of managers, the focus should be on income-increasing earnings management.

we find strong evidence that institutional investor distraction is positively associated with both accrual-based and real earnings management. The positive association between institutional investor distraction and earnings management is both statistically and economically meaningful. The increase in the discretionary accruals (real earnings management) associated with a one-standard deviation higher institutional investor distraction inflates ROA by about 0.73 percentage points (3 percentage points). Importantly, the effect of institutional investor distraction on earnings management we document is arguably causal. By construction, the distraction measure we use is based on attention-grabbing shocks in unrelated industries and is therefore not related to the fundamentals of the firm.

In robustness checks, we conduct tests using alternative ways of measuring accrual-based and real earnings management (Dechow and Dichev, 2002; McNichols, 2002; Larcker and Richardson, 2004; Kothari, Leone, and Wasley, 2005; Cohen and Zarowin, 2010; Owens, Wu, and Zimmerman, 2016; Chen, Hribar, and Melessa, 2018). We also include numerous additional control variables (e.g., performance, auditor, CEO, investor, analyst, stock returns, board, and share issuance variables) as well as industry-by-year fixed effects. Importantly, we control for the M&A activity of firms because prior studies show both that acquiring firms manage earnings upward in the periods prior to the merger agreement (e.g., Erickson and Wang, 1999) and that M&A activity ramps up during investor distraction periods (Kempf et al., 2017). To further address omitted variable bias concerns, we conduct analysis on one-year changes in the variables that control away for unobservable and observable persistent differences across firms. The results from these tests confirm the robustness of the association between institutional investor distraction and earnings management.

To ensure that our results are not the product of randomness but are driven by our ability to correctly capture times when institutional investors are distracted, we have also conducted a placebo test. Key to our identification strategy of distracted investors is the way we determine the attention-grabbing industries. Following Kempf et al. (2017) and motivated by Barber and Odean (2007), we use “extreme” industry returns (both positive and negative) to identify attention-grabbing events. We run a placebo test, in which, rather than focusing on the (true) distribution of industry returns, we randomly select the attention-grabbing industries. We then compute a measure of investor distraction based on these placebo attention-grabbing shocks and estimate our baseline regression using the placebo institutional investor

distraction measure. We repeat this procedure 2,500 times and each time we save the coefficient estimate on the placebo investor distraction measure. The coefficient on our (true) measure of investor distraction lies well to the right of the distribution of placebo coefficients. The result of this placebo test lends support to our identification strategy.

In additional tests, we seek to further characterize the effect of investor distraction on earnings management by exploring how managers choose between accrual-based and real earnings management when institutional investors are distracted. Cohen et al. (2008) provide evidence that accrual-based earnings management (real earnings management) increased (declined) prior the passage of Sarbanes-Oxley Act (SOX) in 2002 and declined (increased) after the passage of SOX, suggesting that firms switched from accrual-based to real earnings management methods after the passage of SOX. Consistent with Cohen et al. (2008), we find that investor distraction has a stronger effect on real-earnings management after the passage of SOX.

Next, we explore whether the association between institutional investor distraction and earnings management exhibits cross-sectional heterogeneity depending on the strength of other monitoring mechanisms. When investors are distracted, their lack of attention and the loosening in monitoring intensity may be at least partially compensated by the presence of other monitors such as boards. This should be particularly the case for real earnings management because it is under a relatively weaker regulatory focus than accruals management and thus requires greater outside monitoring (e.g., Graham Harvey, and Rajgopal, 2005; Cohen and Zarowin, 2010; Kothari et al., 2015). We focus on two key alternative monitoring mechanisms, namely analyst coverage and the board independence. Analysts represent an external source of monitoring and are able to influence corporate actions including earnings management (Jensen and Meckling, 1976; Healy and Palepu, 2001; Yu, 2008; Degeorge, Ding, Jeanjean, and Stolowy, 2013; Chen, Harford and Li, 2015). Similarly, independent directors have incentives to develop a reputation as skilled decision control experts in the corporate directorship market (Fama, 1980). Prior empirical evidence indicates that independent board members are better able to influence the design of CEO compensation and to influence corporate decisions (Core et al., 1999; Kaplan, 2012; Peasnell et al. 2005; Klein 2002). We find that the effect of investor distraction on real earnings management is significantly greater for firms with low analyst coverage and low board independence. These results are

consistent with managers being able to take advantage of institutional investor distraction to a greater extent when monitoring from other sources is low.

To better identify firms that are more likely to have managed earnings upward, we follow Lo, Ramos, and Rogo (2017) and consider both the process of earnings management and its outcome. We split our sample firms with positive abnormal accruals into two groups depending on whether they meet or just beat the earnings benchmark. Arguably, firms that have abnormal positive accruals and that happen to meet or just beat the earnings forecasts are more likely to have engaged in upward earnings management. We find that the positive relationship between investor distraction and positive abnormal accruals is mainly driven by firms that meet or just beat the earnings benchmark, which lends further support to investor distraction inducing income-increasing earnings management. We find similar results when we consider real earnings management.

Finally, we examine whether institutional investor distraction is associated with earnings restatement, which can be seen as a consequence of earnings management, as well as with long-term stock returns. To do so, we collect data on financial restatements for firms from Audit Analytics, which tracks financial restatement disclosures from 8-Ks, 10-Ks, 10-Qs, and other filings. The results show that institutional investor distraction statistically increases the probability of earnings restatement in firms with positive discretionary accruals. In contrast, we find that the association between institutional investor distraction and the probability of earnings restatement is not statistically significant for the subsample of firms with negative discretionary accruals. These results are consistent with our findings that institutional investor distraction mostly has an effect on income-increasing earnings management. We also find that investor distraction has a negative and statistically significant effect on future stock returns, which aggregate the effect of these different actions that managers may have taken while shareholders are distracted. Taken together our results for the effect of investor distraction on earnings management, financial restatements, and future stock performance indicate that the consequences of a temporary loosening in monitoring intensity may have important implications for long-term value creation in firms.

Our paper contributes to several streams of literature. First, our study contributes to the body of research in finance and economics documenting the effects of attention, and more generally information asymmetry, of institutional investors on various outcomes. For example, a large strand of that literature

examines the role of investor attention for asset prices and stock returns (see Lim and Teoh (2010) for a survey). In the private equity literature, studies examine the consequences of information asymmetry between institutional investors and fund managers. Cumming and Valz (2010) show that fund managers may report inflated valuations of private investee companies that are not yet sold to obtain more funds from the institutional investors. Cumming and Dai (2011) show that investee firm valuations in the venture capital (VC) market are positively related to limited attention of VCs. In his review of investments in private equity funds, Phalippou (2007) argues that it is an open and interesting question to know if institutional investors are tricked by performance reports. Phalippou and Gottschalg (2009) document that the performance of private equity funds as reported by industry associations or previous research is overstated, with a large part of performance being driven by inflated accounting valuation of ongoing investments. Our paper expands these results by showing that even in the case of publicly listed companies that are less opaque and have more transparent disclosure of their activities and performance, managers are able to take advantage of investor distraction to artificially boost their reported earnings.

Second, our paper is also related to more recent studies investigating the impact of institutional investor distraction on corporate actions for publicly listed companies. Kempf et al. (2017) show that managers become opportunistic when investors are distracted (i.e. firms make more value destroying acquisitions and managers are more likely to receive lucky grants). Schmidt (2018) show that distracted professional asset managers are significantly less likely to trade in other stocks. Chen, Dong, and Lin (2019) and Liu, Low, Masulis, and Zhang (2020) show that shareholder distraction induces managers to invest less in CSR and weakens board governance. Abramova, Core, and Sutherland (2020) and Basu, Pierce, and Stephan (2019) show that institutional investor attention affects firms' disclosure choices. Our paper contributes to this literature by relating investor distraction to earnings management, which represents an important corporate decision that has consequences for long-term value creation.

Third, our paper contributes to the corporate finance literature studying the links between ownership structure and the quality of earnings, and particularly earnings management. Prior studies document that institutional investors affect the quality of earnings reported by non-financial firms (e.g., Bushee, 1998; Chung et al., 2002; Roychowdhury, 2006; Koh, 2007; Kim, Miller, Wan, and Wang, 2016; Dai, Dharwadkar, Shi, and Zhang, 2017; Khurana et al., 2017). We expand existing literature by showing that



the intensity of the monitoring exerted by institutional investors on earnings management practices does not uniquely depend on the level of institutional ownership but also on investors' distraction. Hirshleifer and Teoh (2003) examine the consequences of limited attention for disclosure, financial reporting policy, and market trading. In their approach, investors sometimes neglect relevant aspects of the economic environments they face, such as strategic incentives of firms to manipulate investor perceptions. Our study on the effect institutional investor distraction on earnings management echoes, and at least partially addresses, two of the limitations highlighted by Hirshleifer and Teoh (2003). First, the distraction measure we use makes it possible to more explicitly analyze how investors allocate attention. Motivated by Barber and Odean (2007) and following Kempf et al. (2017), we assume that investors allocate more attention to firms in industries experiencing extreme returns.<sup>5</sup> Second, our paper focuses on earnings management and expands the results of Hirshleifer and Teoh (2003) by providing evidence that managers can take advantage of limited shareholder attention, and the temporary looser monitoring intensity it induces, to engage in earnings management.

Finally, our paper adds to the long-standing literature in corporate finance and accounting investigating the determinants of earnings management. Recent contributions highlight the importance of stakeholder orientation (Ni, 2020), dividend policy (He, Zaiats, and Zhang, 2017), CEO tenure (Ali and Zhang, 2015), media news (Chahine, Mansi, and Mazboudi 2015), languages (Kim, Kim, and Zhou, 2017), and retaining employees (Gao, Zhang, and Zhang, 2018).

The rest of the paper is organized as follows. Section 2 provides the background literature and hypothesis development. Section 3 describes our data and methodology. Section 4 presents the results and discusses them. Section 5 concludes.

## **2. Related Literature and Hypothesis Development**

Managers have large discretion in financial reporting. Due to agency problems, they have incentives to manipulate earnings for their own benefits. For example, prior evidence shows that managers have incentives to inflate stock prices, which, in turn, increases their own wealth (e.g., Bergstresser and Philippon, 2006; Cheng and Warfield, 2005; Cohen et al., 2008). Managers manipulate

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<sup>5</sup> This approach can be further justified on the grounds that extreme return periods are periods when learning about uncertainty can be particularly beneficial (e.g., Kacperczyk, Van Nieuwerburgh, and Veldkamp, 2016).

earnings via two mechanisms: accrual-based and real earnings management. We discuss in detail how we measure these two forms of earnings management in the next section. Accrual-based earnings management refers to changing the accounting methods or estimates used when presenting a given transaction in the financial statements. Real earnings management refers to influencing real activities to manipulate earnings. Both forms of earnings management are detrimental to shareholders, as earnings management reduces the quality of financial disclosure and increases the cost of capital (e.g., Aboody et al., 2005; Kim and Sohn, 2013), and ultimately decreases firm long-term value (e.g., Mizik and Jacobson, 2007; Cohen and Zarowin, 2010; Kothari et al., 2015). Graham et al. (2005) show that 78% of executives report they would forego profitable investment opportunities to inflate near-term earnings.

Institutional investors play a central role in accounting choices (Bird and Karolyi, 2016; Cumming and Walz, 2010). In the context of earnings management, prior studies show that institutional ownership is negatively related to earnings management (e.g., Bushee, 1998; Chung et al., 2002; Roychowdhury, 2006; Koh, 2007; Khurana et al., 2017). Despite their superior abilities to monitor and discipline managers, institutional investors, who often hold a portfolio of hundreds or thousands of stocks, are subject to attention constraints (e.g., Sims, 2003; Kacperczyk et al., 2016). These attention constraints imply that institutional investors cannot monitor simultaneously all their portfolio firms with the same intensity (Kempf et al., 2017). When institutional shareholders are distracted away and loosen their monitoring, managers have greater leeway to maximize their private benefits. Our central hypothesis is that managers react to the temporary loosening of monitoring intensity, brought about by investor distraction, by engaging in upward earnings management.

*Hypothesis 1:* When a firm's institutional shareholders are distracted, managers engage in income-increasing earnings management.

An alternative possibility is that managers take advantage of investor distraction to partially unwind prior upward earnings management. When institutional investors are distracted, managers may feel released from the pressure to report good performance and perceive reduced costs attached to reporting poorer performance. Consistent with this argument, prior evidence suggests that firms pre-announce their

report dates well ahead of time when earnings are good to attract investor attention and on the contrary, do it at the very last moment when earnings are bad (Boulland and Dessaint, 2017). In the same vein, Koester, Lundholm, and Soliman (2016) show that extreme positive earnings surprises are a successful method for attracting investors' attention. If this happens to be predominantly the case, we should observe that managers engage less in income-increasing earnings management when institutional shareholders shift their attention away from the firm.

Finally, a third possibility is that institutional investor distraction does not affect earnings management. It could be the case if managers are unable to detect investor distraction and therefore do not alter earnings management behavior. However, survey evidence suggests that managers generally know who their key shareholders are and interact frequently with them directly or through Investor Relations departments (e.g., Froot et al., 1992; Parrino et al., 2003; Hartzell and Starks, 2003; Graham et al., 2005; McCahery et al., 2016). In addition, Kempf et al. (2017) show that, when a firm's investors are distracted, they are less likely to participate in conference calls and less likely to initiate a proposal in general meetings.<sup>6</sup> Managers further seem to modify their disclosure choices as a response to investor distraction. Abramova et al. (2020) show that managers respond to institutional investor attention by increasing the number of forecasts and 8-K filings. Basu et al. (2019) find that firms take advantage of investor inattention to disclose more aggressive non-GAAP performance metrics and to reduce the provision of management guidance.

### **3. Data and Variables**

#### *3.1. Data sources and sample construction*

We use a combination of several databases for our empirical analysis. We obtain accounting data from Compustat, market data from CRSP, analyst data from I/B/E/S, and board and entrenchment data from Institutional Shareholder Services (ISS, formerly RiskMetrics). Data on accounting restatements are from Audit Analytics. Data on institutional investors are from Thomson Reuters 13F File. Institutional investors are required periodically to report their portfolio holdings. Using data from 13F File, for each firm, we can observe the pool of its institutional shareholders. Conversely, for each institutional investor,

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<sup>6</sup> DeHaan, Shevlin, and Thornock (2015) provide evidence that managers report bad news after market hours, on busy days, and with less advance notice. Their results further suggest that managers notice and take advantage of periods of low attention.

we can observe the pool of stocks that it concurrently holds. This feature of the data makes it possible to capture shifts in investor attention by identifying times where institutional investors are likely to shift their attention towards some of their portfolio firms and away from others. We require our sample firms to have available data to compute the variables of our baseline regression presented in section 3.4. Our main sample consists of 30,661 U.S. firm-year observations for our baseline regression examining accruals management (26,838 for our baseline regression examining real earnings management) corresponding to 3,917 unique firms over the 1994-2016 period.

### 3.2. Measurement of institutional investor distraction

Our main variable of interest is institutional investor distraction at the firm level, computed following Kempf et al. (2017). It captures how much a given firm  $f$ 's institutional shareholders are distracted (i.e., shift their attention to unrelated parts of their portfolio) at a given point in time. We call this proxy *Investor Distraction* and define it so that higher values are associated with institutional shareholders that are more distracted. The intuition behind the computation of the measure is that a given investor  $i$  in firm  $f$  is more likely to be distracted if there is an attention-grabbing event in another industry, and if that other industry is important in investor  $i$ 's portfolio. To illustrate this approach, consider two identical firms A and B in a given industry and year and with the same levels of institutional ownership. Let's now assume that A's institutional shareholders have a relatively strong exposure to another industry (the banking industry, for example) and that B's institutional shareholders do not hold any bank stocks. If there is an attention-grabbing event in the banking industry, A's institutional shareholders will shift their attention towards banks. This implies that the monitoring intensity at firm A will (temporarily) decrease whereas it will remain constant at firm B. The investor distraction measure we use enables us to identify when, and for which firms, institutional investors are likely to be distracted and to loosen their monitoring intensity. We first compute an investor-level distraction score, and then aggregate the scores across all investors in the firm  $f$ . Specifically, we define institutional investor distraction for each firm  $f$  and calendar quarter  $q$  as:

$$Investor\ Distraction_{fq} = \sum_{i \in F_{q-1}} \sum_{IND \neq IND_f} \omega_{ifq-1} \times \omega_{iq-1}^{IND} \times IS_q^{IND} \quad (1)$$

where  $F_{q-1}$  denotes the set of firm  $f$ 's institutional shareholders at the end of quarter  $q-1$ ,  $IND$  denotes a given Fama-French 12 industry, and  $IND_f$  denotes firm  $f$ 's Fama-French industry.  $IS_q^{IND}$  captures whether a distraction event occurs in an industry other than  $IND_f$ , and  $\omega_{iq-1}^{IND}$  captures how much investor  $i$  cares about the other industry. The weight  $\omega_{ifq-1}$  captures how important investor  $i$  is for firm  $f$ . Intuitively, the investor distraction measure depends on whether shocks occur in other industries, whether investors care about those industries, and whether investors that are affected by the shock are potentially important monitors. We now explain the construction of these terms in greater detail.

$\omega_{iq-1}^{IND}$  is defined as the weight of industry  $IND$  in the portfolio of investor  $i$ .  $IS_q^{IND}$  is an industry-level measure of whether something distracting is going on in industry  $IND$  at quarter  $q$ . It is an indicator variable that equals one if an industry has the highest or lowest return across all 12 Fama-French industries in a given quarter. An important advantage of this definition is that the industry shocks used in the computation of the investor distraction measure are not mechanically related to the fundamentals of the firm we are interested in, since the firm's own industry is excluded. Thus, it is a plausible candidate for identifying exogenous shocks to investor attention (Kempf et al., 2017).

The product  $\omega_{iq-1}^{IND} \times IS_q^{IND}$  measures for each investor  $i$  of firm  $f$  whether something distracting is going on in an unrelated industry ( $IS_q^{IND}$ ), and how much investor  $i$  cares about the unrelated industry ( $\omega_{iq-1}^{IND}$ ). Finally, we aggregate information across investors to obtain a firm-level distraction measure. As discussed previously, institutional investors differ in the level of intensity with which they monitor firms. This implies that equal weighting is not appropriate and therefore, consistent with Kempf et al. (2017), we take a weighted average, with weights  $\omega_{ifq-1}$ . We give more weight to investor  $i$  if (1) firm  $f$  has more weight in  $i$ 's portfolio, and (2) if  $i$  owns a larger fraction of firm  $f$ 's shares. The former captures that investors will on average spend more time and effort analyzing the biggest positions in their portfolio (Fich et al., 2015). The latter captures that large shareholders (blockholders) have strong incentives to monitor (Edmans and Holderness, 2017).

We therefore define:

$$\omega_{ifq-1} = \frac{QPFWeight_{ifq-1} + QPercOwn_{ifq-1}}{\sum_{i \in F_{q-1}} QPFWeight_{ifq-1} + QPercOwn_{ifq-1}} \quad (2)$$

Where,  $PercOwn_{ifq-1}$  is the fraction of firm  $f$ 's shares held by investor  $i$ , and  $PFweight_{ifq-1}$  is the market value weight of firm  $f$  in investor  $i$ 's portfolio. Following Kempf et al. (2017), to minimize the impact of outliers, all stocks held by investor  $i$  in quarter  $q-1$  are sorted by  $PFweight_{ifq-1}$  into quintiles, denoted  $QPFweight_{ifq-1}$ . Similarly, firm  $f$ 's shareholders' stakes are sorted by  $PercOwn_{ifq-1}$  into quintiles, denoted  $QPercOwn_{ifq-1}$ . We then scale by the term in the denominator so that the weights  $\omega_{ifq-1}$  add up to one. Finally, we smooth the measure over the last four quarters to obtain a yearly construct (we label the resulting variable *Investor Distraction*).

In sum, the measure of investor distraction we use depends on whether shocks occur in other industries, whether investors care about those other industries, and whether investors that are most affected by the unrelated shock are potentially important monitors. This measure of institutional investor distraction has three appealing features for the purpose of this study. First, it is plausibly exogenous to the economics of the stocks for which investors will be considered as distracted. Second, it takes into account heterogeneity among institutional investors in their monitoring intensity. Third, Kempf et al. (2017) provide direct evidence suggesting that it captures well institutional investor distraction. More precisely, when institutional investor distraction is high, a firm's investors are less likely to participate in conference calls and less likely to initiate a proposal in general meetings.

### 3.3. Measurement of accrual-based earnings management

Our main model to estimate accrual-based earnings management is the expanded version of the Jones (1991)'s model including the inverse of total assets, the change in revenues, and the level of gross property, plant, and equipment as determinants of non-discretionary accruals as in Dechow et al. (1995). We calculate *Discretionary Accruals* as the residuals from the following regression (industry subscripts omitted):

$$\frac{ACCRUALS_{i,t}}{AT_{i,t-1}} = \alpha_0 + \beta_1 \left( \frac{1}{AT_{i,t-1}} \right) + \beta_2 \frac{PPE_{i,t}}{AT_{i,t-1}} + \beta_3 \frac{(\Delta REV_{i,t} - \Delta AR_{i,t})}{AT_{i,t-1}} + \varepsilon_{i,t} \quad (3)$$

where  $i$  indexes firm and  $t$  indexes the year; *ACCRUALS* are total accruals, calculated as the difference between income before extraordinary items and operating cash flows.<sup>7</sup>  $AT$  is the book value of total assets.  $PPE$  is the gross amount of property, plant, and equipment.  $(\Delta REV - \Delta AR)$  is the change in sales revenue minus the change in accounts receivable scaled by lagged total assets. We estimate regression (3) in each year for each two-digit SIC code industry and require each industry-year to have at least 20 observations. We define our main measure of accrual-based earnings management, *Discretionary Accruals*, as the residuals from these industry-year regressions. *Discretionary Accruals* is a signed measure so that positive values indicate income-increasing discretionary accruals.

For robustness purposes, we also employ alternative discretionary accruals models. First, we follow Dechow and Dichev (2002) and regress total accruals on the lead, lag, and contemporaneous cash flow operation terms (CFO) scaled by lagged total assets. Second, we follow McNichols (2002) and augment equation (3) with the additional controls suggested by Dechow and Dichev (2002). Third, we follow Larcker and Richardson (2004) and augment equation (3) with the book-to-market ratio, included as a proxy for expected growth in the firm's operations. Fourth, Kothari et al. (2005) show that performance matching on return on assets controls for the effect of performance on measured discretionary accruals. We thus use discretionary accruals estimated based on equation (3) for a subsample of firms matched on two-digit SIC code, year and one-year-lagged ROA. Fifth, we follow Owens et al. (2016) and incorporate in (3) an indicator variable that equals one if CFO is less than zero and equals zero otherwise, the firm's abnormal stock return during fiscal year  $t$  (based on the CRSP equal-weighted market index), and an indicator variable that equals one if the firm's abnormal stock return is less than zero and equals zero otherwise. Sixth, Chen et al. (2018) show that the two-step procedure used to examine determinants of constructs such as discretionary accruals generates biased coefficients and standard errors that can lead to incorrect inferences. As a final robustness test, we use a one-step procedure where we directly regress total accruals on the regressors of the previously cited accruals models plus the firm-level variables of interest and control variables.

### 3.4. Measurement of real earnings management

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<sup>7</sup> We focus on operating accruals because they have a direct impact on earnings and have relatively high subjectivity (see Larson, Sloan, and Giedt (2018) for a guide on the use of accruals).

Following prior literature (e.g., Roychowdhury, 2006; Cohen and Zarowin, 2010; Kothari et al., 2015), we measure real earnings management using abnormal production costs, abnormal discretionary expenses, and abnormal operating cash flow. Specifically, using the model developed by Dechow, Kothari, and Watts (1998) and implemented by Roychowdhury (2006), we estimate abnormal production costs as follows:

$$\frac{PROD_{i,t}}{AT_{i,t-1}} = \beta_0 + \beta_1 \frac{1}{AT_{i,t-1}} + \beta_2 \frac{SALE_{i,t}}{AT_{i,t-1}} + \beta_3 \frac{\Delta SALE_{i,t}}{AT_{i,t-1}} + \beta_4 \frac{\Delta SALE_{i,t-1}}{AT_{i,t-1}} + \varepsilon_{i,t} \quad (4)$$

where  $i$  indexes the firm and  $t$  indexes the year;  $PROD$  is the sum of the cost of the goods sold and the change in inventory from year  $t-1$  to year  $t$ ;  $AT$  is the firm's book assets;  $SALES$  is the firm's sales revenue; and  $\varepsilon$  is the error term. We estimate equation (4) for each two-digit SIC code industry in each year and require each industry-year to have at least 20 observations. *Abnormal Production Costs* are defined as the regression residuals from the industry-year regressions. Overproduction refers to producing more goods than necessary to increase earnings. Higher values of *Abnormal Production Cost* indicate more real earnings management.

Further, we estimate abnormal discretionary expenses as follows:

$$\frac{DISX_{i,t}}{AT_{i,t-1}} = \beta_0 + \beta_1 \frac{1}{AT_{i,t-1}} + \beta_2 \frac{SALE_{i,t}}{AT_{i,t-1}} + \varepsilon_{i,t} \quad (5)$$

where  $DISX$  is the sum of R&D, advertising and selling, general and administrative expenses. Following Cohen and Zarowin (2010), in our main regression analysis, we set R&D and advertising expenses to zero if they are missing. All the other variables are defined in Equation (4). We conduct the same industry-year regressions and defined *Abnormal Discretionary Expenses* as the residuals from the regressions. Managers have the discretion to cut R&D, advertising and selling, general and administrative expenses to increase reported earnings. Lower values of *Abnormal Discretionary Expenses* indicate more real earnings management. We multiply it by minus one so that higher values indicate more real earnings management.



While setting missing values for R&D and advertising expenditures to zero when SG&A is available is a standard approach, recent findings show that this retreatment may be problematic. In particular, Koh and Reeb (2015) investigate whether missing R&D expenditures in financial statements indicate a lack of innovation activity and find that 10.5% of missing R&D firms file and receive patents. For robustness purposes, we also compute a measure of abnormal discretionary expenses (*Raw Abnormal Discretionary Expenses*) for which we do not set R&D and advertising expenses to zero if they are missing.

Last, we estimate abnormal operating cash flow as follows:

$$\frac{CFO_{i,t}}{AT_{i,t-1}} = \beta_0 + \beta_1 \frac{1}{AT_{i,t-1}} + \beta_2 \frac{SALE_{i,t}}{AT_{i,t-1}} + \beta_3 \frac{\Delta SALE_{i,t}}{AT_{i,t-1}} + \varepsilon_{i,t} \quad (6)$$

where *CFO* is the firm's operating cash flow. All the other variables are as defined in Equation (4). We conduct the same industry-year regressions and define *Abnormal Operating Cash Flow* as the residuals from these regressions. Abnormal operating cash flow captures sales manipulation reflecting managers' attempts to increase sales during the year by offering "limited-time" price discounts or more lenient credit terms.<sup>8</sup> Lower values of *Abnormal Operating Cash Flow* indicate more real earnings management. We multiply it by negative one so that higher values indicate more real earnings management.

To capture the aggregate effects of real earnings management<sup>9</sup>, we follow Roychowdhury (2006) and combine the three individual measures as follows:

$$\begin{aligned} \text{Real Earnings Management} = & \text{Abnormal Production Costs} + \\ & \text{Abnormal Operating Cash Flow} + \text{Abnormal Discretionary Expenses} \quad (7) \end{aligned}$$

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<sup>8</sup> Chapman and Steenburgh (2011) show that soup manufacturers roughly double the frequency and change the mix of marketing promotions (price discounts, feature advertisements, and aisle displays) at the fiscal quarter-end when they have greater incentives to boost earnings.

<sup>9</sup> As discussed by Srivastana (2019), models that measure REM do not control for differences in competitive strategy. Hence, a spurious correlation may exist between earnings management and a firm characteristic that varies with competitive strategy. In our case, this concern is minor because our core results hold for both accrual-based earnings management and real earnings management, and we do not expect investor distraction to vary according to the competitive strategy of a firm.

For robustness purposes, we follow Cohen and Zarowin (2010) and also compute the two following measures of real earnings management:

$$REM\ 1 = \text{Abnormal Production Costs} + \text{Abnormal Discretionary Expenses} \quad (8)$$

$$REM\ 2 = \text{Abnormal Discretionary Expenses} + \text{Abnormal Operating Cash Flow} \quad (9)$$

### 3.5. Empirical model

The main objective of our empirical analysis is to test the effect of investor distraction on earnings management. In our baseline analysis, we use the following specification:

$$\begin{aligned} \text{Earnings Management}_{i,t} = & \beta_0 + \beta_1 \text{Investor Distraction}_{i,t} + \beta_2 \text{Institutional Ownership}_{i,t} + \\ & \beta_3 \text{Size}_{i,t} + \beta_4 \text{Age}_{i,t} + \beta_5 \text{Leverage}_{i,t} + \beta_6 \text{Fixed Assets}_{i,t} + \beta_7 \text{Market to Book}_{i,t} + \\ & \beta_8 \text{Sales Growth}_{i,t} + \beta_9 \text{Std. Sales}_{i,t} + \beta_{10} \text{CFO}_{i,t} + \beta_{11} \text{Std. CFO}_{i,t} + \\ & \beta_{12} \text{Top5 institutional ownership}_{i,t} + Y_t + \text{Ind}_j + \epsilon_{i,t} \end{aligned} \quad (10)$$

where  $i$  indexes firm,  $t$  indexes the year, and  $\epsilon$  is the error term. *Earnings Management* is either accrual-based earnings management (*Discretionary Accruals*) or real earnings management (*Real Earnings Management*).  $Y_t$  denotes year fixed effects, and  $\text{Ind}_j$  denotes industry fixed effects based on two-digit SIC codes. The coefficient of interest is  $\beta_1$ , which captures the effect of investor distraction on earnings management. A positive and significant coefficient would suggest that when institutional shareholders are distracted and loosen their monitoring, managers engage in income-increasing earnings management. In all our tests, we control for *Institutional Ownership*, measured as the percentage of a firm's shares held by institutional investors. Our approach therefore examines whether controlling for institutional ownership, the level of distraction of a firm's institutional investors influences earnings management.

We further include a large set of potential determinants of earnings management used in prior studies (e.g., Bushee, 1998; Cheng and Warfield, 2005; Bergstresser and Philippon, 2006; Roychowdhury, 2006; Koh, 2007; Yu, 2008; Cohen and Zarowin, 2010; Ali and Zhang, 2015).  $\text{Size}_{i,t}$  is the natural

logarithm of the firm's book assets at the beginning of year  $t$ .  $Age_{i,t}$  is the natural logarithm of the number of years elapsed since the company's incorporation.  $Leverage_{i,t}$  is total debt divided by total assets at the beginning of year  $t$ .  $Fixed\ Assets_{i,t}$  is net property, plant, and equipment divided by total assets.  $Market\ to\ Book_{i,t}$  is the market value of equity divided by the book value of equity.  $Sales\ Growth_{i,t}$  is the annual percentage increase in the firm's sales at the beginning of year  $t$ .  $Std.Sales_{i,t}$  is the standard deviation of sales scaled by total assets over the last three years.  $CFO_{i,t}$  is the ratio of the firm's cash flow from operation to its book assets.  $Std.CFO_{i,t}$  is the cash flow volatility measured as the standard deviation of  $CFO$  over the last three years. Finally, we control for the fraction of the firm's stock owned by the five largest institutional investors (*Top5 institutional ownership*) as a measure of ownership concentration to ensure that our results are not driven by standard measures of institutional ownership structure (Kempf et al. 2017).

### 3.6. Descriptive statistics

Table 1 presents the descriptive statistics of the variables we use throughout our empirical analysis. We winsorize all continuous variables at the 1<sup>st</sup> and 99<sup>th</sup> percentiles. The mean value of the investor distraction measure is 0.14 in line with Kempf et al. (2017). The mean institutional ownership is about 60% in line with prior studies on institutional ownership (e.g., Koh 2007). The summary statistics for *Discretionary Accruals* and *Real Earnings Management* are consistent with those reported in prior studies (e.g., Roychowdhury, 2006; Cohen and Zarowin, 2010; Kim and Sohn, 2013; Ali and Zhang, 2015; Lo et al., 2017). Regarding the control variables, the descriptive statistics show that the average firm in our sample has total assets of approximately \$528.5 million, a leverage ratio of 21%, a proportion of fixed assets of 28%, a sales growth of 3%, and a market-to-book ratio of 2.88.

## 4. Results

### 4.1. Institutional investor distraction and earnings management

To examine the relationship between investor distraction and earnings management, we estimate Equation (10) using ordinary least square regressions. The standard errors of these regressions as well as those of all other regressions in the paper are clustered by firm and robust to heteroscedasticity. Table 2 reports our baseline results. In Columns 1 and 2, we examine whether investor distraction is associated

with accrual-based earnings management (*Discretionary Accruals*). The results show that the coefficient on *Investor Distraction* is positive and significant at the 1% level, suggesting that firms have greater abnormal accruals when institutional shareholders are distracted. In Columns 3 and 4, we examine whether investor distraction is associated with real earnings management. The results show that the coefficient on *Investor Distraction* is positive and significant at the 1% level, suggesting that firms engage in income-increasing real earnings management when institutional shareholders are distracted.

The effect of investor distraction on earnings management is also economically significant. The change in discretionary accruals associated with a one-standard deviation increase in investor distraction increases ROA by about 0.73 percentage points ( $0.04 \times 0.183$ ). The change in real earnings management associated with a one-standard deviation increase in investor distraction increases ROA by 3 percentage points ( $0.04 \times 0.76$ ). Thus, the total ROA overstatement associated with a one-standard deviation increase in investor distraction is of about 3.73 percentage points, which represents 22 percent of the ROA standard deviation for our sample firms (0.17). The economic effect of investor distraction compares favorably in magnitude to other determinants of earnings management recently uncovered in the literature.<sup>10</sup>

*Insert Table 2 about here*

The coefficients on the control variables have the expected sign. In line with prior studies, we find a negative association between institutional ownership and real earnings management (e.g., Bushee, 1998; Roychowdhury, 2006; Koh, 2007; Kothari et al., 2015). Our results therefore indicate that investor distraction is associated with earnings management even after accounting for differences in institutional ownership. This finding lends empirical support to the idea that the monitoring intensity exerted by

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<sup>10</sup> When we restrict our analysis of real earnings to abnormal discretionary expenses (as reported in Table 3), we document a total ROA overstatement associated with a one-standard deviation increase in investor distraction of about 2 percentage points. Ali and Zhang (2015) find that in the early years of CEO's service, discretionary accruals and abnormal discretionary expenses increase total ROA overstatement by about 1.5 percentage points. Cohen and Zarowin (2010) report that ROA overstatement by firms, through discretionary accruals and abnormal discretionary expenses, is about 2 percentage points in the seasoned equity offering year. The economic effect we document varies across the specification we use. Our most conservative estimate is a total ROA overstatement of about 1 percentage point when we restrict real earnings to abnormal operating cash flows and use Owens et al. (2016)'s discretionary accruals models.

institutional shareholders depends not only on their level of ownership but also on their level of distraction.

Overall, our main findings are consistent with the hypothesis that when institutional shareholders shift their attention away and become distracted, managers engage in upward earnings management. Importantly, the effect of institutional investor distraction on earnings management is arguably causal. By construction, the distraction measure we use captures times where a firm's institutional shareholders shift their attention away from the firm due to exogenous shocks in unrelated parts of their portfolios. Furthermore, while prior studies show that managers may have incentives to attract investor attention when they know that their firms will report good earnings (e.g., Koester et al., 2016; Boulland and Dessaint, 2017), this association is unlikely to create a severe endogeneity concern in our setting because it works against finding a positive relationship between investor distraction and earnings management.

The results from Table 2 are consistent with both investor distraction decreasing downward earnings management and increasing upward earnings management. Therefore, in Table 3, we split the sample into subsamples with positive and negative discretionary accruals. The results show that the positive association between investor distraction and discretionary accruals exists only for the subsample with positive (i.e., income-increasing) discretionary accruals. The results are consistent with the idea that the loosening in monitoring intensity should manifest itself in accentuating managers' intention to boost reported earnings.

*Insert Table 3 about here*

Next, we focus on the three individual real earnings management components that enter in the computation of the measure of real earnings management used in Table 2, namely, abnormal discretionary expenditures, abnormal production costs, and abnormal operating cash flow. Results reported in Columns (3), (4), and (5) of Table 3 indicate the association between investor distraction and real earnings management is homogenous across the three types of real activities manipulation documented by Roychowdhury (2006).

#### *4.2. Robustness checks*

In this section, we conduct numerous tests to check the robustness of our findings to alternative specifications and potential omitted variables. Table 4 presents the results. For the sake of brevity and clarity, we report only the coefficients for investor distraction throughout the table.

As described in Section 3.2., our primary measure of accrual-based earnings management is discretionary accruals based on the modified Jones (1991) model by Dechow et al. (1995). We now consider alternative ways of calculating discretionary accruals to ensure that our main findings are not driven by our choice of discretionary accruals model. We re-estimate Equation (10) using discretionary accruals, which are calculated following Dechow and Dichev (2002), McNichols (2002), Larcker and Richardson (2004), Kothari et al. (2005), Owens et al. (2016), and Chen et al. (2018), respectively. Panel A of Table 4 presents the results. The coefficient on investor distraction is positive and significant in all the regressions (it varies between 0.078 and 0.167 versus a baseline coefficient of 0.183). These results suggest that our findings are insensitive to the use of alternative discretionary accruals models.

Further, we assess the robustness of our results to alternative measures of real earnings management. Cohen and Zarowin (2010) derive two other measures of real earnings management focusing on specific combinations of the three components of our main measure of real earnings management (i.e., abnormal discretionary expenses, abnormal production costs, and abnormal operating cashflows). As reported in Panel B of Table 4, our results hold when we replace Real Earnings Management by REM 1 or REM 2. As discussed in the real earnings measurement section, while it is standard to replace missing values for R&D and advertising by zeros, this practice raises some concerns. When we remove from our sample firms with missing R&D or advertising values and re-compute our main measure of real earnings management, we find that the association between investor distraction and real earnings management remains positive and significant.<sup>11</sup>

Although our results show a positive association between investor distraction and earnings management, it is possible that both are simultaneously determined by other variables that are omitted from the regression. To alleviate this concern, we include in Panel C of Table 4 several additional control variables in our baseline regression (10). We use different sets of additional control variables. Motivated by

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<sup>11</sup> This restriction reduces the number of firm-year observations to 8,155.

Kothari et al. (2005), we first control for accounting performance by including a dummy variable indicating whether the firm has experienced a loss during the year (*Loss Dummy*), and contemporaneous return on assets (*ROA*).<sup>12</sup> Second, we control for stock return variables by including the cumulative monthly stock return over the fiscal year (*Momentum*) and stock return volatility, calculated as the standard deviation of monthly stock returns over the past three years (*Stock Return Volatility*). Third, we augment our baseline specification with auditor variables. Lennox, Wang and Wu (2018) find that audits help to detect and correct earnings overstatements. More specifically, we include a Big Four dummy variable (*Big Four Dummy*) and a dummy variable that equals one if the firm is audited by an industry-specialist auditor, where an industry-specialist auditor is the auditor with the largest market share in the firm's two digit SIC industry during the year (*Audit Industry Specialization Dummy*). Fourth, we control for board characteristics likely to affect earnings management (e.g., Klein, 2002; Peasnell et al., 2005; Fich and Shivdarsani, 2006; Adams and Ferreira, 2009; Srinidhi et al., 2011). We include board size (*Board Size*), independence (*Board Independence*), gender diversity (*Board Pct. Female*), age (*Board Avr. Age*), firm-specific experience (*Board Avr. Tenure*), and busyness (*Board Avr. Busyness*). Fifth, we control for CEO incentives and CEO entrenchment. We include the Incentive Ratio from Bergstresser and Philippon (2006) measuring the sensitivity of CEO compensation to the stock price. In addition, we also control for *CEO Duality*, a dummy variable for whether the CEO is also the chairman of the board and for CEO entrenchment, using the *Entrenchment Index* computed following Bebchuk, Cohen, and Ferrell (2008). Di Meo, Lara, and Surroca (2017) provide evidence suggesting that entrenched managers are less prone to engage in earnings management activities. Sixth, we include institutional investor controls. Prior literature shows that monitoring intensity varies across institutional investor types and depends on investor concentration (e.g., Bushee, 1998; Chung et al., 2002; Koh, 2007). We include as controls investor ownership concentration (*Institutional Holdings HHI*), institutional blockholder ownership (*Institutional Blockholder Ownership*), and Fich et al. (2015)'s measure of motivated monitors' ownership (*FHT Proportion of Monitoring Institutions*). Seventh, we include analyst variables such as analyst coverage and earnings forecasts dispersion (Yu, 2008; Degeorge et al., 2013). Finally, we control for M&A activities (*M&A Dummy*) and the issuance of shares (*Net Share Issuance*) because prior literature argues that in certain situations CEOs have greater incentives to manage earnings

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<sup>12</sup> Our results hold when we include one-year-lagged ROA instead of ROA and when we use a matching approach instead of adding performance repressors to our main specification.

and provide evidence that they do. More specifically, Erickson and Wang (1999) find that acquiring firms manage earnings upward prior to merger agreements and Chen, Thomas, and Zhang (2016) find evidence that performance - reflected in earnings and cash flows - is transferred from targets to acquirers around acquisitions. Cohen and Zarowin (2010) and Kothari et al. (2015) show that firms engage in earnings management around season equity offerings. All variable definitions are provided in the Appendix. As reported in Panel C of Table 4, our results are robust to the inclusion of each of these additional control variables.

To further mitigate omitted variable concerns, we consider a first-difference regression model. More precisely, we replace all variables in Equation (10) by their first differences. This analysis allows us to control away for unobservable and observable persistent differences across firms that could drive both earnings management and the distraction of a firm's institutional investors. Panel D of Table 4 reports the results of the first-difference regressions and shows that a within-firm change in investor distraction is associated with changes in both accrual-based earnings management and real earnings management. In Panel D, we further add industry-year fixed effects. The rationale for checking the robustness of our results to the inclusion of industry-year fixed effects is twofold. First, the abnormal earnings models we use are derived from industry-year regressions and there may be marked differences in the model accuracy across industry-year observations. Second, we want to ensure that our results cannot be explained by any variable that does not vary across firms within a given industry and year, such as industry-wide investment opportunities, the state of the business cycle, or industry-wide stock returns that we use to identify attention-grabbing stocks. Our results are robust to the introduction of industry-year fixed effects.

*Insert Table 4 about here*

Key to our identification strategy of distracted investors is the way the attention-grabbing industries are defined. Following Kempf et al. (2017) and motivated by Barber and Odean (2007), we use "extreme" industry returns (both positive and negative) to identify attention-grabbing events. To ensure that our results are driven by our ability to accurately capture institutional investor distraction rather than by randomness, we have conducted a placebo test in which, rather than focusing on the (true) distribution of industry returns, we randomly select the attention-grabbing industries. We then compute a measure of



investor distraction based on these random attention-grabbing shocks and estimate our baseline Equation (10) using the placebo investor distraction measure. We save the coefficient estimate on the placebo investor distraction measure. We repeat this procedure 2,500 times. The distribution of the standardized coefficients is presented in Figure 1.a for accrual-based earnings management and in Figure 1.b for real earnings management. In Figure 1.a, the actual standardized coefficient based on our baseline regression from Table 2, Column 2, lies well to the right of the distribution of standardized coefficient estimates based on placebo investor distraction measures. In Figure 1.b, we observe a similar pattern for real earnings management. Overall, these placebo tests alleviate the concern of a spurious association between investor distraction and earnings management.

*Insert Figure 1 about here*

Finally, an implicit assumption in the computation of the measure of investor distraction introduced by Kempf et al. (2017) is that extreme industry returns, be they positive or negative, attract investor attention to the same extent. As an additional robustness test, we examine whether our results are sensitive to the sign of the extreme returns. To do so, we create measures of investor distraction based on positive extreme returns only, labelled *Investor Distraction (Top)*, and on negative extreme returns only, labelled *Investor Distraction (Bottom)*. We then reproduce our baseline regressions using these two measures of investor distraction as independent variables of interest. The results are reported in Table 5 and show our main results hold for measures of investor distraction based on positive extreme returns only and negative extreme returns only.

*Insert Table 5 about here*

### *4.3. Additional analysis*

#### *4.3.1. Investor distraction and the choice between accrual-based and real earnings management*

Our baseline results from Section 4.1. indicate that institutional investor distraction is positively associated with both accrual-based earnings management and real earnings management. This evidence supports the hypothesis that managers are able to take advantage of the loosening in monitoring to inflate

earnings. In this section, we seek to further characterize the effect of investor distraction on earnings management by exploring how managers choose between accrual-based and real earnings management when institutional investors are distracted. Cohen et al. (2008) provide evidence suggesting that firms increase the use of real earnings management methods after the passage of the Sarbanes-Oxley Act (SOX). We therefore expect that investor distraction to have a stronger effect on real earnings management after the passage of SOX. In Table 6, we re-estimate our baseline regressions separately prior to and after the passage of SOX in 2002. The results from Columns 1 and 2 show that the effect of investor distraction on accrual-based earnings management is slightly more pronounced before SOX. The Wald test of coefficient equality shows that the coefficient prior to SOX is statistically higher only at the 20% level. However, the results from Columns 3 and 4 show that the effect of investor distraction on real earnings management is significantly more pronounced after SOX. The Wald test of coefficient equality shows that the coefficient for investor attention is statistically higher at the 3% level, indicating that the effect of investor distraction on real earnings management is more pronounced after the passage of SOX in 2002. Overall, the results from Table 6 provide some insights on how managers choose between accrual-based and real earnings management and are consistent with prior literature highlighting an increase in the use of real earnings management post SOX (e.g., Cohen et al., 2008).

*Insert Table 6 about here*

#### *4.3.2. The distraction of strong monitors*

A key feature of the measure of investor distraction introduced by Kempf et al. (2017) and that we use is that it gives more weight to investors that are strong monitors. Strong monitors are either i) investors that own a larger fraction of the firm's shares or ii) investors for which the firm has more weight in their portfolio. On top of blockholders or large shareholders, the measure takes into account that investors will on average spend more time and effort analyzing the biggest positions in their portfolio (Fich et al. 2015).

While the measure of investor distraction gives more weight to investors that are strong monitors, it does not take into account differences in monitoring intensity among strong monitors (i.e., large shareholders and investors for which the focal company represents an important fraction of the portfolio).

In this section, we explore whether the distraction of large shareholders matters more than the distraction of investors for which the company represents an important position. To do so, we construct two alternative measures of investor distraction. The first measure labelled *Investor Distraction (Stake)* considers that strong monitors are those with a large stake in the company. The second measure labelled *Investor Distraction (Relative Importance)* considers that strong monitors are those for which the company represents an important portion of their portfolio.

We then re-estimate our main regressions replacing our baseline measure of investor distraction with these two alternative measures. The results are reported in Table 7. We find that the coefficients for *Investor Distraction (Stake)* are positive and statistically significant at the 1% level, indicating that the distraction of large shareholders or blockholders leads to more accrual-based earnings management and real earnings management. These results indicate that the loosening in monitoring intensity is especially strong when large shareholders are distracted. We also find that the coefficients for *Investor Distraction (Relative Importance)* are positive and statistically significant at the 1% level. These results are consistent with the fact that investors monitor more the biggest positions in their portfolio and that their distraction results in more earnings management. Overall, these results indicate that the distraction of two types of strong monitors considered separately lead to more earnings management.

*Insert Table 7 about here*

#### 4.3.3. Other sources of monitoring

In this section, we explore whether the effect of institutional investor distraction exhibits cross-sectional heterogeneity depending on the strength of other monitoring mechanisms. When investors are distracted, the presence of other monitoring mechanisms may partially compensate the loosening in monitoring intensity brought about by investor distraction.<sup>13</sup> This should be particularly the case for real earnings management because it is under a relatively weaker regulatory focus than accruals management and thus requires greater monitoring (e.g., Graham et al., 2005; Cohen and Zarowin, 2010; Kothari et al.,

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<sup>13</sup> The monitoring exerted by institutional investors, board of directors, and analysts are likely to play a complementary role in holding managers accountable and ultimately enhance firm performance. However, in the particular context of our study, the question we ask is whether the temporary loosening of monitoring intensity brought about by investor distraction can be substituted (instantaneously and at no cost) by other monitors.

2015). We hence concentrate on this type of earnings management in our tests. We focus on two key complementary sources of monitoring, namely analysts and the independent directors.

First, analysts represent an external source of monitoring (Jensen and Meckling, 1976; Healy and Palepu, 2001). Using exogenous shocks to analyst coverage (broker closures and mergers), Chen et al., (2015) provide evidence indicating that financial analysts play an important governance role in monitoring managers.<sup>14</sup> Second, board independence is another important source of monitoring. In particular, independent directors have incentives to develop a reputation as skilled decision control experts in the corporate directorship market (Fama, 1980). Prior empirical evidence indicates that independent board members are better able to influence the design of CEO compensation and to influence corporate decisions (Core et al., 1999; Kaplan, 2012; Peasnell et al. 2005).<sup>15</sup>

In Table 8, we estimate our baseline regression for different subsamples of firms sorted by analyst monitoring and board monitoring. Specifically, we define firms with analyst coverage above (below) the median as firms with high (low) analyst monitoring. Similarly, we define firms with board independence above (below) the median as firms with high (low) board monitoring. The results from Columns 1 and 2 show that the effect of investor distraction on earnings management is more pronounced for firms with low analyst coverage. The Wald test of coefficient equality shows that the coefficient for *investor distraction* is statistically higher at the 7% level. The results from Columns 3 and 4 show that the effect of investor distraction on earnings management is more pronounced for firms with low board independence. The Wald test of coefficient equality shows that the coefficient for *investor distraction* is statistically higher at the 9% level. Overall, the results are consistent with the conjecture that, in the absence of other sources of monitoring, investor distraction offers managers increased leeway to engage in earnings management.<sup>16</sup>

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<sup>14</sup> Empirically, Yu (2008) finds that firms followed by more analysts manage their earnings less. Degeorge et al. (2013) find that in countries with high financial development, increased within-firm analyst coverage results in less earnings management.

<sup>15</sup> Board independence is not the only board characteristic that is likely to influence board monitoring. Prior evidence indicates that female directors exert stronger monitoring over managers (Adams and Ferreira, 2009), specifically in the context of earnings management (Srinidhi et al., 2011). Prior literature also shows that firms with busy boards are associated with weaker corporate governance (Fich and Shivdarsani, 2006). In unreported tests, we find similar results if we classify firms in low and high board monitoring according to board busyness, female representation, and the proportion of independent directors.

<sup>16</sup> Consistent with our prior that alternative sources of monitoring should mostly matter for real earnings management because it is under a relatively weaker regulatory focus than accruals management, we do not find significant differences in the association between institutional investor distraction and discretionary accruals when we split firms according to their level of analyst or board monitoring.

*Insert Table 8 about here*

#### *4.3.4. Institutional investor distraction, earnings management, and earnings benchmarks*

To improve the identification of firms that are likely to have managed earnings upwards purposely, we follow Lo et al. (2017) and consider both the process of earnings management and its outcome. Arguably, one of the main incentives for managers to manage earnings upwards is to meet or beat the earnings benchmark.<sup>17</sup> In Table 9, we explore whether among firms with positive discretionary accruals (real earnings management), the association between institutional investor distraction and earnings management is more pronounced for firms that meet or just beat the earnings benchmark. We focus on analyst forecasts as our measure of earnings benchmark. Prior research indicates that meeting analyst forecasts is a more important benchmark than meeting prior year's earnings or avoiding losses (Dechow, Richardson, and Tuna, 2003), and that the market perceives missing analyst forecast as a more negative signal than a decrease in year-over-year earnings (Brown and Caylor, 2005). We identify firms that meet or just beat the earnings benchmark as firms whose earnings per share surprise is within the [\$0, \$0.03] range (e.g., Brown, 2001; Dhaliwal, Gleason, and Mills, 2004; Bhojraj, Hribar, Picconi, and McInnis, 2009; Call, Chen, Miao, and Tong, 2014).<sup>18</sup>

*Insert Table 9 about here*

Table 9 reports the results of the subsample regressions. We find that the positive relationship between investor distraction and income-increasing discretionary accruals (income-increasing real earnings management) is limited to firms that have just met or beaten the earnings benchmark, which provides further evidence that investor distraction induces upward earnings management.

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<sup>17</sup> Burgstahler and Dichev (1997) provide evidence that firms manage reported earnings to avoid earnings decrease and losses. Degeorge, Patel, and Zeckhauser (1999) show how thresholds induce specific types of earnings management. Graham et al. (2005) reports that some CFOs admit managing earnings in order to meet earnings benchmarks. Bhojraj et al. (2009) confirm survey evidence suggesting managers engage in myopic behavior to beat benchmarks

<sup>18</sup> We compute the earnings per share surprise as the difference between the actual earnings per share and the last I/B/E/S consensus forecast. Our results are robust to the use of different cut-offs such as [\$0, \$0.01] and [\$0, \$0.05]. Our results remain qualitatively the same if we use the difference between the actual earnings per share and the average of all analysts' latest forecast made within [-180,-4 days] to define earnings surprises as done for instance in Caskey and Ozel (2017).

#### 4.3.5. Institutional investor distraction, earnings restatement, and stock performance

In previous sections, we have shown that institutional investor distraction has a strong effect on earnings management. In this section, we examine whether institutional investor distraction is associated with earnings restatement, which can be seen as a consequence of earnings management. To do so, we collect data on financial restatements for firms in the S&P1500 from Audit Analytics. Audit Analytics tracks financial restatement disclosures from 8-Ks, 10-Ks, 10-Qs, and other filings. Since the coverage of Audit Analytics starts in 2000, our analysis of financial restatements is based on the period 2000-2016. Table 10, Panel A reports regressions of *Restatement* on the institutional investor distraction variable and controls. We estimate this regression using a linear probability model including our usual control variables as well as firm and year fixed effects. Given that our results from Table 3 indicate that institutional investor distraction is mainly associated with income-increasing earnings management but not with income-decreasing earnings management, we estimate the regression separately for firms with positive and negative discretionary accruals. The results show that institutional investor distraction statistically increases the probability of earnings restatement in firms with positive discretionary accruals. The association is statistically significant at the 5% level. In contrast, we find that the association between institutional investor distraction and the probability of earnings restatement is not statistically significant for the subsample of firms with negative discretionary accruals.

Finally, we examine whether institutional investor distraction has an effect on long-run stock returns. Both accrual and real earnings management are likely to be detrimental to long-term value creation. While cutting R&D and advertising expenses to increase short-term earnings will be value-destroying in the long run (e.g., lower innovation and lower brand recognition), accrual-based earnings management, especially when leading to restatements, may also have negative consequences over the long run. Moreover, when shareholders are distracted, managers may take actions and engage in forms of earnings management that are not necessarily observable. Long-run stock returns aggregate the effect of these different actions. Table 10, Panel B reports regressions of stock returns in excess of the market return (value-weighted CRSP return) over the 24 months following the end of the fiscal year.<sup>19</sup> The results show that investor distraction has a negative and statistically significant effect on future stock returns.

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<sup>19</sup> We obtain qualitatively similar results if we calculate stock returns in the 36 months following the end of fiscal year.

Taken together our results for the effect of investor distraction on earnings management, financial restatements, and future stock performance indicate the consequences of a temporary loosening in monitoring intensity may have important implications for understanding long-term value creation in firms.

## **5. Conclusion**

We examine the effect of institutional investor distraction on earnings management behavior by identifying times when institutional investors experience attention-grabbing shocks in unrelated parts of their portfolios. We find that institutional investor distraction is positively associated with both accrual-based earnings management and real activities earnings-management, suggesting that managers exploit institutional investor distraction to engage in upward earnings management.

Prior studies document a negative association between the percentage of institutional ownership and earnings management. A key novelty of our paper is to show that the monitoring intensity of institutional investors on earnings management may temporarily decrease and weaken this association. While the superior degree of sophistication of institutional investors contribute to deter earnings management, the management of large portfolios also exposes them to attention constraints that prevent them from simultaneously monitoring earnings management in all their portfolio firms with the same intensity.

Our results have important implications for understanding the potential limitations in the corporate governance role played by institutional investors including those which are strong monitors (e.g., blockholders). Even when the presence of institutional investors is high, earnings management practices may be temporarily insufficiently monitored. This finding stresses the importance of complementary monitoring role played by financial analysts and independent directors in curbing earnings management and contributes to explain the persistence of earnings management practices.

Together with a growing body of studies investigating how firms respond to institutional investor distraction, our results also suggest that managers do not passively endure institutional monitoring but also adapt to the variation in institutional monitoring and time their opportunistic behaviors accordingly.

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## Appendix: Variable Definitions

Variables	Description	Source
<i>Baseline Variables</i>		
Discretionary Accruals	Signed discretionary accruals computed using an expanded version of the Jones (1991)'s model including the inverse of total assets, the change in revenues, and the level of gross property, plant and equipment as determinants of nondiscretionary accruals as in Dechow et al. (1995). A detailed description is provided in Section 3.	Compustat
Real Earnings Management	We follow Roychowdhury (2006) and combine (-) abnormal cash flow, (-) abnormal discretionary expenses, and (+) abnormal production costs. A detailed description is provided in Section 3.	Compustat
Investor Distraction	We compute the measure of investor distraction following Kempf, Manconi and Spalt (2017). We compute an investor-level distraction score, and then aggregate across all institutional investors in the firm, weighting investors' individual distraction by their incentives and means to monitor. A detailed description is provided in Section 3.	13F, CRSP
Institutional Ownership	Institutional investor ownership expressed as a percentage of a firm's total shares outstanding.	13F
Size	Natural logarithm of total assets.	Compustat
Age	Natural logarithm of the number of years elapsed since incorporation.	Compustat
Leverage	Long-term debt plus short-term debt divided by total assets.	Compustat
Fixed Assets	Gross property, plant, and equipment divided by total assets.	Compustat
Market-to-book	Market value of equity divided by book value of equity.	Compustat
Sales Growth	Sales growth, defined as the sales at year $t$ minus sales at year $t-1$ divided by sales at year $t-1$ .	Compustat
Std. Sales	Standard deviation of the sales scaled by lagged total assets over the last five years.	Compustat
Top 5 Ownership	Total ownership by the 5 largest institutional investors expressed as a percentage of a firm's total shares outstanding.	13F
CFO	Operating cash flow scaled by lagged total assets.	Compustat
Std. CFO	Standard deviation of the CFO over the last five years.	Compustat
<i>Additional Control Variables</i>		
Loss Dummy	Dummy indicating whether the firm reports a net loss for year $t$ (negative net income).	Compustat
ROA	Net income scaled by total assets.	Compustat
Momentum	cumulative stock returns over the previous fiscal year.	CRSP
Stock Return Volatility	Stock return volatility, defined as the standard deviation of monthly stock returns over the preceding three years.	CRSP
Big Four Dummy	Whether the firm has been audited by one of the big four auditing companies this fiscal year.	Compustat
Audit Industry Specialization Dummy	How specialized in the firm's industry the auditors are computed as the sales of the firms they audit for a given industry-year scaled by the total sales of this industry-year.	Compustat
Board Size	Natural logarithm of the number of board members.	ISS
Board Pct. Female	Percentage of female board members.	ISS
Board Pct. Ind	Percentage of independent board members.	ISS
Board Avr. Age	Average age of the board members.	ISS
Board Avr. Busyness	Average number of directorships of the board members.	ISS
Board Avr. Tenure	Average tenure of the board members.	ISS
CEO Duality	Whether the CEO is also the chairman of the board.	ISS
Incentive Ratio	Computed following Bergstresser and Philippon (2006) as the	Execucomp,

		share of a hypothetical CEO's total compensation that would come from a one percentage point increase in the value of the equity of his company. The 'delta' of the CEO's option portfolio follows the Core and Guay (2002) approach, they are taken from Lalitha Naveen's website (Coles et al. 2006).	CRSP
Entrenchment Index		We follow Bebchuk, Cohen, and Ferrell (2009). This proxy for managerial entrenchment is a count of the number of six antitakeover provisions that a firm has in place (thus a higher value of the entrenchment index means worse corporate governance): dual class, poison pill, classified board, amended bylaw, limited amend charter, and golden parachute.	ISS
Institutional Ownership	Blockholder	Institutional blockholder ownership expressed as a percentage of a firm's total shares outstanding. Whereby we define a blockholder as an institutional investor owning at least 5% of the shares of a given firm.	13F
Institutional Holdings	HHI	Concentration of institutional holdings. Computed as the Herfindahl-Hirschman Index of the holdings of institutional investors expressed as a percentage of a firm's total shares outstanding.	13F
FHT Proportion of Monitoring Institutions		Computed following Fich et al. (2015) as the institutional monitor ownership expressed as a percentage of a firm's total shares outstanding. Whereby institutional monitors are defined as institutional investors for which the weight of the firm in their portfolios is equal or greater to 10%.	13F
Analyst Coverage		Natural logarithm of the number of analysts covering the firm.	I/B/E/S
Std. Earnings Forecasts		Standard deviation of the one-year ahead earnings forecasts issued by the analyst covering the firm.	I/B/E/S
M&A Dummy		Dummy variable that indicates whether the firm has undertaken a M&A within the fiscal year.	SDC
Net Share Issuance		Dummy variable that code for whether the firm has issued at least 5% more shares net of share repurchases over the fiscal year.	Compustat
<i>Alternative measures of investor distraction</i>			
Investor Distraction (Top)		Alternative measure of investor distraction computed using extreme positive industry returns only as attention-grabbing shocks.	13F, CRSP
Investor Distraction (Bottom)		Alternative measure of investor distraction computed using extreme negative industry returns only as attention-grabbing shocks.	13F, CRSP
Investor Distraction (Stake)		Alternative measure of investor distraction computed assuming that strong monitors are investors with a large stake the company. This distraction measure is weighted only based on an investor's stake in the company.	
Investor Distraction (Relative Importance)		Alternative measure of investor distraction computed assuming that strong monitors are investors for which the company represents an important fraction of their portfolio. This distraction measure is weighted only based on the relative importance of the firm in the investor's portfolio.	13F, CRSP
<i>Other Variables</i>			
Benchmark Beating [\$0, \$0.03]		Dummy variable that indicates whether the earnings are equal or exceeds the last analyst consensus forecast by less than 3 cents.	I/B/E/S
Restatement		Dummy variable that is equal to 1 if the earnings of firm i for fiscal year t end up being restated and the restatement changes the reported net income and 0 otherwise	Audit Analytics
Cumulative Abnormal Returns		Cumulative stock return in excess of the market return (value-weighted CRSP return) over the 24 months following	CRSP

the end of the fiscal year.

**Table 1. Summary Statistics**

Variables	Obs.	Mean	S.D.	0.25	Mdn	0.75
<i>Baseline Variables</i>						
Discretionary Accruals	30,661	0.07	0.17	-0.02	0.05	0.14
Real Earnings Management	26,838	0.01	0.47	-0.23	0.02	0.25
Abnormal Discretionary Expenses	27,026	0.13	0.30	-0.02	0.11	0.29
Abnormal Production Costs	28,416	-0.03	0.23	-0.15	-0.02	0.09
Abnormal Operating Cash Flow	30,373	-0.08	0.17	-0.16	-0.07	0.01
Investor Distraction	30,661	0.14	0.04	0.11	0.14	0.16
Institutional Ownership	30,661	0.59	0.30	0.36	0.64	0.84
Top 5 Ownership	30,661	0.27	0.12	0.19	0.27	0.35
Size	30,661	6.27	1.89	4.93	6.23	7.55
Age	30,661	2.84	0.62	2.40	2.89	3.33
Leverage	30,661	0.21	0.20	0.02	0.18	0.32
Fixed Assets	30,661	0.28	0.24	0.10	0.21	0.39
Market-to-book	30,661	2.88	4.08	1.25	2.06	3.46
Sales Growth	30,661	0.03	0.34	-0.10	0.00	0.11
Std. Sales	30,661	0.10	0.24	0.01	0.03	0.08
CFO	30,661	0.08	0.15	0.04	0.10	0.15
Std. CFO	30,661	0.01	0.03	0.00	0.00	0.01
<i>Additional Control Variables</i>						
Loss Dummy	30,661	0.25	0.43	0.00	0.00	1.00
ROA	30,661	0.01	0.17	0.00	0.05	0.08
Momentum	30,661	0.04	0.46	-0.24	-0.03	0.21
Stock Return Volatility	29,639	0.13	0.07	0.08	0.11	0.16
Big Four Dummy	30,661	0.74	0.44	0.00	1.00	1.00
Audit Industry Specialization Dummy	30,661	0.24	0.42	0.00	0.00	0.00
Board Size	13,664	9.04	2.20	7.00	9.00	10.00
Board Pct. Female	13,664	0.11	0.10	0.00	0.11	0.17
Board Pct. Ind	13,664	0.79	0.10	0.73	0.80	0.88
Board Avr. Age	13,664	60.13	4.00	57.67	60.25	62.75
Board Avr. Busyness	13,664	1.71	0.63	1.25	1.58	2.00
Board Avr. Tenure	13,664	8.49	3.64	5.86	7.86	10.50
CEO Duality	13,664	0.48	0.50	0.00	0.00	1.00
Incentive Ratio	7,110	0.27	0.23	0.09	0.20	0.38
Entrenchment Index	5,844	2.39	1.27	1.00	2.00	3.00
Institutional Blockholder Ownership	30,661	0.23	0.13	0.12	0.21	0.32
Institutional Holdings HHI	30,661	0.12	0.14	0.04	0.06	0.13
FHT Proportion of Monitoring Institutions	30,661	0.02	0.04	0.00	0.00	0.00
Analyst Coverage	30,661	7.02	7.33	1.42	4.58	10.25
Std. Earnings Forecasts	24,385	0.16	0.21	0.04	0.09	0.19
M&A Dummy	30,661	0.34	0.47	0.00	0.00	1.00
Net Share Issuance	30,661	0.21	0.40	0.00	0.00	0.00
<i>Additional Investor Distraction Variables</i>						
Investor Distraction (Top)	30,661	0.07	0.04	0.05	0.07	0.09
Investor Distraction (Bottom)	30,661	0.07	0.03	0.05	0.07	0.09
Investor Distraction (Stake)	30,661	0.14	0.04	0.11	0.14	0.16
Investor Distraction (Relative Importance)	30,661	0.14	0.04	0.11	0.14	0.16

<i>Other Variables</i>						
Benchmark Beating [\$0, \$0.03]	25,163	0.38	0.48	0.00	0.00	1.00
Restatement	18,424	0.03	0.17	0.00	0.00	0.00
Cumulative Abnormal Returns	24,416	0.15	0.51	-0.19	0.11	0.45

This table presents the summary statistics of the variables for the sample period 1994-2016. We require each firm-year observation to have non-missing values in the baseline analysis and winsorize all continuous variables at both the 1<sup>st</sup> and 99<sup>th</sup> percentiles. Variable definitions are provided in the Appendix.



**Table 2. Institutional Investor Distraction and Earnings Management: Baseline Results**

	Discretionary Accruals		Real Earnings Management	
	(1)	(2)	(3)	(4)
Investor Distraction	0.260*** (0.037)	0.183*** (0.032)	0.781*** (0.131)	0.752*** (0.110)
Institutional Ownership		-0.012 (0.009)		-0.263*** (0.044)
Top 5 Ownership		-0.021 (0.018)		0.353*** (0.078)
Size		-0.004*** (0.001)		0.038*** (0.006)
Age		0.021*** (0.002)		0.059*** (0.012)
Leverage		-0.034*** (0.008)		0.130*** (0.036)
Fixed Assets		0.248*** (0.013)		0.301*** (0.039)
Market-to-Book		0.000 (0.000)		-0.018*** (0.002)
Sales Growth		0.008** (0.004)		-0.113*** (0.011)
Std. Sales		0.001 (0.007)		0.285*** (0.033)
CFO		-0.112*** (0.014)		-0.954*** (0.060)
Std. CFO		-0.492*** (0.063)		-3.223*** (0.279)
Observations	30,661	30,661	26,838	26,838
Year Fixed Effects	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes
Firm Cluster	Yes	Yes	Yes	Yes
Adjusted R-squared	0.165	0.244	0.0186	0.173

This table presents the results of our baseline regression analysis on the relation between earnings management and institutional investor distraction. We require each firm-year observation to have non-missing values in the baseline analysis and winsorize all variables at both the 1<sup>st</sup> and 99<sup>th</sup> percentiles. Standard errors are reported in parentheses. They are robust to heteroscedasticity and clustered by firm. Constant, industry fixed effects based on 2-digit SIC codes, and year fixed effects are included. \*\*\*, \*\*, and \* denote statistical significance at the 1%, 5%, and 10% levels, respectively. Variable definitions are provided in the Appendix.

**Table 3. Institutional Investor Distraction and Earnings Management: Different Aspects of Earnings Management**

	Positive Discretionary Accruals Subsample (1)	Negative Discretionary Accruals Subsample (2)	Abnormal Discretionary Expenditures (3)	Abnormal Production Costs (4)	Abnormal Operating Cash Flow (5)
Investor Distraction	-0.152*** (0.032)	0.037 (0.031)	0.373*** (0.067)	0.286*** (0.051)	0.110*** (0.025)
Institutional Ownership	-0.028*** (0.007)	-0.022** (0.010)	-0.114*** (0.025)	-0.123*** (0.020)	-0.033*** (0.008)
Top 5 Ownership	0.014 (0.014)	-0.031* (0.018)	0.150*** (0.047)	0.165*** (0.036)	0.039*** (0.015)
Size	-0.004*** (0.001)	-0.008*** (0.001)	0.026*** (0.003)	0.017*** (0.003)	-0.005*** (0.001)
Age	-0.010*** (0.002)	0.011*** (0.002)	0.032*** (0.007)	0.021*** (0.006)	0.010*** (0.002)
Leverage	0.028*** (0.006)	0.004 (0.008)	0.089*** (0.020)	0.030* (0.016)	0.006 (0.006)
Fixed Assets	-0.038*** (0.007)	0.243*** (0.014)	0.158*** (0.022)	0.130*** (0.019)	0.008 (0.008)
Market-to-Book	0.000 (0.000)	0.000 (0.000)	-0.010*** (0.001)	-0.007*** (0.001)	-0.000 (0.000)
Sales Growth	0.016*** (0.004)	0.022*** (0.004)	-0.072*** (0.008)	-0.023*** (0.005)	-0.019*** (0.003)
Std. Sales	0.024*** (0.005)	0.042*** (0.006)	0.121*** (0.020)	0.125*** (0.016)	0.047*** (0.007)
CFO	-0.008 (0.012)	-0.082*** (0.012)	0.313*** (0.040)	-0.467*** (0.025)	-0.819*** (0.012)
Std. CFO	0.362*** (0.056)	-0.092* (0.055)	-1.929*** (0.182)	-1.099*** (0.129)	-0.341*** (0.047)
Observations	21,230	9,431	26,838	26,838	26,838
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes
Firm Cluster	Yes	Yes	Yes	Yes	Yes
Adjusted R-squared	0.150	0.308	0.274	0.190	0.609

This table presents the results of a regression analysis on the relation between different aspects of earnings management and institutional investor distraction. We require each firm-year observation to have non-missing values in the baseline analysis and winsorize all variables at both the 1<sup>st</sup> and 99<sup>th</sup> percentiles. Standard errors are reported in parentheses. They are robust to heteroscedasticity and clustered by firm. Constant, industry fixed effects based on 2-digit SIC codes, and year fixed effects are included. \*\*\*, \*\*, and \* denote statistical significance at the 1%, 5%, and 10% levels, respectively. Variable definitions are provided in the Appendix.

**Table 4. Institutional Investor Distraction and Earnings Management: Robustness Checks**

	Discretionary Accruals (1)	Real Earnings Management (2)
<i>Panel A. Alternative Discretionary Accruals Measures</i>		
(1) Dechow and Dichev (2002)	0.083*** (0.028)	
(2) McNichols (2002)	0.153*** (0.030)	
(3) Larcker and Richardson (2004)	0.167*** (0.032)	
(4) Kothari et al. (2005)	0.101*** (0.031)	
(5) Owens et al. (2016)	0.079*** (0.019)	
(6) Chen et al. (2018)	0.127*** (0.022)	
<i>Panel B. Alternative Real Earnings Management Measures</i>		
(1) REM 1 as in Cohen and Zarowin (2010)		0.537*** (0.103)
(2) REM 2 as in Cohen and Zarowin (2010)		0.398*** (0.064)
(3) Without replacing missing values by zeros		0.450*** (0.170)
<i>Panel C. Additional Control Variables</i>		
(1) Performance	0.103*** (0.028)	0.663*** (0.107)
(2) Return variables	0.151*** (0.031)	0.668*** (0.108)
(3) Auditor variables	0.183*** (0.032)	0.748*** (0.110)
(4) Board variables	0.158*** (0.044)	1.030*** (0.135)
(5) CEO variables	0.358*** (0.108)	1.469*** (0.357)
(6) Institutional investor variables	0.232*** (0.039)	0.907*** (0.125)
(7) Analyst variables	0.151*** (0.037)	0.639*** (0.120)
(8) M&A	0.183*** (0.032)	0.754*** (0.110)
(9) Net Share Issuance	0.158*** (0.060)	0.573*** (0.178)
<i>Panel D. Alternative Fixed Effects</i>		
(1) First-difference analysis	0.080** (0.032)	0.097** (0.047)
(2) Industry x Year fixed effects	0.223*** (0.033)	0.943*** (0.118)
Control Variables of Table 2	Yes	Yes
Year and Industry Fixed Effects	Yes	Yes
Firm Cluster	Yes	Yes

This table presents the results of robustness tests on the relation between earnings management and institutional investor distraction. We require each firm-year observation to have non-missing values in the baseline analysis and winsorize all variables at both the 1<sup>st</sup> and 99<sup>th</sup> percentiles. Standard errors are reported in parentheses. They are robust to heteroscedasticity and clustered by firm. Constant, industry fixed effects based on 2-digit SIC codes, and

year fixed effects are included. \*\*\*, \*\*, and \* denote statistical significance at the 1%, 5%, and 10% levels, respectively. Variable definitions are provided in the Appendix. Control variables are those used in Table 2. Additional control variables used in Panel C are described in the main text.

**Table 5. Institutional Investor Distraction and Earnings Management: Positive Versus Negative Industry Returns**

	Accruals Management		Real Earnings Management	
	(1)	(2)	(3)	(4)
Investor Distraction (Top)	0.206*** (0.038)		0.699*** (0.115)	
Investor Distraction (Bottom)		0.126*** (0.040)		0.748*** (0.132)
Observations	30,661	30,661	26,838	26,838
Controls (Table 2)	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes
Firm Cluster	Yes	Yes	Yes	Yes
Adjusted R-squared	0.243	0.243	0.169	0.169

This table presents the results of a regression analysis on the relation between different earnings management variables and institutional investor distraction. We use two variations of our core measure of investor distraction. In Columns 1 and 3, we report the regression results for a measure of investor distraction based on the highest extreme industry returns only. In Columns 2 and 4, we report the regression results for a measure of investor distraction based on the lowest extreme industry returns only. We require each firm-year observation to have non-missing values in the baseline analysis and winsorize all variables at both the 1<sup>st</sup> and 99<sup>th</sup> percentiles. Standard errors are reported in parentheses. They are robust to heteroscedasticity and clustered by firm. Constant, industry fixed effects based on 2-digit SIC codes, and year fixed effects are included. \*\*\*, \*\*, and \* denote statistical significance at the 1%, 5%, and 10% levels, respectively. Variable definitions are provided in the Appendix.

**Table 6. Institutional Investor Distraction and Earnings Management before and after SOX**

Sample period:	Accruals Management		Real Earnings Management	
	(1) <=2002	(2) >2002	(3) <=2002	(4) >2002
Investor Distraction	0.237*** (0.049)	0.189*** (0.041)	0.613*** (0.193)	0.999*** (0.123)
Observations	9,737	20,924	8,199	18,639
Controls (Table 2)	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes
Firm Cluster	Yes	Yes	Yes	Yes
Wald test (1) > (2)		0.20		
Wald test (4) > (3)				0.03
Adjusted R-squared	0.223	0.279	0.223	0.161

This table presents the results of a regression analysis on the relation between different earnings management variables and institutional investor distraction. For accruals and real earnings management, this table reports the regression results for subsample of observations before and after the passage of the SOX, in 2002. We require each firm-year observation to have non-missing values in the baseline analysis and winsorize all variables at both the 1<sup>st</sup> and 99<sup>th</sup> percentiles. Standard errors are reported in parentheses. They are robust to heteroscedasticity and clustered by firm. Constant, industry fixed effects based on 2-digit SIC codes, and year fixed effects are included. \*\*\*, \*\*, and \* denote statistical significance at the 1%, 5%, and 10% levels, respectively. Variable definitions are provided in the Appendix.

**Table 7. Institutional Investor Distraction and Earnings Management: differentiating between strong monitors**

	Discretionary Accruals		Real Earnings Management	
	(1)	(2)	(3)	(4)
Investor Distraction (Stake)	0.199*** (0.033)		0.799*** (0.114)	
Investor Distraction (Relative Importance)		0.185*** (0.033)		0.751*** (0.113)
Observations	30,661	30,661	26,838	26,838
Controls (Table 2)	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes
Firm Cluster	Yes	Yes	Yes	Yes
Adjusted R-squared	0.244	0.243	0.170	0.170

This table presents the results of a regression analysis on the relation between different earnings management variables and institutional investor distraction. We use two variations of our core measure of investor distraction. In Columns 1 and 3, we report the regression results for a distraction measure weighting the individual distraction of each institutional investor by her stake in the firm only (and not weighting it by the relative importance of a firm in the investor's portfolio), namely *Investor Distraction (Stake)*. In Columns 2 and 4, we report the regression results for a distraction measure weighting the individual distraction of each institutional investor by the importance of the firm in its portfolio only (and not weighting it by the stakes investors have in the firm), namely *Investor Distraction (Relative Importance)*. We require each firm-year observation to have non-missing values in the baseline analysis and winsorize all variables at both the 1<sup>st</sup> and 99<sup>th</sup> percentiles. Standard errors are reported in parentheses. They are robust to heteroscedasticity and clustered by firm. Constant, industry fixed effects based on 2-digit SIC codes, and year fixed effects are included. \*\*\*, \*\*, and \* denote statistical significance at the 1%, 5%, and 10% levels, respectively. Variable definitions are provided in the Appendix.

**Table 8. Alternative Sources of Monitoring**

<i>Real Earnings Management</i>	Analyst Monitoring		Board Monitoring	
	(1) Below Median	(2) Above Median	(3) Below Median	(4) Above Median
Investor Distraction	0.754*** (0.183)	0.420*** (0.150)	1.226*** (0.214)	0.874*** (0.176)
Observations	13,490	13,348	6,484	5,679
Control Variables of Table 2	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes
Firm Cluster	Yes	Yes	Yes	Yes
Adjusted R-squared	0.094	0.220	0.136	0.145
P-value of Wald test: coefficient (1) greater than (2), or (3) greater than (4)	0.07		0.09	

This table presents the results of a regression analysis on the relation between earnings management and institutional investor distraction for subsamples of firms with high (low) monitoring from other sources. In Columns 1 and 2, we split our sample into firm-year observations with above-median versus below-median analyst coverage, respectively. In Columns 3 and 4, we split our sample into firm-year observations with above-median versus below-median percentage of independent board members, respectively. We require each firm-year observation to have non-missing values in the baseline analysis and winsorize all variables at both the 1<sup>st</sup> and 99<sup>th</sup> percentiles. Standard errors are reported in parentheses. They are robust to heteroscedasticity and clustered by firm. Constant, industry fixed effects based on 2-digit SIC codes, and year fixed effects are included. \*\*\*, \*\*, and \* denote statistical significance at the 1%, 5%, and 10% levels, respectively. Variable definitions are provided in the Appendix.



**Table 9. Managers' Incentives to Manage Earnings Upward**

Samples:	Discretionary Accruals > 0		Real Earnings Management > 0	
	<i>Benchmark Beating</i> [\$0, \$0.03] = 1 (1)	<i>Benchmark Beating</i> [\$0, \$0.03] = 0 (2)	<i>Benchmark Beating</i> [\$0, \$0.03] = 1 (3)	<i>Benchmark Beating</i> [\$0, \$0.03] = 0 (4)
Investor Distraction	0.080** (0.041)	0.019 (0.057)	0.494** (0.207)	0.147 (0.121)
Observations	6,685	10,706	3,795	7,299
Control Variables of Table 2	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes
Firm Cluster	Yes	Yes	Yes	Yes
Adjusted R-squared	0.335	0.318	0.178	0.189
P-value of Wald test of coefficient equality	0.09		0.04	

This table presents the results of a regression analysis on the relation between earnings management and institutional investor distraction conditional on a firm meeting or beating the earnings benchmark. In Columns 1 and 2 the dependent variable is *Discretionary Accruals*. In Columns 3 and 4, the dependent variable is *Real Earnings Management*. We focus on a subsample of firm-year observations for which we observe positive discretionary accruals or positive real earnings management. We require each firm-year observation to have non-missing values in the baseline analysis and winsorize all continuous variables at both the 1<sup>st</sup> and 99<sup>th</sup> percentiles. Standard errors are reported in parentheses. They are robust to heteroscedasticity and clustered by firm. Constant, industry fixed effects based on 2-digit SIC codes, and year fixed effects are included. \*\*\*, \*\*, and \* denote statistical significance at the 1%, 5%, and 10% levels, respectively. Variable definitions are provided in the Appendix.

**Table 10. Institutional Investor Distraction and Earnings Restatements***Panel A. Restatements*

Earnings Restatement	OLS	
	Discretionary Accruals >0 (1)	Discretionary Accruals <0 (2)
<i>Investor Distraction</i>	0.141** (0.057)	-0.025 (0.097)
#Observations	12,758	5,666
Control variables of Table 2	Yes	Yes
Year Fixed Effects	Yes	Yes
Firm Fixed Effects	Yes	Yes
Adjusted R-squared	0.0122	0.0237

This table presents the results of regressions of restatements on institutional investor distraction and control variables estimated separately for firms with positive and negative discretionary accruals. Regressions are estimated using a linear probability model. In both columns, the dependent variable is a dummy variable that is equal to 1 if the earnings of firm *i* for fiscal year *t* end up being restated and 0 otherwise. We require each firm-year observation to have non-missing values in the baseline analysis and winsorize all continuous variables at both the 1<sup>st</sup> and 99<sup>th</sup> percentiles. Standard errors are reported in parentheses. They are robust to heteroscedasticity and clustered by firm. Constant, firm fixed effects, and year fixed effects are included. \*\*\*, \*\*, and \* denote statistical significance at the 1%, 5%, and 10% levels, respectively. Variable definitions are provided in the Appendix.

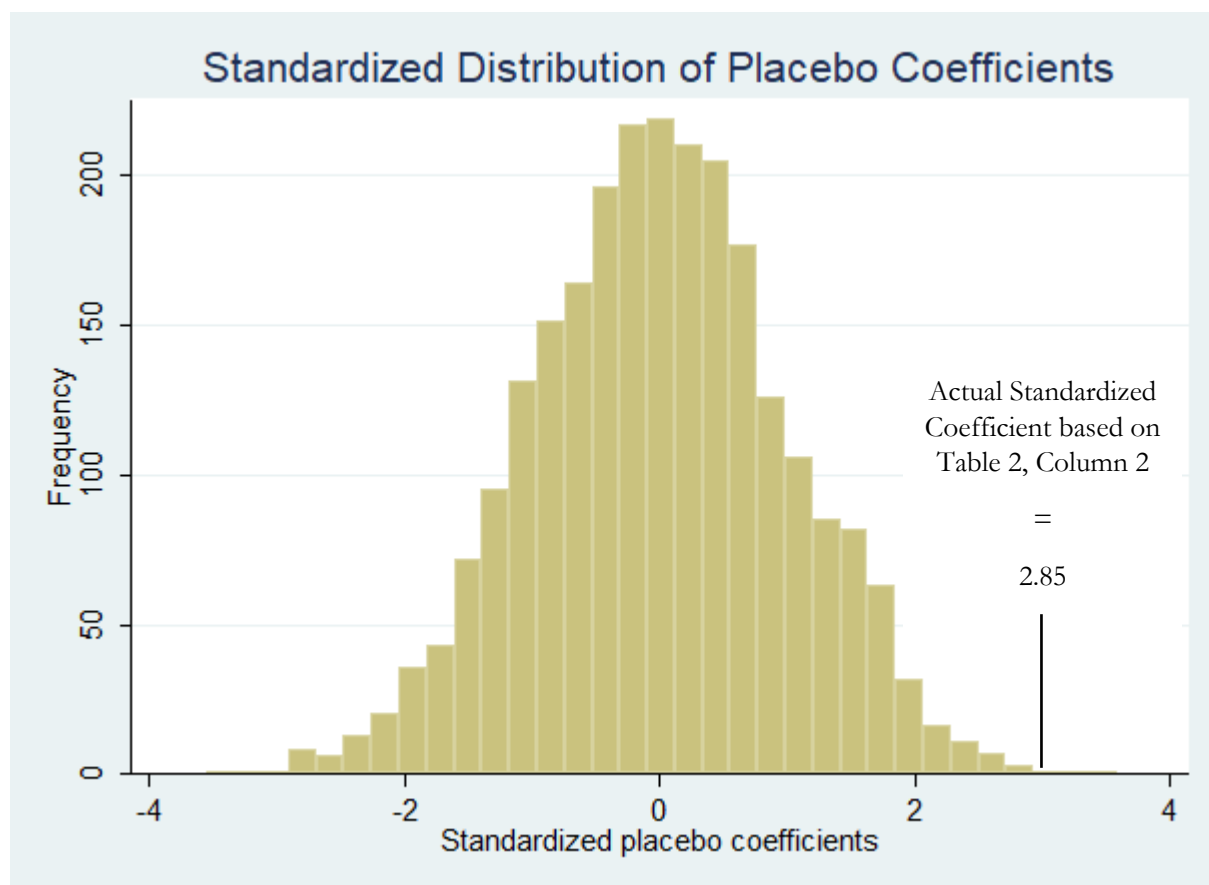
*Panel B. Long-term Value Implications*

	(1)	(2)
	Cumulative abnormal return t+1 to t+24 months	Cumulative abnormal return t+1 to t+24 months
Investor Distraction	-0.238** (0.120)	-0.319** (0.150)
Observations	24,416	24,416
Controls (Table 2)	Yes	Yes
Year Fixed Effects	Yes	Yes
Industry Fixed Effects	Yes	No
Firm Fixed Effects	No	Yes
Adjusted R-squared	0.173	0.311

This table presents the results of a regression analysis on the relation between long-term returns and institutional investor distraction. Our main dependent variable is cumulative abnormal returns which are cumulative returns in excess of the market return over the 24 months following the end of the fiscal year. We require each firm-year observation to have non-missing values in the baseline analysis and winsorize all continuous variables at both the 1<sup>st</sup> and 99<sup>th</sup> percentiles. Standard errors are reported in parentheses. They are robust to heteroscedasticity and clustered by firm. Constant, industry fixed effects based on 2-digit SIC codes, and year fixed effects are included. \*\*\*, \*\*, and \* denote statistical significance at the 1%, 5%, and 10% levels, respectively. Variable definitions are provided in the Appendix.

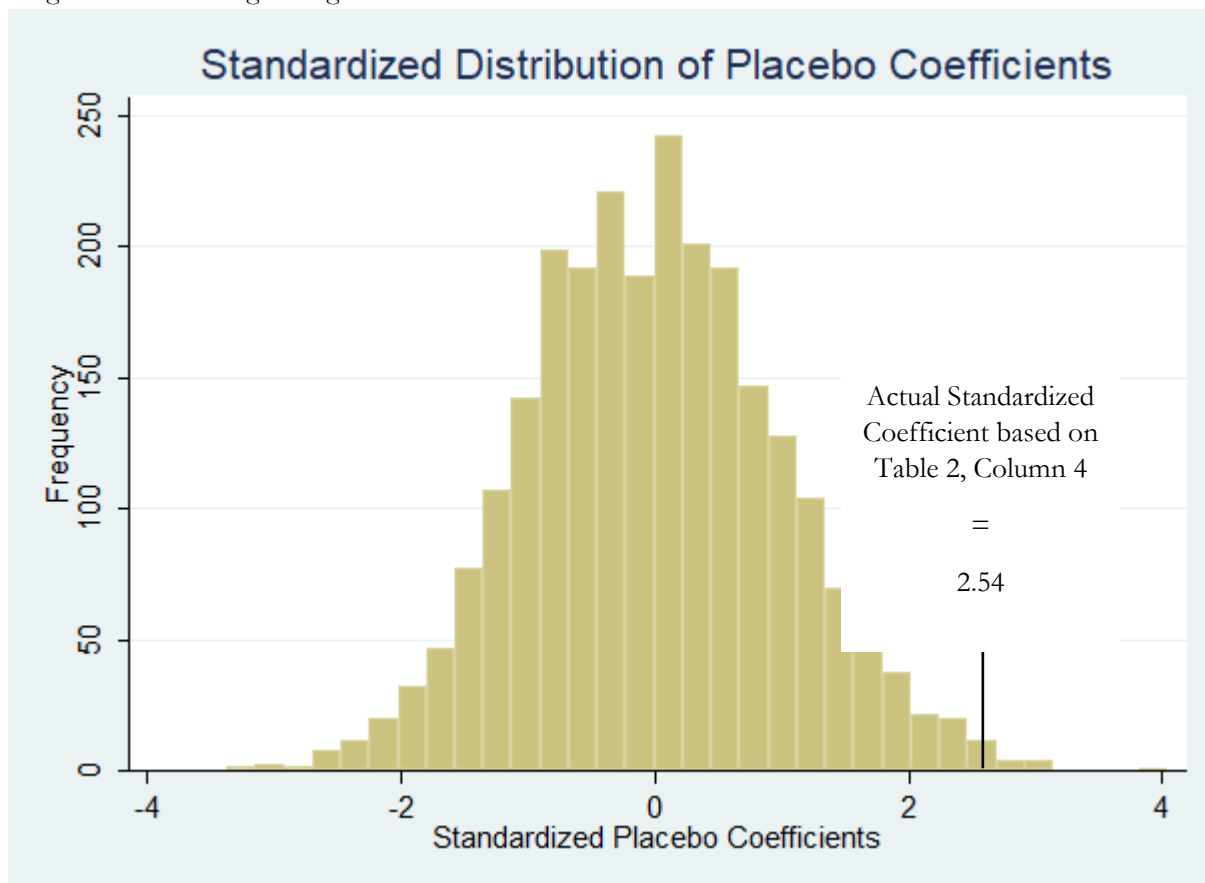
## Figure 1. Placebo tests

Figure 1.a: Accrual-based earnings management



This figure presents the distribution of the standardized placebo coefficients for the regression 2 of Table 2, whereby the placebo measures of investor distraction are obtained by using random industry shocks instead of extreme industry returns. We compute 2,500 placebo measures of investor distraction, run 2,500 times the regression 2 of Table 2, and store the resulting placebo coefficients for investor distraction. The placebo coefficients are standardized by removing the mean of the distribution and dividing them by the standard deviation of the distribution.

Figure 1.b Real earnings management



This figure presents the distribution of the standardized placebo coefficients for the regression 4 of Table 2, whereby the placebo measures of investor distraction are obtained by using random industry shocks instead of extreme industry returns. We compute 2,500 placebo measures of investor distraction, run 2,500 times the regression 4 of Table 2, and store the resulting placebo coefficients for investor distraction. The placebo coefficients are standardized by removing the mean of the distribution and dividing them by the standard deviation of the distribution.