Investor peers matter: Empirical evidence from corporate earnings management

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Abstract

Using a comprehensive set of US firms over the 1990-2019 period, we examine the relation between firms' earnings management decisions and corporate earnings management in their investor peer firms. A firm belongs to the investor peer group if it shares a common institutional investor base with the focal firm in a given year. We find that firms are strongly influenced by their common investor peers in their earnings management decision. This finding is robust to sample composition, alternative estimation methods, and endogeneity concerns. However, common investor peer firms matter only when the common institutional investors are not distracted. Managers learn from their closest peers more than from more distant ones. Consistent with a learning explanation, investor peers are more important if they are geographically closer to the focal firm, have the same industry affiliation, and are dominated by long-term investors. Competitive rivalry seems to be another mechanism through which investor peer firms influence the focal firm's behavior.

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1 Introduction

Traditional corporate finance research assumes that corporate decisions are made independently of the actions or characteristics of peers, such as natural competitors and comparable firms. However, recent empirical work documents that firms follow their industry peers when making capital structure (Leary and Roberts (2014)), investment (Foucault and Fresard (2014)), or earnings management (Kedia et al. (2015)) decisions. Survey evidence indicates that a significant number of managers cite the importance of peer firm decisions for their own financial decisions making (Graham and Harvey (2001), Graham et al. (2005)). In contrast to previous studies on peer effects, in this paper we allow firms to be linked through common institutional investors regardless of their industry affiliations. Our setup enables us to examine the impact of peer pressure beyond any industry-specific effects. Figure I provides a vivid example of how firms could be connected through common institutional investors.[1] It illustrates that our common investor peer approach captures a firm's connectivity to other firms much more comprehensively than merely relying on industry affiliation. In particular, in this example we capture four times more peer firms than we would be able to obtain in the case of industry peers.

[INSERT FIGURE I ABOUT HERE]

A growing sense among academics and practitioners is that common institutional investor networks are on the rise among US firms (Azar et al. (2018), Coates (2018), Boller and Morton (2020), Gilje et al. (2020), Backus et al. (2021), Hemphill and Kahan (2021)). The intuition behind this literature on common ownership is that when a group of investors owns shares in many interacting firms, those firms have fewer incentives to compete with each other, and the combined influence of investors may lead to more similar financial policy decisions across firms. On the one hand, the influence of these common investors

[1] Figure I illustrates the difference between investor overlaps within an industry and across industries. Specifically, we have a fictitious portfolio of an institutional investor with five portfolio firms (Figure I (a)). These five portfolio firms operate in three different industries (A, B, and C). The firms in the investor's portfolio are highlighted in blue. Figure I (b) shows the different types of connection between the firms within and across industries.

can be the result of joint activities by coordinating groups of investors connected through their network of institutional holdings (Enriques and Romano (2019), Crane et al. (2019)). On the other hand, a recent study by Antón et al. (2021) suggests that altering the compensation structure of firms, from a single-firm orientation to an investor portfolio orientation, can be another mechanism through which common ownership influences financial policy decisions.[2]

In spite of the growing research on peer effects and common ownership, there is a lack of empirical evidence on whether firms are influenced by their common institutional investor peer firms in their earnings management decision-making. We fill this research gap by using U.S. corporate financial data covering the period from 1988 through 2018. We build on the prior accounting literature on earnings management (Bartov et al. (2001), Hribar and Collins (2002), Kothari et al. (2005), Hazarika et al. (2012)) and construct our main earnings management proxy by applying the modified Jones model (Jones (1991)), as further modified by Dechow et al. (1995), and incorporating the contemporaneous return on assets to avoid potential misspecifications from ignoring firm's profitability (Kothari et al. (2005)). To capture a firm's investor peers, we follow Antón and Polk (2014) and create a firm pair level measure of overlapping ownership structures between two firms, so called institutional connectivity. We rank a firm's connected firms in descending order (from the highest institutional overlap to the lowest) and keep the firms with the highest ten percent overlap. By doing so, we ensure that our analysis concentrates only on peer firms that are plausibly in the focus of the focal firm's management. Robustness tests show that our main effect of interest becomes stronger with higher thresholds for institutional overlap.

Our results show that firms are to a large degree influenced by their common investor peers in their earnings management decisions. This finding is robust after controlling for firm-level determinants of earnings management, a large set of industry and firm effects, and other known peer characteristics as well as industry-fixed, firm-fixed effects, and time-fixed effects. We also include the general level of institutional ownership and the ownership

[2]This argument goes back to the theoretical contribution by Rotemberg (1984).

concentration as control variables to rule out the possibility that our model simply captures the influence of institutional ownership and its monitoring capacity on earnings management. In economic terms, a one-standard deviation increase in investor-peer's earnings management decision increases a focal firm's performance adjusted discretionary accruals by 1.8 percentage points ($= 1 \times 0.091 \times 0.201$). This implies that a one-standard deviation increase in investor-peers' earnings management has an incremental impact on focal firm's performance adjusted discretionary accruals by 11.3% relative to its unconditional mean ($0.018 / 0.162 = 11.29$, where 0.162 is the sample mean of Kothari et al.'s (2005) performance adjusted earnings management proxy).

To establish causality between a focal firm's earnings management decisions and investor peers' earnings management decisions is economical challenging because of the reflection problem described in Manski (1993). Given the endogenous choices of peers and/or common industry shocks (e.g., new accounting rules), a problem may arise because the correlation between a focal firm's earnings management and peer firms' earnings management is driven by correlated but unobserved firm characteristics. To overcome this reflection problem, we exploit a plausibly exogenous variation in the focal firm's incentive to focus on common investor peers' earnings management decisions. Specifically, we rely on Kempf et al.'s (2017) approach to measure common investor's distraction. By construction, and as discussed in more detail below, our distraction measure is based on attention-grabbing shocks in unrelated industries and thus not related to the fundamentals of the firm. We find strong evidence that common investor peer firms matter only when common investors are fully attentive.

To ensure that our results are not a mere statistical fluke but driven by our ability to correctly capture cases when firms deliberately manipulate earnings, we also conduct tests that focus on "suspect" firms, i.e., firm that are likely to manage their earnings (Graham et al. (2005), Roychowdhury (2006), Cohen et al. (2008)). As expected, we find that firms follow their investor peers more when they have incentives to meet or exceed certain earnings benchmarks.

Our approach allows us to exploit potential mechanisms through which investor peers influence the focal firm's decision-making. Specifically, we outline two mechanisms that may explain the observed peer effects: social learning and competitive rivalry. First, using heterogeneity within investor peer groups, we find that peers are more important if they are geographically closer to the focal firm, have the same industry affiliation, and are dominated by long-term investors. This finding is consistent with recent literature on comovements in corporate financial decisions that is driven by firms' proximity in various dimensions (Dougal et al. (2015), Fisman et al. (2017), Parsons et al. (2018), Dechow and Tan (2021)). It suggests that focal firm's managers learn from their closest peers more than from others.

Second, we find that competition is also a mechanism through which investor peer pressure influences focal firm's behavior. In particular, we provide evidence that peer pressure has a significant effect on firms that make large equity issues in the next period. The peer effect is most pronounced if a firm's peers also conduct large equity issues in the following period, suggesting that peer pressure is more salient for firms with a competitive situation in the market for external equity finance. The result is consistent with Beugnot et al. (2019), who demonstrate "gender-specific" responses of a firm's own activities to peer firm activities that are caused by competitive rivalry between males and females.

We conduct a battery of robustness tests to validate that common investor peers' earnings management decisions have a robust influence on shaping the focal firm's earnings management decision. First, we use alternative accrual-based earnings management proxies. Second, we extend our analysis to real earnings management. Third, we re-estimate our baseline model by including firm-fixed effects to rule out concerns that our inference is biased by omitted variables at the focal firm level. Fourth, we modify the peer group threshold from top ten percent to top three percent, top two percent, and top one percent. The results indicate that the higher the threshold, the stronger is the peer pressure on the focal firm's earnings management decision.

Our findings contribute to two strands of the literature. First, we extend existing literature analyzing peer influence on firm's decision-making process. In particular, the theoretical foundation of peer pressure for accounting manipulation comes from Gao and Zhang (2018). They provide evidence that managers copy peer firms' accounting policies because they are incentivized to do so. For example, peer pressure can arise out of managerial compensation concerns. A survey by Dichev et al. (2016) highlights this mechanism by reporting that CFOs face internal and external pressures to manipulate earnings in order to protect their own career and compensation benefits, fearing adverse consequences if earnings benchmarks are missed or earnings are too volatile.

Other empirical work by Leary and Roberts (2014), Foucault and Fresard (2014), Grennan (2019), Grieser et al. (2021) shows that industry peer firms play an important role in determining corporate capital structures and financial policy decisions. With respect to earnings management, Kedia et al. (2015), Bratten et al. (2016), Charles et al. (2018) find that firms respond strategically to the earnings management activities of their industry peer firms. Ramalingegowda et al. (2021) show that common institutional ownership within an industry mitigates earnings management by improving institutional investors' monitoring efficiency.

However, in contrast to these studies, our approach is novel in that we allow firms to be linked by an investor regardless of their industry affiliation. This enables us to examine the general impact of overlapping investor holdings beyond any industry-specific effects. Other studies document peer effects due to shared analysts, directors, or socially connected executives in firms' corporate policy decisions. Kaustia and Rantala (2015) and Gomes et al. (2017) provide evidence that firms connected through common analysts exhibit more excess comovement in corporate capital structure decisions. This suggests that firms rely on analysts' experience and expertise in assessing industry and peer-level information. Bouwman (2011) finds that firms with shared directors have similar corporate governance practices. Consistent with this, Fracassi (2017) shows that firms with socially connected executives exhibit high comovements in corporate policy decisions. Our novel approach of common investor-peers contributes to these findings by showing that common investor-peer firms play an important role in shaping corporate earnings management decisions. Managers are likely to observe what their investors tolerate in other firms and adopt their peers' earnings management decisions to mitigate risk of shareholder activism in their own firm.

Second, we extend the literature on firm behavior motivated by portfolio effects. Di Giuli et al. (2021) show that the dividend policies of firms that are newly added to an investor's portfolio move toward the dividend policies of existing firms in that portfolio. Similarly, He and Huang (2017), Azar et al. (2018), Antón et al. (2021) show that common ownership can affect firms' strategic choices because common owners have an incentive to internalize how each firm's actions will affect the value of other firms in their portfolio. These common incentives will most likely not result in the same outcome as maximizing the value of each single firm. For example, Antón et al. (2021) provide evidence that higher common institutional ownership in a given firm leads to less performance-sensitive incentives for the CEO. They conclude that executive compensation serves as a mechanism that connects common ownership to less competition. Building on this notion that common ownership can alter firms' behavior, we assume that a focal firm's managers manipulate earnings to a greater extent if they believe that reports of their common investor peer firms are also more likely to be manipulated.

The remainder of the paper is organized as follows. In Section 2, we explain the methodology and the data set used in the empirical study. Section 3 presents the main results, and Section 4 contains several robustness tests. Finally, Section 5 concludes.

2 Data description

2.1 Sample

Our initial sample is based on U.S. firms traded on the American Stock Exchange (AMEX), NASDAQ, and New York Stock Exchange (NYSE) and covered by Compustat from 1988 to 2018. We remove utilities (SIC 4900-4999) and financial firms (SIC 6000-6999), because these industries are subject to heavily regulatory restrictions that affects accounting rules and the accrual generation process (Fang et al. (2016)). Moreover, we only consider firm-years for which Compustat provides fully consolidated balance sheet data to eliminate the effect of intra-group financing activities. To minimize the influence of outliers, we remove firm-year observations with total assets less than $1 million dollars and winsorize all ratios at the 1% and 99% levels.

Institutional holdings come from Thomson Reuters Institutional Holdings (13F) database. This database contains equity ownership information on all institutional investment managers with at least $100 million in assets under management (AUM) by quarter. We exclude institutional holdings in invested entities of less than 0.5% to total equity, as it is unlikely that these institutions will have any reasonable influence over their holdings (Azar et al. (2018)). We complement the data with fiscal-year-end consensus analysts' earnings per share (EPS) forecasts and actual EPS from Institutional Brokers Estimate System (I/B/E/S). Our final sample for the baseline regression covers the period from 1990 to 2019 and includes 54,613 firm-level observations from 6,510 firms.

2.2 Variables and descriptive statistics

2.2.1 Measuring accrual-based earnings management proxies and income smoothing

Prior literature shows that managers engage in accruals management before seeking real activities management (Badertscher (2011)). Similarly, Kothari et al. (2016) illustrate that manipulating real activities entails altering normal operations to meet certain earnings targets, which is costlier for the firm. Managers will thus attempt to accomplish earnings management with accrual-based instruments before engaging in real earnings management activities. Against this backdrop, in our analysis we primarily focus on accrual-based earnings management to examine whether investor-peer pressure exist on focal firm's accrual-based earnings management decisions. In robustness tests, we also provide evidence on the positive relationship between investor-peer pressure and real earnings management activities.

In our empirical analysis, the main dependent variable is a performance adjusted accrual-based measure of firm's earnings management. A firm's accruals are the accounting correction for differences between earnings and cash flows. Therefore, measures of discretionary accruals aim to capture the portion of total accruals that cannot be explained by changes in a firm's economic environment. Building on prior work on earnings management (Bartov et al. (2001), Hribar and Collins (2002), Kothari et al. (2005), Hazarika et al. (2012)), we construct our earnings management proxy by using the modified Jones model (Jones (1991)), as further modified by Dechow et al. (1995), and incorporate the contemporaneous return on assets to avoid potential misspecifications from ignoring firm's profitability (Kothari et al. (2005)). This measure is a commonly applied proxy for firm's earnings management in the literature and is used in our baseline model.

We capture discretionary accruals by measuring non-discretionary accruals as a fraction of total accruals in the following way. First, we rely on cash flow statements to define total accruals (TA) for a firm i in year t as earnings before extraordinary items and discontinued operations minus operating cash flows, scaled by lagged total assets to mitigate heteroscedasticity in residuals. We focus on operating accruals because of their direct impact on earnings and relatively high subjectivity.[3] Second, we calculate a firm's discretionary accruals as the residuals from the following regression for each two-digit SIC industry-year pair with more than 15 observations:

$$TA_{it} = \alpha_1 \frac{1}{Asset_{it-1}} + \alpha_2 \frac{\Delta Sales_{it} - \Delta AR_{it}}{Asset_{it-1}} + \alpha_3 \frac{PPE_{it}}{Asset_{it-1}} + \alpha_4 \frac{NI_{it}}{Asset_{it-1}} + \epsilon_{it}, \tag{1}$$

where $\Delta Sales_{it}$ is the change in sales in year t-1; ΔAR_{it} is the change in accounts receivable in year t from the previous year (t-1); PPE_{it} is gross property, plant, and equipment in year t; NI_{it} is the net income in year t; and $Asset_{it-1}$ is lagged total assets; ϵ_{it} is an errors term used to capture the discretionary accruals.

In particular, we define our main measure of accrual-based earnings management, labelled AbsDa_KLW, as the absolute residuals from these industry-year regressions. Therefore, a higher value of AbsDa_KLW indicates a higher level of earnings management. While the normal residual is a signed value so that positive (negative) values represent income-increasing (value-decreasing) discretionary accruals, we focus on its absolute value

[3]See Larson et al. (2018) for a comprehensive overview of the manipulation of accruals and deferrals.

because earnings management can involve both income-increasing and income-decreasing accruals (Healy and Wahlen (1999), Klein (2002), Myers et al. (2003), Cohen et al. (2008), Gul et al. (2009), Hazarika et al. (2012)).

For robustness purpose, we also use alternative discretionary accruals models. First, we follow Owens et al. (2017), who assume that accrual building processes are not similar for all firms in an industry, and that regulatory policy changes in industries lead to idiosyncratic shocks that affect firms differently. We thus employ the same model as in Equation (1), but further incorporate a proxy for idiosyncratic shock as additional explanatory variable:

$$TA_{it} = \alpha_1 \frac{1}{Asset_{it-1}} + \alpha_2 \frac{\Delta Sales_{it} - \Delta AR_{it}}{Asset_{it-1}} + \alpha_3 \frac{PPE_{it}}{Asset_{it-1}} + \alpha_4 \frac{NI_{it}}{Asset_{it-1}} + \alpha_5 IS_{it} + \epsilon_{it}, \quad (2)$$

where IS_{it} is the mean squared error from regressing firm returns on industry and market returns with data from years t-1 to t at the monthly frequency; and ϵ_{it} is an errors term used to capture the discretionary accruals. We capture the measure of this accrual-based earnings management, denoted as AbsDa_OWZ, as the absolute residuals from these industry-year regressions. A higher value of AbsDa_OWZ indicates a higher level of earnings management.

Second, we follow McNichols (2002) and modify Equation (1) with another set of controls suggested by Dechow and Dichev (2002). Specifically, we regress total accruals on the lead, contemporaneous, and lag cash flow from operation scaled by lagged total assets in the following annual cross-sectional regressions:

$$\Delta WC_{it} = \alpha_0 + \alpha_1 CF_{it-1} + \alpha_2 CF_{it} + \alpha_3 CF_{it+1} + \alpha_4 \Delta Sales_{it} + \alpha_5 PPE_{it} + \epsilon_{it}, \quad (3)$$

where ΔWC_{it} is firm i's change in working capital in year t from year t-1, measured as the change in accounts receivable in year t from year t-1, plus the change in inventory in year t from year t-1, minus the change in accounts payable in year t from year t-1, minus the change in tax payable in year t from year t-1, plus the change in other net assets net of liabilities in year t from year t-1, all scaled by average assets; CF_{it-1} is the cash flow from operations in year t-1; and; ϵ_{it} it is an error term used to capture the discretionary accruals. As before, we focus only on the absolute values of this error term, indicating that a higher value of AbsDa_McN represents a higher level of earnings management.

Third, we apply the measure of income smoothing based on Tucker and Zarowin (2006). Their approach assumes that managers use discretionary accruals to maximize smoothness in reported earnings. More volatile earnings seem detrimental for capital markets as they convey higher risks and/or lower growth prospects (Graham et al. (2005)). We define the variable Income_TZ as the negative correlation coefficient between changes in discretionary accruals (measured over the current year) and changes in pre-discretionary income (measured over the past four years) for each firm. A higher negative correlation coefficient indicates a firm engages in more income smoothing.

2.2.2 Measuring real earnings management proxies

Acknowledging that earnings management is not limited to manipulating accruals, we follow prior literature (Dechow et al. (1998), Roychowdhury (2006), Cohen and Zarowin (2010), Kothari et al. (2016), Kim et al. (2017)) and measure real earnings management using abnormal production costs, abnormal discretionary expenses, and abnormal operating cash flow. Specifically, we use the model developed by Dechow et al. (1998) and adjusted by Roychowdhury (2006). First, we estimate abnormal production costs for each two-digit SIC code industry in each year and require each industry-year to have at least 15 observations in the following annual cross-sectional regressions:

$$\frac{PROD_{it}}{TA_{it-1}} = \alpha_0 + \alpha_1 \frac{1}{TA_{it-1}} + \alpha_2 \frac{SALES_{it}}{TA_{it-1}} + \alpha_3 \frac{\Delta SALES_{it}}{TA_{it-1}} + \alpha_3 \frac{\Delta SALES_{it-1}}{TA_{it-1}} + \epsilon_{it}, \quad (4)$$

where abnormal production costs ($ABPROD_{it}$) are captured in the residuals, and production costs ($PROD_{it}$) are cost of goods sold plus change in inventories. Overproduction refers to producing more goods than necessary to increase earnings. A higher value of $ABPROD_{it}$ indicates more real earnings management.

Second, using the same annual cross-sectional regressions setting as in Equation (4), we estimate abnormal discretionary expenses as follows:[4]

$$\frac{DISPEXP_{it}}{TA_{it-1}} = \alpha_0 + \alpha_1 \frac{1}{TA_{it-1}} + \alpha_2 \frac{SALES_{it}}{TA_{it-1}} + \epsilon_{it}, \tag{5}$$

where abnormal discretionary expenses ($ABEXP_{it}$) are captured in the residuals, and discretionary expenses ($DISPEXP_{it}$) are research and development expenses plus selling, general, and administrative expenses. The other variables are defined as in Equation (4). Managers have the discretion to cut R&D, advertising and selling, general and administrative expenses to increase reported earnings. A higher value of $ABEXP$ indicates less real earnings management. We multiply it by minus one so that higher values indicate more real earnings management activities.

Third, we estimate abnormal operating cash flows as follows:

$$\frac{CFO_{it}}{TA_{it-1}} = \alpha_0 + \alpha_1 \frac{1}{TA_{it-1}} + \alpha_2 \frac{SALES_{it}}{TA_{it-1}} + \alpha_3 \frac{\Delta SALES_{it}}{TA_{it-1}} + \epsilon_{it}, \tag{6}$$

where abnormal operating cash flows ($ABCASH_{it}$) are captured in the residuals, and CFO_{it} is the firm's operating cash flow. All other variables are defined as in Equation (4). $ABCASH$ captures sales manipulation reflecting managers' attempts to increase sales during the year by offering less price discounts or more lenient credit terms. A higher value of $ABCASH$ indicates less real earnings management. We multiply it by negative one so that a higher value indicate more real earnings management.

Finally, to capture the aggregate effects of real earnings management, we follow Roychowdhury (2006) and combine the three individual measures as follows:

$$REM\_R_{it} = ABPROD_{it} + ABCASH_{it} + ABEXP_{it} \tag{7}$$

[4]We follow Cohen and Zarowin (2010) and replace R&D, advertising and selling, general and administrative expenses with zero if they are missing and SG&A are available.

In addition, we follow Cohen and Zarowin (2010) and compute two alternative measures of real earnings management:

$$REM\_CZ1_{it} = ABPROD_{it} + ABEXP_{it}, \tag{8}$$

$$REM\_CZ2_{it} = ABEXP_{it} + ABCASH_{it}. \tag{9}$$

In robustness tests, we follow Kim et al. (2017) and use abnormal cash flows ($ABCASH_{it}$) from Equation (4) as an additional proxy of real earnings management activities based on abnormal cash flows from operations, labelled REM_KKZ_{it}.

2.2.3 Measuring institutional investor overlaps

We create a firm pair level measure of overlapping ownership structures between two firms, so called institutional connectivity. Following Antón and Polk (2014), institutional connectivity represents the extent to which an investor owns multiple shares within a pair of firms. Formally, we compute the following pair-level connectivity measure:

$$Connectivity_{ij,t} = \Sigma_{f=1}^{F}[\alpha_{i,f,t}(\frac{v_{i,t}}{v_{i,t}+v_{j,t}}) + \alpha_{j,f,t}(\frac{v_{j,t}}{v_{i,t}+v_{j,t}})], \tag{10}$$

where $\alpha_{i,f,t}$ is the fraction of firm i held by common investor f in quarter t, and $\alpha_{j,f,t}$ is the fraction of firm j held by same common investor f in the same quarter t. The firms' market value of equity (v) is computed as the product of total shares outstanding times the corresponding price in quarter t. We construct pair-level connectivity measures by aggregating the connectivity measures across all common institutional investors in each firm pair in our sample.[5] Next, we rank all of a firm's connected firms in descending order (i.e., from the highest to the lowest institutional overlap) and keep the firms with the highest ten percent overlap. By doing so, we ensure that our analysis concentrates only on peer firms that are plausibly in the focus of the focal firm's management. For robustness,

[5]To guarantee that we only include common institutional investors who have the ability to exercise their influence, we consider their shareholdings at the two quarter ends before and after the end of firm i's and j's fiscal year.

we change this threshold to the top three, two, one percent and re-estimate the baseline regression. Our results remain qualitatively the same, although the peer effect becomes more pronounced with higher thresholds.

2.2.4 Measuring common investor distraction

Next, to address concerns about endogeneity, we use exogenous variation in the ability of common investors to monitor their holdings. Investor distraction arises from attention-grabbing events, which allow us to identify the causal effect of institutional connectivity on the similarity of corporate earnings management. In particular, our analysis exploits industry shocks to unrelated firms of common investors' portfolios.

We build on prior work by Kempf et al. (2017), but apply their approach to our sample of common institutional investors.[6] Our distraction measure captures the relative importance of both pair firms in the common investors' portfolios, the relative importance of the shocked industries in their portfolios, and the relative importance of each common investor in both firms. Specifically, we calculate our distraction measure in three steps. First, we exploit exogenous shocks to unrelated industries held by the common investors of a particular firm-pair to identify periods of time when they are likely to be distracted and turn their attention away from the focus firm pair. An industry shock is defined as belonging to the highest or lowest decile of returns across all twelve Fama-French industries in a given quarter. Therefore, we capture the most extreme industry returns (both positive and negative) in a given quarter.[7]

Second, we modify the quarterly DISTRACTION measure for each common investor at the firm pair level into a mean DISTRACTION measure for each firm pair in a given quarter. We then average this over the fiscal year to obtain a unique rate of distraction for each firm pair. Higher distraction (a larger value of the DISTRACTION variable) indicates a higher level of attention diverted from common investors and a lower level of monitoring intensity at the focal firm. In other words, the distraction measure has a

[6] Formally, we calculate the common investor distraction for each firm pair by using equation (1) (distraction) and equation (2) (weighting factor) from (Kempf et al., 2017, pp. 1668–1669), but switching from the individual-firm perspective to the firm-pair level to capture the occasions when the common investors are distracted.

[7] Our results are robust to alternative industry specifications, such as three-digit SIC industries.

higher value if the exogenous shocks occur in unrelated industries, the shocked industries are important in the common investor's portfolio, and distracted common investors are important investors in the firm pair.

Third, to define time periods when the common investors of the focal firm and the corresponding peer firms are distracted, we divide firms into two groups along the tercile of the common investors distraction score. A firm's common investor base is classified as attentive if it belongs to the group whose distraction level is below the tercile, and distracted otherwise. This indicator variable enables us to distinguish between distracted and attentive common investors in the focal firm and its peers in a given year.

2.2.5 Measuring suspect firms

To ensure that our results are driven by our ability to accurately capture firms' earnings management activities, we analyze suspect firms, which are most prone to manage their earnings to meet analyst consensus forecasts. Survey evidence by Graham et al. (2005) shows that firms' managers are generally keen to meet or beat analyst consensus forecasts, because they fear retribution from the capital market, e.g., lower management credibility, declining share prices, and significant time spent after announcing earnings to explain why they missed the benchmark instead of presenting their vision of the firm's future. Previous studies further report that, because meeting or beating analyst forecasts is important for firms, they are likely to manipulate their earnings to achieve these targets (Degeorge et al. (1999), Brown (2001), Roychowdhury (2006), Cohen et al. (2008)).

Consistent with Cohen et al. (2008), we examine the accrual-based management activities of firms that most likely managed to meet or beat the latest analyst consensus forecast outstanding prior to the earnings announcement date. To do so, we obtain annual analyst forecasts from I/B/E/S and consider only forecasts made and/or revised after the beginning of the fiscal year. We define the forecast error as the difference between actual earnings per share (EPS) as reported by I/B/E/S less the consensus forecast of earnings per share. We focus on firm-year observations where the FE is one cent per share or less ($\$0.00 \leq$ EPS Consensus forecast $\leq \$0.01$) and define an indicator variable that takes the value of one for firms that have a forecast error of one cent per share or less (suspect firm), and zero (non-suspect firm) otherwise.

2.2.6 Control variables

Several studies explore factors that influence firms' earnings management decisions, and thus we include a set of firm-level control variables. Definitions and sources for all variables used in are summarized in Table A1. We include the natural logarithm of a firm's total assets in millions of U.S. dollars (FSIZE), its operating cycle (OPCY), cash flow volatility (CFVOL), sales volatility (SAVOL), and sales growth volatility (SGRVOL) (Dechow (1994), Dechow and Dichev (2002), Burgstahler et al. (2006), Hribar and Nichols (2007), Chaney et al. (2011)). We also follow Gopalan and Jayaraman (2011) and control for the average of days in accounts payable (DPAY), and whether the firm incurred a loss in the current fiscal year (LOSS). In addition, we include sales growth (SGR) to control for growth opportunities, the return on assets (ROA) to control for profitability, and long-term debt (LEV), because the default costs imposed by creditors provide incentives for earnings management (Francis and Yu (2009), Chaney et al. (2011), Attig et al. (2020, 2021), El Ghoul et al. (2021)). We include an indicator variable whether the firm has been audited by one of the big four auditors in a given fiscal year (BIG4) (Becker et al. (1998), Francis and Wang (2008)). Finally, our regressions models control for the level of institutional ownership (IO) (Chung et al. (2002), Ajinkya et al. (2005), Velury and Jenkins (2006), Koh (2007), Burns et al. (2010), Ayers et al. (2011), Ramalingegowda and Yu (2012), Kim et al. (2016)) as well as the concentration of institutional holdings in a given firm, computed as the Herfindahl-Hirschman Index (IHHI), (Ajinkya et al. (2005), Velury and Jenkins (2006), Burns et al. (2010), Ayers et al. (2011), Ramalingegowda and Yu (2012), Ramalingegowda et al. (2020)).

2.2.7 Descriptive statistics

Table I presents descriptive statistics for the regression variables. Focal firm characteristics are reported in Panels A and B. Panel A reports the dependent variables, while Panel B contains the control variables. Panel C shows investor-peer averages of the dependent variables. Following Leary and Roberts (2014), we calculate the investor-peer variables for the dependent variables and all control variables by taking the average across all of focal firm's investor peers except the focal firm itself.

[INSERT TABLE I ABOUT HERE]

The mean discretionary accruals from the Kothari et al. (2005) model, AbsDa_KLW, accounts to 16.2% of total assets. Discretionary accruals based on Owens et al. (2017), AbsDa_OW Z, are 7.1%, while the discretionary accruals calculated following McNichols (2002), AbsDa_M cN, lie in between the other two models with 10.7%. These numbers are similar to prior studies of earnings management (Cohen et al. (2008), Attig et al. (2021), Choudhary et al. (2021)).

Moving on to the fundamentals, the average firm in our sample is relatively large according to its assets (FSIZE = 5.8; $2.3 bill. before logarithmic transformation) and profitable (ROA = 8.4%), with moderate long-term debt to its assets (LEV = 17.5%) and considerable sales growth (SGR = 12.5%). For the remaining controls, we only note that their summary statistics are comparable to those reported in related studies (Guedhami et al. (2013), Attig et al. (2020), El Ghoul et al. (2021), Attig et al. (2021)).

3 Empirical results

We start by estimating the impact of investor peers' earnings management decisions on the focal firm's earnings management decision. In addition, we provide evidence suggesting that this relationship is causal. Next, we document that investor peers that are geographically closer to the focal firm, have the same industry affiliation, and are dominated by long-term investors are more important. This suggests that managers learn from their closest peers more than from more distant ones. Finally, we find that competitive rivalry could be an alternative mechanism through which investor peer firms influence the focal firm's behavior.

3.1 Investor peer pressure and earnings management

3.1.1 Main results

To test the relation between firms' earnings management decisions and corporate earnings management in their investor peer firms, we run regressions with our main measure of accrual-based earnings management, AbsDa_KLW (see Section 2.2.1). Because earnings management can involve both income-increasing and -decreasing accruals (Healy and Wahlen (1999)), we use the absolute value of discretionary accruals, where higher values indicate higher levels of earnings management. Moreover, the investor-peer-averages for each dependent variable and all control variables are taken across all of the connected firms except the focal firm itself. A firm belongs to the investor peer group if it belongs to the top decile (highest common investor overlap) of firms that share a common investor base with the focal firm in a given year.

Formally, we estimate the following model by regressing firm's earnings management decision (EM) on the corresponding peer proxy (PEER_EM):

$$\begin{aligned} EM_{it} =& \alpha_0 + \alpha_1 PEER\_EM_{pt} + \alpha_3 FControls_{it} \\ &+ \alpha_4 IControls_{it} + \alpha_5 FControls_{pt} + \phi_t + \delta_{ind} + \epsilon_{it}, \end{aligned} \tag{11}$$

where EM_{it} is the focal firm's measure of earnings management for firm i at year t; $PEER\_EM_{pt}$ is corresponding earnings management at the peer-level; $FControls_{it}$ contains a set of earnings management control variables at the focal firm level (FSIZE, OPCY, CFV OL, SAV OL, SGV OL, LEV, SGR, DPAY, LOSS, ROA, BIG4); $IControls_{it}$ are controls for the focal firm's ownership structure (IO, IHHI); and $FControls_{pt}$ contains a set of earnings management control variables at the peer firm level (FSIZE, OPCY, CFV OL, SAV OL, SGV OL, LEV, SGR, DPAY, LOSS, ROA, BIG4). By adding year (ϕ_t) and industry (δ_{ind}) fixed effects to all our regressions (except column 1), we isolate the influence of aggregate time series trends and control for all time-invariant industry characteristics. We account for serial correlation by allowing clustering of the error term at the focal firm level.

[INSERT TABLE II ABOUT HERE]

The results are shown in Table II. Columns (1) to (4) reveal that firms are strongly influenced by their common investor peers in their earnings management decision. As one moves from column (1) to (4), including more and more control variables, the estimation coefficient decreases somewhat, but remains statistically significant (p 0.01). This even holds for column (4), which includes all of our control sets and thus serves as our benchmark specification. The positive sign on PEER_EM indicates that a higher level of earnings management at the common investor peers is associated with a higher level of earnings management also at the focal firm. In economic terms, consider that the mean of Kothari et al.'s (2005) earnings management proxy is 16.2% at the focal firm level. Then, a one-standard deviation increase in investor-peers' earnings management decision increases focal firm's performance adjusted discretionary accruals by 1.8 percentage points ($= 1 \times 0.091 \times 0.201$). Accordingly, a one-standard deviation increase in investor-peers' earnings management has an incremental impact on focal firm's performance adjusted discretionary accruals by about 11.3% relative to its unconditional mean ($0.018 / 0.162 = 11.29$, where 0.162 is the sample mean of Kothari et al.'s (2005) performance adjusted earnings management proxy).[8]

In Column (5) we re-estimate the baseline specification (column 4) with standardized coefficients to evaluate the importance of the peers' earnings management decision relative to other variables. A one-standard deviation increase in peers' earnings management is associated with, on average, an increase in the focal firm's discretionary accruals by 0.065 standard deviations. Comparing investor peer pressure with the other model variables, the impact of PEER_EM on earnings management is large and second only to the average of days in accounts payable (DPAY).

[8]Untabulated correlation analysis shows that all correlations between the different explanatory variables are low (economically and statistically), indicating that every explanatory variable incorporates its own set of information, reducing concerns that multicollinearity could be driving our regression results.

Finally, the last two columns of Table II decompose the focal firm's earnings management and examines absolute values of income increasing and income-decreasing earnings management decisions. We use the signed (absolute) values of discretionary accruals to divide the sample into income-increasing (DA $>$ 0) and income-decreasing performance-adjusted earnings management decisions (DA $<$ 0). When we re-estimate our baseline specification, in both columns (6) and (7), earnings management in the focal firm is positively related to earnings management in common investor-peers, albeit the effect from income-decreasing earnings management seems statistically stronger than that from income-increasing discretionary accruals ($p \leq 0.01$ vs. $p \leq 0.05$). Nevertheless, both effects are economically relevant. A one-standard deviation increase in peers' earnings management (column (6)) increases the focal firms' income-decreasing earnings management by 1.4 percentage points ($= 1 \times 0.09 \times 0.15$). Similarly, a one-standard deviation increase in peers' earnings management (column (7)) increases focal firms' income-increasing earnings management by 1.7 percentage points ($= 1 \times 0.093 \times 0.17$). In economic terms, the coefficient of income-decreasing earnings management (column (6)) implies that a one-standard deviation increase in the peers' earnings management increases the focal firm's income-decreasing earnings management by 7.97 percent relative to the sample mean ($= 0.014 / 0.1756$, where 0.1756 is the sample mean of the focal firm's earnings management). In column (7), however, a one-standard deviation increase in the peers' earnings management increases the focal firm's income-increasing earnings management by 12.45 percent relative to the sample mean ($= 0.017 / 0.1366$).

3.1.2 Distracted investor peer connections

To examine whether the association between firms' earnings management decisions and corporate earnings management in their investor peer firms is causal, we need an exogenous shock on common investors' monitoring ability and confirm that managers have incentives to internalize their common investors' preferences only if they are able to effectively monitor them. Prior research on investor distraction shows that investor distraction reduces monitoring and weakens the incentives of mangers to take actions that benefit their shareholders (Kempf et al. (2017), Abramova et al. (2020), Liu et al.

(2020), Gilje et al. (2020), Garel et al. (2021)). We rely on a modified version of Kempf et al.'s (2017) investor distraction measure to show that the link between peers' earnings management and focal firm's earnings management is causal. In particular, we re-estimate our baseline regression for two separate subgroups: one with only attentive common investors, and another one with only distracted common investors (see Section 2.2.4 for details). The results are shown in Table III.

[INSERT TABLE III ABOUT HERE]

Again, columns (1) and (2) in Table III reveal that the level of earnings management at the focal firm is positively related to the level of earnings management at their investor peer firms. However, the estimated coefficient on PEER_EM is only statistically significant (with p 0.01) for firms with attentive common investors. Columns (3) and (4) reinforce our finding by adding firm fixed effects to the regressions instead industry fixed effects. Moreover, the PEER_EM estimate is significantly higher for focal firms with attentive common investors (column (1) and column (3)) than for firms with distracted common investors (column (2) and column (4)), as indicated by the Chow test p-value at the bottom of the table. Overall, this supports our prediction that the positive effect of earnings management at the investor peers' level on the focal firm's earnings management matters only when the common investors are not distracted.

In economic terms, having only attentive common investors, a one standard deviation increase in the level of investor peers' earnings management leads to a positive effect on focal firms' performance adjusted discretionary accruals of 6.3 percentage points ($= 1 \times 0.085 \times 0.747$) in column (1). Similarly, in column (3), we observe a positive peer effect of 5.4 percentage points ($= 1 \times 0.086 \times 0.632$). This implies that a one-standard deviation increase in the level of peers' earnings management increases focal firms' earnings management by roughly 44% and 38%, respectively, relative to the sample mean of focal firms' earnings management (14.3%).

3.1.3 Suspect firms

To confirm that our tests effectively capture accrual-based earnings manipulation activities, we now focus on suspect firms, which are likely to manage their earnings. We expect that investor peer pressure plays a stronger role for the level of earnings management in suspect firms. Therefore, we re-estimate our baseline model for different subgroups: one with non-suspect focal firms, and another one with suspect focal firms (see Section 2.2.5 for details).

[INSERT TABLE IV ABOUT HERE]

The results are shown in Table IV. Column (1) reports the estimates for non-suspect firms, and column (3) those for the suspect firms. The corresponding standardized coefficients are shown in column (2) and column (4), respectively. Again, the level of earnings management at the level of investor peers is positively associated with focal firms' earnings management decisions. Comparing columns (1) and (3), the peer effect (PEER_EM) is statistically significant in both columns (with $p \leq 0.01$). However, the coefficients are significantly different from each other, as indicated by the Chow test at the bottom of the table (with $p \leq 0.01$). An increase of one-standard deviation in peer firms' abnormal accruals increases those at suspect focal firms by 6.6 percentage points (=1 x 0.095 x 0.695) in column (3), but at non suspect firms by only 1.6 percentage points (= 1 x 0.091 x 0.176) in column (1). Indicating that a one-standard deviation increase in the level of peers' earnings management increases the (non) suspect focal firms' earnings management by approximately 41% (9.9%) relative to the sample mean of focal firms' earnings management (16.2%). Finally, comparing the standardized coefficients in columns (2) and (4), we find that the level of earnings management at investor peers is more than four times higher in suspect focal firms than in non-suspect ones (0.226 vs. 0.057).

Taken together, these findings suggest that firms are indeed more likely to engage in earnings management and follow their investor peers if they have incentives to meet or exceed certain earnings targets.

3.2 When does investor-peer pressure matter?

It may be possible that focal firms follow their peers' earnings management decisions because they are unsure about common investors' acceptable level of earnings manipulation (Banerjee (1992), Bikhchandani et al. (1992)). To exploit this potential mechanism, we hypothesize that some peers possess superior information for the focal firm. We have, so far, treated all firms in an investor peer group as equally important. However, it is conceivable that some members of a peer group are more important than others in shaping earnings management decisions at focal firms. For example, more profitable firms, geographically close firms, firms that are more similar in their accounting framework, and firms with more long-term institutional ownership might be a more relevant or salient benchmark. Table V shows tests of this social learning hypothesis, i.e., whether firms prefer to follow their more salient peers in their earnings management decisions.

In each fiscal year, we split a focal firm's investor peer group into subgroups along the peer group's median Tobin's Q (column 1), median geographic distance to the focal firm's headquarter (column 2), same four-digit SIC industry affiliation (column 3), and long-term or short-term dominated peer firms (column 4). Following Eckel et al. (2011), we compute the geographical distance between focal firms' headquarter locations based on their five-digit zip codes. To measure investors' investment horizons, we follow Gaspar et al. (2005) and divide institutional investors into terciles based on their churn ratios for each fiscal year, and classify investors in the top (bottom) tercile as short-term (long-term). A focal firm is dominated by long-term investors when the percentage of long-term institutional ownership is higher than the percentage of short-term institutional ownership in a given year. When we re-estimate our baseline model adding these peer firm classifications, it is assumed assume that closer peers are more relevant for a focal firm's earnings management activities.

[INSERT TABLE V ABOUT HERE]

Column (1) of Table V shows that the distinction between more and less valuable peers is not important. A Wald test at the bottom of the table confirms this result; the difference between the impact of high Q firms (EM_PEER_HIGH) and low Q firms (EM_PEER_LOW) on focal firms' earnings management is not statistically different from zero (p-value = 0.455).

In contrast, column (2) shows that geographically closer peers are more important for the focal firm than peers that are more far away. The difference between both subgroups, as indicated by the coefficients on EM_PEER_CLOSE and EM_PEER_AWAY, is both statistically (with $p \leq 0.05$) and economically significant. In particular, a one-standard deviation increase in closer investor-peers' earnings management increases the focal firm's discretionary accruals by 2.1 ($= 1\times$ 0.098 $\times$ 0.212) percentage points, on average; the corresponding number for further away peer firms is only 0.7 percentage points. This implies that a one-standard deviation increase in the level of geographically closer peers' earnings management increases focal firms' earnings management by roughly 13% (= 0.021 / 0.162) relative to the sample mean of focal firms' earnings management (16.2%), and by only 4% (= 0.007 / 0.162) in the case of geographically more distant peers.

Next, column (3) indicates that both same-industry as well as other-industry peers have an impact on the earnings management decisions in focal firms. However, as expected, the impact of same-industry peers is stronger, and the difference between the estimates on EM_PEER_SAME and EM_PEER_ACROSS is statistically significant (with $p \leq 0.01$). Specifically, a one-standard deviation increase in same-industry peers' earnings management increases the focal firm's discretionary accruals by 4.1 percentage points (=1 x 0.114 x 0.360) and 0.9 percentage points (1 x 0.108 x 0.081), respectively. This indicates that a one-standard deviation increase in the level of same-industry peers' earnings management increases focal firms' earnings management by roughly 25% (= 0.041 / 0.162) relative to the sample mean of focal firms' earnings management (16.2%), and by 5.6% (= 0.009 / 0.162) in the case of investor peers operating in different industries.

Finally, the results in column (4) suggest that long-term investor dominated peer firms are more influential for the focal firm's earnings management decisions than short-term dominated peers. In this case, the coefficient of interest for the subgroup of long-term dominated peer firms, EM_PEER_LONG, is statistically significant (with $p \leq 0.01$), while that on EM_PEER_SHORT remains insignificant. This result is consistent with previous studies showing that institutional investors with longer investment horizons have stronger incentives to engage with the focal management of their portfolio firms because they hold the equities long enough to realize the benefits of intervention and recoup monitoring costs (Gaspar et al. (2005), Chen et al. (2007), Koh (2007), Attig et al. (2013), McCahery et al. (2016), Harford et al. (2018)).

Overall, our results confirm that peer characteristics are important. Peer firms that are geographically closer to the focal firm, have the same industry affiliation (and thus share the same accounting framework), and are dominated by long-term investors have a larger influence on the earnings management decisions at the focal firm level. In line with literature on herding (Scharfstein and Stein (1990), Banerjee (1992), Hong et al. (2005)) and information cascades (Bikhchandani et al. (1992)), we assume that uncertainty about the optimal or tolerated level of earnings manipulation pushes firms to copy their investor-peer firms' decisions. In line with this notion, Kedia et al. (2015) find that a firm's earnings management decision is highly sensitive to the earnings management decisions of other firms headquartered nearby, even after controlling for industry clusters. Dougal et al. (2015) document that there are strong similarities in the investment decisions among neighboring firms, indicating that geography matters for peer pressure. A growing literature further shows that proximity between firms, in various dimensions such as geographical and cultural closeness, leads to spillover effects in financial decisions (Fisman et al. (2017), Parsons et al. (2018), Dechow and Tan (2021)).

3.3 Economic outcomes from investor-peer pressure in earnings management decisions

Gao and Zhang's (2018) theoretical model predicts that a firm's managers manipulate more when they believes that their peers' reports are more likely to be manipulated. To provide empirical support for a competitive rivalry argument, we hypothesize that it may be a dominant strategy for a focal firm in a competitive market for external equity to follow the earnings management decisions of its investor peers and make the focal firm more attractive to investors.

[INSERT TABLE VI ABOUT HERE]

The results are shown in Table VI. We document a more pronounced effect of peer pressure on firms that engage in large equity issuances in the next period, suggesting that peer pressure is more salient for firms with an emerging competitive situation in the equity financing market.[9] A Wald test at the bottom of the table for columns (1) and (2) confirms this finding: the difference between the impact of investor-peer earnings management on focal firms that do not significantly raise equity in the next period and on focal firms that do significantly raise equity is statistically different from zero (p-value = 0.007). Specifically, a one-standard deviation increase in investor peers' earnings management increases the focal firm's discretionary accruals with significant equity issuance in the next period by 2.6 percentage points (=1 x 0.091 x 0.285), and by 1.7 percentage points (1 x 0.090 x 0.188). This indicates that a one-standard deviation increase in the level of investor peers' earnings management increases focal firms' earnings management by roughly 14.2% (= 0.026 / 0.183) relative to the sample mean of focal firms' earnings management (18.3%).

However, we do not find the same pattern for upcoming competition in the debt financing market, suggesting that borrowers (e.g., banks) are less sensitive to earnings management activities. An explanation could be that not engaging in earnings management when peers do so could be a credible signal of a firm's commitment to truthful reporting and thus reduce the likelihood of covenant violations.

4 Robustness tests

In this section, we conduct several tests to check the robustness of our findings. In particular, we use alternative earnings management proxies, examine real earnings man-

[9] We define a focal firm's equity (debt) issuance activity as large if its equity (debt) issuance activity is greater than the median, and not otherwise.

agement activities, address the problem of omitted variables bias, and apply alternative investor peer group definitions.

4.1 Alternative accrual-based earnings management proxies and income smoothing

In our baseline analysis, we use the Jones (1991) model, modified by Dechow et al. (1995) and adjusted for performance by Kothari et al. (2005). Although this a widely-used model in the accounting literature, we also consider alternative proxies for discretionary accruals and income smoothing to ensure that our findings are not driven by our choice of the model for discretionary accruals. We re-estimate our baseline model by using discretionary accruals as the dependent variable that are calculated based on (i) Owens et al. (2017), (ii) McNichols (2002), and (iii) Tucker and Zarowin (2006). These measures are labelled AbsDA_OWZ, AbsDA_McN, and Income_TZ, respectively (see Section 2.2.1 for details). The results are shown in Table VII.

The estimated coefficient on the peer earnings management proxy, PEER_EM, is positive and statistically significant in all three regressions (with $p \leq 0.01$). It varies between 0.111 and 0.254, compared to coefficient of 0.201 in the baseline model. These results provide assurance that our findings are insensitive to the use of alternative discretionary accruals models.

[INSERT TABLE VII ABOUT HERE]

4.2 Real earnings management activities

Next, we examine real earnings management activities and use four different proxies for real earnings management. We re-estimate our baseline model by using real earnings management proxies as the dependent variable that are calculated based on (i) Kim et al. (2017), (ii) Cohen and Zarowin (2010), and (iii) Roychowdhury (2006). These measures are denoted as REM_KKZ, REM_CZ1, REM_CZ2, and REM_R, respectively (see Section 2.2.2 for details). The results are shown in Table VIII.

As expected, the association between the level of real earnings management in peer firms (PEER_EM) and focal firm's real earnings management is positive and statistically significant in all regression models (with $p \leq 0.01$). Therefore, our results that show comovements in accrual-based earnings management in peer firms and focal firms also extend to real earnings management.

[INSERT TABLE VIII ABOUT HERE]

4.3 Omitted variables bias

Although our results show a positive association between investor distraction and earnings management, it is still possible that both are simultaneously determined by other variables that are omitted from the regression. To further alleviate this concern, we re-estimate our baseline model by including firm fixed effects instead of industry fixed effects in all regressions. Moreover, as the dependent variable, we use all measures of accrual-based earnings management decisions (Jones (1991), Dechow et al. (1995), McNichols (2002), Kothari et al. (2005), Owens et al. (2017)) and all measures for real earnings management decisions (Roychowdhury (2006), Cohen and Zarowin (2010), Kim et al. (2017)). The results are shown in Table IX.

[INSERT TABLE IX ABOUT HERE]

The association between peer firms' earnings management (PEER_EM) and focal firms' earnings management is positive and statistically significant in all the different regression models (with at least $p \leq 0.10$). Most importantly, the peer effect remains stable and comparable to the baseline model with industry fixed effects. We conclude that our baseline results are unlikely attributable to omitted focal firm characteristics.

4.4 Alternative investor-peer group definitions

In a final step, we address potential concerns about the investor-peer group definition used in our models so far. In our baseline analysis, we include all investor peer firms that belong to the top decile (highest common investor overlap) of firms that share a common investor base with the focal firm in a given year. To check the robustness of our results, we re-estimate the baseline model, but shift the investor-peer group definition from the top decile to the top three, two, and one percent. The results are shown in Table X.

For all three alternative investor-peer group definitions, the estimated coefficient of interest, PEER_EM, remains positive and statistically significant (with $p \leq 0.01$). As one moves from the top three to the top one percent classification, the estimate increases in magnitude (both absolute and relative). These results suggest that the stronger peer firms and focal firm are institutionally connected, the more powerful is the signal that reported earnings at the peers' level will send to the management of the focal firm.

[INSERT TABLE X ABOUT HERE]

5 Conclusions

Using a comprehensive set of US firms over the 1990-2019 period, we examine the relation between the earnings management decisions in focal firms and their institutional investor peer firms. Controlling for multiple fixed effects, we confirm our hypothesis that focal firms are to a large degree influenced by their common investor peers in their earnings management decisions. Our results are robust to sample composition, alternative estimation methods, and endogeneity concerns. We document that the level of focal firms' earnings management is positively associated with both accrual-based earnings management as well as real earnings management in investor-peer firms, suggesting that managers scrutinize their common institutional investor peer firms to verify the tolerated level of earnings manipulation.

To verify that our results are causal, we show that common investor peer firms matter only when these common investors are not distracted. Moreover, peers seem to be more important that are geographically closer to the focal firm, have the same industry affiliation, and are dominated by long-term investors. These findings indicate that focal firms' managers learn more from their closest peers than from others. Finally, we document evidence that competitive rivalry could be an alternative mechanism through which investor peer firms influence focal firms' behavior. Taken together, our study is the first to show that common institutional ownership has a strong impact on accounting information quality in the context of peer pressure.

The results of this study can appeal to both practitioners and academics. For academics, they suggest future avenues for theoretical and empirical research that explores the implications of rising institutional connectivity between firms – an international phenomenon due to ongoing consolidation in the asset management industry – on other dimensions of accounting information, and how they interact with other strategic corporate outcomes. For practitioners and policymakers, our findings help to explain how common ownership within industries as well as across different industries affects financial reporting quality.

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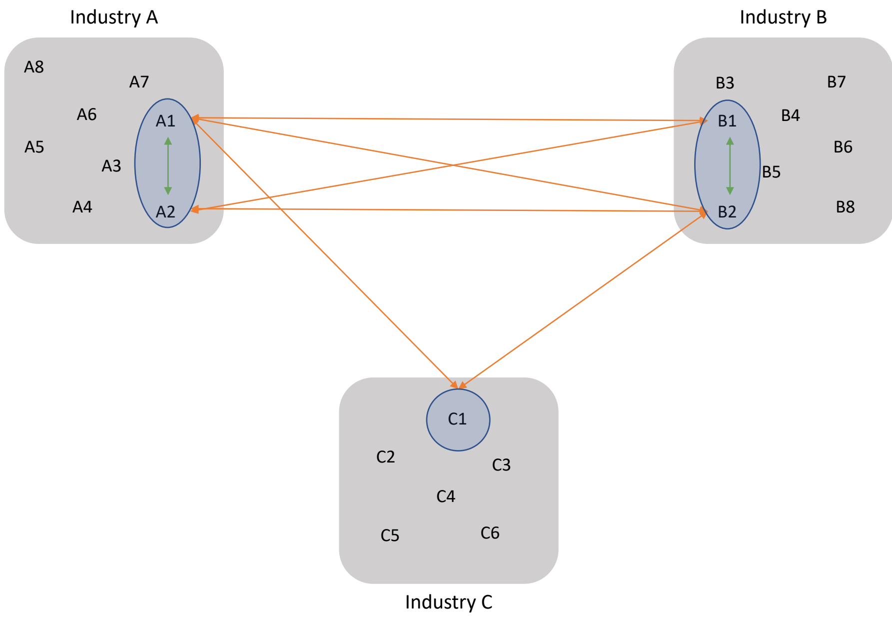
Figures and Tables

Figure I: A vivid example of common institutional investor overlap

Industry A	Industry B	Industry C
Firm_{A1}	Firm_{B1}	Firm_{C1}
Firm_{A2}	Firm_{B2}	

(a) Investor's portfolio



(b) Common investor overlap

This figure illustrates the difference between overlaps between common investors within an industry and overlaps between common investors across industries. Figure I (a) shows a fictitious portfolio of an institutional investor with five portfolio firms. These five portfolio firms operate in three different industries (A, B, and C). The firms in the investor's portfolio are highlighted in blue. Figure I (b) shows the different types of connection between the firms within and across industries. Firms are numbered A1, A2,...,B1,B2,...,etc. In the intra-industry common investor overlap view, we consider only the following pairs of firms: $A1 + A2$ and $B1 + B2$, this link is highlighted with a green double arrow. In contrast, an inter-industry common investor overlap view expands the possible firm pairs to the following cases: $A1+B1$, $A1+B2$, $A1+C1$, $A2+B1$, $A2+B2$, $A2+C2$, $B1+C1$, and $B2+C1$, this link is highlighted with a orange double arrow.

Table I: Descriptive statistics

This table reports the summary statistics of the main variables of the focal firm characteristics used in the analysis (Panel A and B). In Panel C, we report the investor-peer-averages for the dependent variables, which are taken across all of the firms in the peer group except the focal firm itself. For each variable, we present its number of non-missing observations, mean, standard deviation, 1% percentile, 25% percentile, 50% percentile, 75% percentile, and 99% percentile. The sample period is from 1990 through 2019. A detailed definitions of the variables are provided in Table A1.

	Obs.	Mean	SD	p1	p25	p50	p75	p99
Panel A: Earnings management proxies - focal firm								
AbsDA_KLW	54,613	0.162	0.281	0.001	0.031	0.073	0.165	1.758
AbsDA_OWZ	49,785	0.071	0.080	0.001	0.021	0.047	0.090	0.448
AbsDA_McN	49,277	0.107	0.197	0.001	0.018	0.045	0.108	1.209
Income_TZ	41,716	−0.001	0.542	−0.961	−0.459	0.007	0.453	0.958
REM_KKZ	51,648	−0.597	2.443	−14.003	−0.897	−0.357	0.000	7.674
REM_CZ1	51,648	−0.661	2.411	−13.566	−0.965	−0.399	−0.017	7.342
REM_CZ2	51,907	−0.482	2.121	−10.830	−0.726	−0.276	−0.019	7.868
REM_R	54,613	0.223	0.427	0.002	0.042	0.097	0.211	2.743
Panel B: Controls - focal firm								
FSIZE	54,613	5.792	1.998	1.858	4.293	5.675	7.173	10.707
OPCY	54,613	0.012	0.104	0.000	0.004	0.005	0.007	0.093
CFVOL	54,613	0.100	0.144	0.009	0.036	0.063	0.111	0.649
SAVOL	54,613	0.199	0.201	0.018	0.079	0.139	0.244	1.064
SGR	54,613	0.125	0.354	−0.541	−0.023	0.070	0.194	1.724
SGRVOL	54,613	1.082	35.137	0.018	0.079	0.150	0.286	6.196
LEV	54,613	0.175	0.181	0.000	0.006	0.132	0.284	0.736
LOSS	54,613	0.151	0.358	0.000	0.000	0.000	0.000	1.000
ROA	54,613	0.084	0.192	−0.713	0.058	0.117	0.171	0.378
DPAY	54,613	0.066	0.984	0.000	0.000	0.000	0.001	0.759
BIG4	54,613	0.822	0.382	0.000	1.000	1.000	1.000	1.000
IO	54,613	0.395	0.253	0.008	0.173	0.386	0.591	1.031
IHHI	54,613	0.024	0.027	0.000	0.007	0.018	0.032	0.175
DIST	25,497	0.057	0.020	0.018	0.043	0.054	0.069	0.114
DEBTISS	54,613	0.101	0.207	0.000	0.000	0.002	0.108	1.257
EQUITYISS	54,613	0.035	0.103	0.000	0.000	0.004	0.015	0.658
# of peers (Top 10%)	54,613	157.761	44.216	2.000	141.000	164.000	190.000	217.000
# of peers (Top 3%)	53,916	63.347	16.777	2.000	56.000	65.000	76.000	87.000
# of peers (Top 2%)	53,714	47.546	12.272	2.000	42.000	49.000	57.000	65.000
# of peers (Top 1%)	53,450	31.697	7.904	2.000	28.000	32.000	38.000	43.000

(*continued*)

Table I — *continued*

Panel C: Earnings management proxies - peer group averages

AbsDA_KLW	54,613	0.146	0.091	0.053	0.080	0.118	0.182	0.442
AbsDA_OWZ	49,773	0.059	0.015	0.038	0.052	0.058	0.064	0.101
AbsDA_McN	49,238	0.094	0.050	0.031	0.054	0.090	0.119	0.253
Income_TZ	41,669	−0.032	0.091	−0.203	−0.084	−0.033	0.017	0.163
REM_KKZ	51,634	−0.523	0.605	−1.887	−0.742	−0.466	−0.281	0.677
REM_CZ1	51,634	−0.614	0.609	−2.020	−0.883	−0.531	−0.338	0.663
REM_CZ2	51,894	−0.445	0.549	−1.749	−0.668	−0.403	−0.233	0.927
REM_R	54,613	0.193	0.125	0.072	0.113	0.152	0.234	0.567

Table II: Baseline regressions

This table reports the estimation results of focal firm's earnings management proxy (AbsDA_KLW) on investor peer firms' average earnings management proxy (PEER_EM). No control variables and no fixed effects are included in column (1). In columns (2) to (4), we add control variables on earnings management (FSIZE, OPCY, CFVOL, SAVOL, SGR, SGVOL, LEV, LOSS, ROA, DPAY, BIG4) and control variables on focal firm's investor base (IO, IHHI). Specification (4) represents our baseline model with a full set of controls and includes industry and year fixed effects. Industries are defined by four-digit SIC codes. The unit of observation is at the focal-firm-year level. Column (5) shows the standardized coefficients from the estimation in column (4). In the last two columns ((6) and (7)), we use signed values of discretionary accruals (DA) to divide the sample into income-decreasing (DA $>$ 0) and -increasing earnings management (DA $<$ 0). The investor-peer-averages for the dependent variable and all control variables are taken across all of the connected firms except the focal firm itself. A firm belongs to the investor peer group if it belongs to the top decile (highest common investor overlap) of firms that share a common investor base with the focal firm in a given year. A constant is included, but not reported, in all specifications. The sample period is from 1990 to 2019. The standard errors are adjusted for heteroskedasticity and are clustered at the focal firm level. Symbols (***), (**), and (*) indicate statistical significance at the 1%, 5%, and 10% levels, respectively, and *p-values* are reported in parentheses. A detailed definitions of the variables are provided in Table A1.

Dependent variable	AbsDA_KLW						
					Standardized	DA<0	DA>0
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
PEER_EM	0.913***	0.305***	0.215***	0.201***	0.065***	0.152***	0.170**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.008)	(0.024)
FSIZE		−0.003**	−0.002*	−0.005***	−0.033***	−0.006***	−0.002
		(0.028)	(0.078)	(0.002)	(0.002)	(0.001)	(0.421)
OPCY		0.055	−0.140***	−0.142***	−0.053***	−0.208***	−0.011
		(0.457)	(0.009)	(0.009)	(0.009)	(0.006)	(0.754)
CFVOL		0.200***	0.147***	0.146***	0.074***	0.127***	0.156***
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
SAVOL		−0.010	0.037***	0.037***	0.026***	0.037***	0.045***
		(0.228)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
SGR		0.055***	0.041***	0.039***	0.049***	0.048***	0.034***
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
SGRVOL		0.000	0.000**	0.000*	0.008*	0.000***	0.000
		(0.121)	(0.049)	(0.057)	(0.057)	(0.000)	(0.593)
LEV		−0.057***	−0.010	−0.007	−0.004	−0.004	0.004
		(0.000)	(0.243)	(0.435)	(0.435)	(0.707)	(0.759)
LOSS		0.007	−0.018***	−0.019***	−0.024***	0.008	−0.007
		(0.275)	(0.003)	(0.001)	(0.001)	(0.270)	(0.364)
ROA		−0.045***	−0.040**	−0.044***	−0.030***	0.145***	−0.185***
		(0.008)	(0.011)	(0.005)	(0.005)	(0.000)	(0.000)

(*continued*)

Table II — *continued*

DPAY		0.001	0.020***	0.020***	0.070***	0.032***	0.002
		(0.917)	(0.001)	(0.001)	(0.001)	(0.001)	(0.642)
BIG4		0.001	−0.002	−0.002	−0.003	−0.002	−0.010*
		(0.925)	(0.658)	(0.625)	(0.625)	(0.782)	(0.084)
IO		0.002	−0.018*	−0.024**	−0.021**	−0.044***	0.004
		(0.905)	(0.096)	(0.032)	(0.032)	(0.001)	(0.797)
IHHI		−0.307***	−0.078	−0.025	−0.002	0.015	0.039
		(0.000)	(0.261)	(0.718)	(0.718)	(0.859)	(0.688)
Year-FE	No	Yes	Yes	Yes	Yes	Yes	Yes
Industry-FE	No	No	Yes	Yes	Yes	Yes	Yes
Peers-AVG	No	No	No	Yes	Yes	Yes	Yes
Observations	54,613	54,613	54,380	54,380	54,380	35,391	18,981
Adjusted-R-squared	0.088	0.127	0.217	0.217	0.217	0.234	0.294

Table III: Distracted common investors

This table reports the re-estimation of our baseline model (see column (4) of Table II) only among attentive investors (column (1)) or distracted investors (column (2)). We follow the approach of Kempf et al. (2017) to capture time periods when the common investors of the focal firm and the corresponding peer firms are distracted. In each fiscal year, we divide firms into two groups along the tercile investor distraction score. A firm's common investor base is called attentive if it belongs to the group whose distraction level is below the tercile, and distracted otherwise. We include control variables on earnings management (FSIZE, OPCY, CFVOL, SAVOL, SGR, SGVOL, LEV, LOSS, ROA, DPAY, BIG4) and control variables on focal firm's investor base (IO, IHHI). All specifications include industry and year fixed effects. Industries are defined by four-digit SIC codes. The unit of observation is at the focal-firm-year level. The investor-peer-averages for the dependent variable and all control variables are taken across all of the connected firms except the focal firm itself. A firm belongs to the investor peer group if it belongs to the top decile (highest common investor overlap) of firms that share a common investor base with the focal firm in a given year. A constant is included, but not reported, in all specifications. The sample period is from 1990 to 2019. The standard errors are adjusted for heteroskedasticity and are clustered at the focal firm level. Symbols (***), (**), and (*) indicate statistical significance at the 1%, 5%, and 10% levels, respectively, and *p-values* are reported in parentheses. A detailed definitions of the variables are provided in Table A1.

Dependent variable	AbsDA_KLW		AbsDA_KLW	
	Attentive	Distracted	Attentive	Distracted
	(1)	(2)	(3)	(4)
PEER_EM	0.747***	0.271	0.632***	0.049
	(0.000)	(0.241)	(0.004)	(0.847)
FSIZE	−0.010***	−0.006	−0.014	−0.007
	(0.004)	(0.151)	(0.184)	(0.550)
OPCY	−0.053*	−3.050**	0.048***	0.000
	(0.066)	(0.031)	(0.001)	(1.000)
CFVOL	0.048*	0.054	0.066	0.116
	(0.056)	(0.241)	(0.149)	(0.121)
SAVOL	0.036**	0.025	0.046	0.019
	(0.029)	(0.219)	(0.114)	(0.585)
SGR	0.033***	0.023	0.050***	0.034
	(0.001)	(0.148)	(0.000)	(0.186)
SGRVOL	0.000	0.000	0.000***	0.000
	(0.568)	(0.703)	(0.000)	(0.825)
LEV	0.023	−0.022	0.031	−0.030
	(0.230)	(0.326)	(0.428)	(0.477)
LOSS	0.001	0.023	0.017	0.019
	(0.927)	(0.185)	(0.397)	(0.406)
ROA	−0.001	0.080*	0.115**	0.075
	(0.972)	(0.079)	(0.029)	(0.312)

(*continued*)

Table III — *continued*

DPAY	0.022**	0.308**	−0.024**	−0.007
	(0.028)	(0.031)	(0.016)	(0.978)
BIG4	−0.003	0.005	−0.013	−0.032
	(0.778)	(0.660)	(0.514)	(0.260)
IO	0.039*	−0.072***	0.070*	−0.074
	(0.079)	(0.007)	(0.052)	(0.131)
IHHI	−0.358***	0.109	−0.181	0.039
	(0.002)	(0.584)	(0.461)	(0.880)
Year-FE	Yes	Yes	Yes	Yes
Industry-FE	Yes	Yes	No	No
Firm-FE	No	No	Yes	Yes
Peers-AVG	Yes	Yes	Yes	Yes
Observations	8,472	8,471	7,346	7,644
Adjusted-R-squared	0.213	0.247	0.258	0.280
Chow test p(PEER_EM (1) $\neq$ PEER_EM (2)) = 0.000				
Chow test p(PEER_EM (3) $\neq$ PEER_EM (4)) = 0.004				

Table IV: Suspect firms

This table reports the re-estimation of our baseline model (see column (4) of Table II) only among different peer-subgroups. In each fiscal year, a firm is called a suspect firm (column (3) and with standardized coefficients (4)) if the firm meets or just beats consensus analyst forecast by 1 cent per share, and a non suspect firm otherwise (column (1) and with standardized coefficients (2)). We include control variables on earnings management (FSIZE, OPCY, CFVOL, SAVOL, SGR, SGVOL, LEV, LOSS, ROA, DPAY, BIG4) and control variables on focal firm's investor base (IO, IHHI). All specifications include industry and year fixed effects. Industries are defined by four-digit SIC codes. The unit of observation is at the focal-firm-year level. The investor-peer-averages for the dependent variable and all control variables are taken across all of the connected firms except the focal firm itself. A firm belongs to the investor peer group if it belongs to the top decile (highest common investor overlap) of firms that share a common investor base with the focal firm in a given year. A constant is included, but not reported, in all specifications. The sample period is from 1990 to 2018. The standard errors are adjusted for heteroskedasticity and are clustered at the focal firm level. Symbols (***), (**), and (*) indicate statistical significance at the 1%, 5%, and 10% levels, respectively, and *p-values* are reported in parentheses. A detailed definitions of the variables are provided in Table A1.

Dependent variable	AbsDA_KLW			
	Non suspect firm		Suspect firm	
		Standardized		Standardized
	(1)	(2)	(3)	(4)
PEER_EM	0.176***	0.057***	0.695***	0.226***
	(0.000)	(0.000)	(0.001)	(0.001)
FSIZE	−0.004***	−0.030***	−0.010***	−0.070***
	(0.008)	(0.008)	(0.002)	(0.002)
OPCY	−0.142**	−0.052**	−0.958	−0.354
	(0.012)	(0.012)	(0.241)	(0.241)
CFVOL	0.148***	0.075***	0.116**	0.059**
	(0.000)	(0.000)	(0.011)	(0.011)
SAVOL	0.042***	0.030***	−0.004	−0.003
	(0.000)	(0.000)	(0.814)	(0.814)
SGR	0.040***	0.050***	0.037**	0.046**
	(0.000)	(0.000)	(0.025)	(0.025)
SGRVOL	0.000*	0.008*	0.000*	0.011*
	(0.077)	(0.077)	(0.080)	(0.080)
LEV	−0.013	−0.008	0.048**	0.031**
	(0.151)	(0.151)	(0.043)	(0.043)
LOSS	−0.021***	−0.027***	0.005	0.006
	(0.001)	(0.001)	(0.818)	(0.818)
ROA	−0.051***	−0.034***	0.050	0.034
	(0.002)	(0.002)	(0.271)	(0.271)

(*continued*)

Table IV — *continued*

DPAY	0.020***	0.069***	0.112	0.391
	(0.002)	(0.002)	(0.194)	(0.194)
BIG4	−0.002	−0.003	−0.003	−0.004
	(0.619)	(0.619)	(0.777)	(0.777)
IO	−0.019	−0.017	−0.025	−0.023
	(0.111)	(0.111)	(0.272)	(0.272)
IHHI	−0.046	−0.004	0.074	0.007
	(0.539)	(0.539)	(0.630)	(0.630)
Year-FE	Yes	Yes	Yes	Yes
Industry-FE	Yes	Yes	Yes	Yes
Peers-AVG	Yes	Yes	Yes	Yes
Observations	45,991	45,991	8,368	8,368
Adjusted-R-squared	0.217	0.217	0.219	0.219
Chow test p(PEER_EM (1) $\neq$ PEER_EM (3)) = 0.000				

Table V: When does investor-peer pressure matter?

This table reports the re-estimation of our baseline model (see column (4) of Table II) only among different peer-subgroups. In each fiscal year, a firm's investor peer group is split into subgroups along the peer group's median Tobin's Q (Column 1), median geographic distance to the focal firm's headquarter (Column 2), same four-digit SIC industry affiliation (Column 3), and long-term and short-term dominated peer firms (Column 4). We follow the approach from Gaspar et al. (2005) to calculate the investment horizons of institutional investors. A focal firm is dominated by long-term investors when level of long-term institutional ownership is higher than the level of short-term institutional ownership in a given year. We include control variables on earnings management (FSIZE, OPCY, CFVOL, SAVOL, SGR, SGVOL, LEV, LOSS, ROA, DPAY, BIG4) and control variables on focal firm's investor base (IO, IHHI). All specifications include industry and year fixed effects. Industries are defined by four-digit SIC codes. The unit of observation is at the focal-firm-year level. The investor-peer-averages for the dependent variable and all control variables are taken across all of the connected firms except the focal firm itself. A firm belongs to the investor peer group if it belongs to the top decile (highest common investor overlap) of firms that share a common investor base with the focal firm in a given year. A constant is included, but not reported, in all specifications. The sample period is from 1990 to 2018. The standard errors are adjusted for heteroskedasticity and are clustered at the focal firm level. Symbols (***), (**), and (*) indicate statistical significance at the 1%, 5%, and 10% levels, respectively, and *p-values* are reported in parentheses. A detailed definitions of the variables are provided in Table A1.

Dependent variable	AbsDA_KLW			
	Value	Geography	Industry	Horizon
	(1)	(2)	(3)	(4)
EM_PEER_HIGH	0.167***			
	(0.000)			
EM_PEER_LOW	0.117**			
	(0.015)			
EM_PEER_CLOSE		0.212***		
		(0.000)		
EM_PEER_AWAY		0.074*		
		(0.086)		
EM_PEER_SAME			0.360***	
			(0.000)	
EM_PEER_ACROSS			0.081***	
			(0.001)	
EM_PEER_LONG				0.114***
				(0.008)
EM_PEER_SHORT				0.025
				(0.116)
FSIZE	−0.005***	−0.005***	−0.005***	−0.004***
	(0.001)	(0.000)	(0.000)	(0.003)
OPCY	−0.128**	−0.121**	−0.139**	−0.141***
	(0.018)	(0.025)	(0.010)	(0.009)
CFVOL	0.152***	0.153***	0.147***	0.147***
	(0.000)	(0.000)	(0.000)	(0.000)

(*continued*)

Table V — *continued*

SAVOL	0.036***	0.036***	0.035***	0.037***
	(0.000)	(0.000)	(0.000)	(0.000)
SGR	0.038***	0.038***	0.038***	0.039***
	(0.000)	(0.000)	(0.000)	(0.000)
SGRVOL	0.000*	0.000*	0.000	0.000*
	(0.056)	(0.056)	(0.126)	(0.057)
LEV	−0.006	−0.007	−0.008	−0.007
	(0.481)	(0.451)	(0.353)	(0.460)
LOSS	−0.018***	−0.019***	−0.020***	−0.019***
	(0.003)	(0.002)	(0.001)	(0.001)
ROA	−0.037**	−0.037**	−0.044***	−0.043***
	(0.018)	(0.019)	(0.005)	(0.006)
DPAY	0.018***	0.018***	0.019***	0.020***
	(0.002)	(0.003)	(0.001)	(0.001)
BIG4	−0.003	−0.003	−0.003	−0.003
	(0.594)	(0.521)	(0.576)	(0.570)
IO	−0.024**	−0.024**	−0.025**	−0.027**
	(0.031)	(0.032)	(0.024)	(0.014)
IHHI	−0.023	−0.008	−0.045	−0.024
	(0.738)	(0.906)	(0.506)	(0.736)
Year-FE	Yes	Yes	Yes	Yes
Industry-FE	Yes	Yes	Yes	Yes
Peers-AVG	Yes	Yes	Yes	Yes
Observations	54,040	51,705	54,380	54,380
Adjusted-R-squared	0.218	0.216	0.236	0.217
Wald test p-value	0.455	0.024	0.000	0.063

Table VI: Future equity and debt financing

This table reports the re-estimation of our baseline model (see column (4) of Table II) only among different peer-subgroups. In each fiscal year, the equity (debt) issuance activity of a focal firm is significant if its equity (debt) issuance is greater than the median, and not otherwise. The investor peer firms also have significant equity (debt) issuance activities in the next year if their average value is greater than zero, and otherwise not. This table shows the estimation results of focal firms' earnings management (AbsDA_KLW) on peer firms' proxy of future equity (debt) issuance activities. In columns (1) and (2), we distinguish between focal firms that make significant equity issuances in the next year and those that do not. Column (3) reports the effect if both the focal firm and its investor peers make significant equity issues in the next year. Columns (4) and (5), we distinguish between focal firms that make significant debt issuances in the next year and those that do not. Column (6) reports the effect if both the focal firm and its investor peers make significant debt issues in the next year. We include control variables on return on assets (FSIZE, SGR, CAPX, TANG, PROFIT, CASH, LEV, R&D, A&D, IO). All specifications include industry and year fixed effects. Industries are defined by four-digit SIC codes. The unit of observation is at the focal-firm-year level. The investor-peer-averages for the dependent variable and all control variables are taken across all of the connected firms except the focal firm itself. A firm belongs to the investor peer group if it belongs to the top decile (highest common investor overlap) of firms that share a common investor base with the focal firm in a given year. A constant is included, but not reported, in all specifications. The sample period is from 1990 to 2018. The standard errors are adjusted for heteroskedasticity and are clustered at the focal firm level. Symbols (***), (**), and (*) indicate statistical significance at the 1%, 5%, and 10% levels, respectively, and *p-values* are reported in parentheses. A detailed definitions of the variables are provided in Table A1.

Dependent variable	AbsDA_KLW					
	Next Year Equity Issuance			Next Year Debt Issuance		
	Focal Firm		Focal Firm and Peers	Focal Firm		Focal Firm and Peers
	No	Yes	Yes	No	Yes	Yes
	(1)	(2)	(3)	(4)	(5)	(6)
PEER_EM	0.188***	0.285***	0.295***	0.339***	0.206***	0.208***
	(0.007)	(0.006)	(0.006)	(0.000)	(0.004)	(0.004)
FSIZE	−0.006***	−0.001	−0.002	−0.004*	−0.005**	−0.005**
	(0.008)	(0.541)	(0.504)	(0.081)	(0.011)	(0.012)
OPCY	−0.607	0.014	0.024	−0.707**	0.063	0.063
	(0.222)	(0.865)	(0.763)	(0.033)	(0.413)	(0.418)
CFVOL	0.074**	0.191***	0.195***	0.163***	0.140***	0.140***
	(0.011)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
SAVOL	0.049***	0.040***	0.041***	0.037***	0.047***	0.047***
	(0.000)	(0.003)	(0.002)	(0.008)	(0.000)	(0.000)
SGR	0.037***	0.032***	0.031***	0.035***	0.036***	0.036***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
SGRVOL	0.000	0.000**	0.000**	0.000	0.000**	0.000**
	(0.661)	(0.012)	(0.012)	(0.938)	(0.019)	(0.019)
LEV	−0.020*	0.001	0.001	−0.009	−0.015	−0.015
	(0.099)	(0.956)	(0.969)	(0.555)	(0.213)	(0.209)

(*continued*)

Table VI — *continued*

LOSS	0.017*	−0.025***	−0.025***	−0.029***	0.000	0.000
	(0.079)	(0.009)	(0.010)	(0.001)	(0.967)	(0.968)
ROA	0.087**	−0.050**	−0.046**	−0.035	0.001	0.001
	(0.012)	(0.025)	(0.037)	(0.155)	(0.975)	(0.965)
DPAY	0.068	0.006	0.005	0.082**	−0.003	−0.003
	(0.166)	(0.478)	(0.564)	(0.016)	(0.717)	(0.721)
BIG4	0.008	−0.017**	−0.018**	−0.014	0.004	0.004
	(0.208)	(0.024)	(0.022)	(0.100)	(0.512)	(0.508)
IO	−0.029*	−0.025*	−0.026*	−0.025	−0.030**	−0.031**
	(0.088)	(0.097)	(0.090)	(0.186)	(0.019)	(0.019)
IHHI	0.043	−0.129	−0.153	0.029	−0.064	−0.068
	(0.628)	(0.313)	(0.215)	(0.799)	(0.481)	(0.461)
Year-FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry-FE	Yes	Yes	Yes	Yes	Yes	Yes
Peers-AVG	Yes	Yes	Yes	Yes	Yes	Yes
Observations	23,851	23,299	23,241	15,633	31,513	31,480
Adjusted-R-squared	0.225	0.222	0.222	0.233	0.227	0.227
Chow test p(PEER_EM (1) $\neq$ PEER_EM (2)) = 0.007						
Chow test p(PEER_EM (4) $\neq$ PEER_EM (5)) = 0.000						

Table VII: Alternative accrual-based earnings management proxies and income smoothing

This table shows the estimation results of focal firm's earnings management proxies (AbsDA_OWZ, AbsDA_McN, Income_TZ) on investor peer firms' average earnings management proxies (Peer_EM), respectively. The dependent variables are shown in the header line. We include control variables on earnings management (FSIZE, OPCY, CFVOL, SAVOL, SGR, SGVOL, LEV, LOSS, ROA, DPAY, BIG4) and control variables on focal firm's investor base (IO, IHHI). All specifications include industry and year fixed effects. Industries are defined by four-digit SIC codes. Unit of observation is at the focal-firm-year level. Investor-peer-averages for the dependent variable and all control variables are taken across all of the connected firms except the focal firm itself. A firm belongs to the investor peer group if it belongs to the top decile (highest common investor overlap) of firms that share a common investor base with the focal firm in a given year. A constant is included, but not reported, in all specifications. Sample period is from 1990 to 2019. Standard errors are adjusted for heteroskedasticity and are clustered at the focal firm level. Symbols (***), (**), and (*) indicate statistical significance at the 1%, 5%, and 10% levels, respectively, and *p-values* are reported in parentheses. A detailed definitions of the variables are provided in Table A1.

Dependent variable	AbsDA_OWZ (1)	AbsDA_McN (2)	Income_TZ (3)
PEER_EM	0.254***	0.195***	0.111***
	(0.000)	(0.001)	(0.007)
FSIZE	−0.005***	−0.003***	−0.029***
	(0.000)	(0.007)	(0.000)
OPCY	0.018	−0.006	−0.094
	(0.243)	(0.867)	(0.203)
CFVOL	0.086***	0.090***	−0.187***
	(0.000)	(0.000)	(0.000)
SAVOL	0.028***	0.038***	0.001
	(0.000)	(0.000)	(0.981)
SGR	0.030***	0.038***	0.040***
	(0.000)	(0.000)	(0.000)
SGRVOL	0.000***	0.000	0.000***
	(0.000)	(0.639)	(0.000)
LEV	−0.008***	0.006	−0.088***
	(0.006)	(0.420)	(0.002)
LOSS	0.004*	0.007	−0.012
	(0.077)	(0.133)	(0.407)
ROA	−0.024***	−0.019*	0.037
	(0.000)	(0.081)	(0.243)
DPAY	0.000	0.003	0.009
	(0.959)	(0.486)	(0.310)
BIG4	−0.001	−0.011***	−0.006
	(0.521)	(0.001)	(0.651)
IO	−0.009***	−0.030***	−0.067**
	(0.007)	(0.000)	(0.043)
IHHI	−0.018	0.010	−0.096
	(0.428)	(0.853)	(0.699)
Year-FE	Yes	Yes	Yes
Industry-FE	Yes	Yes	Yes
Peers-AVG	Yes	Yes	Yes
Observations	49,596	49,035	41,528
Adjusted-R-squared	0.200	0.156	0.065

Table VIII: Real earnings management proxies

This table shows the estimation results of focal firm's real earnings management proxies (REM_KKZ, REM_CZ2, REM_CZ1, REM_R) on investor peer firms' average earnings management proxies (PEER_EM), respectively. Dependent variables are shown in the header line. We include control variables on earnings management (FSIZE, OPCY, CFVOL, SAVOL, SGR, SGVOL, LEV, LOSS, ROA, DPAY, BIG4) and control variables on focal firm's investor base (IO, IHHI). All specifications include industry and year fixed effects. Industries are defined by four-digit SIC codes. Unit of observation is at the focal-firm-year level. Investor-peer-averages for the dependent variable and all control variables are taken across all of the connected firms except the focal firm itself. A firm belongs to the investor peer group if it belongs to the top decile (highest common investor overlap) of firms that share a common investor base with the focal firm in a given year. A constant is always included, but not reported. Sample period is from 1990 to 2019. Standard errors are adjusted for heteroskedasticity and are clustered at the focal firm level. Symbols (***), (**), and (*) indicate statistical significance at the 1%, 5%, and 10% levels, respectively, and *p-values* are reported in parentheses.Variable definitions are provided in Table A1.

Dependent variable	REM_KKZ (1)	REM_CZ1 (2)	REM_CZ2 (3)	REM_R (4)
PEER_EM	0.181***	0.191***	0.211***	0.275***
	(0.004)	(0.002)	(0.000)	(0.000)
FSIZE	0.075***	0.080***	0.049***	−0.016***
	(0.000)	(0.000)	(0.000)	(0.000)
OPCY	1.505**	1.315	0.956	−0.194***
	(0.023)	(0.121)	(0.123)	(0.003)
CFVOL	−0.365***	−0.268*	−0.196*	0.189***
	(0.009)	(0.063)	(0.087)	(0.000)
SAVOL	−0.073	−0.107	−0.138**	0.114***
	(0.348)	(0.175)	(0.024)	(0.000)
SGR	−0.183***	−0.304***	−0.312***	0.092***
	(0.000)	(0.000)	(0.000)	(0.000)
SGRVOL	0.000***	0.000***	0.000**	0.000
	(0.000)	(0.001)	(0.018)	(0.309)
LEV	0.081	0.132*	0.035	−0.054***
	(0.249)	(0.057)	(0.515)	(0.000)
LOSS	0.053	0.110**	0.084**	−0.034***
	(0.262)	(0.021)	(0.036)	(0.000)
ROA	−0.359***	−0.969***	−0.536***	−0.127***
	(0.001)	(0.000)	(0.000)	(0.000)
DPAY	−0.151**	−0.126	−0.084	0.021***
	(0.029)	(0.151)	(0.191)	(0.003)
BIG4	−0.059	−0.043	−0.008	−0.007
	(0.156)	(0.292)	(0.805)	(0.266)
IO	−0.025	−0.052	−0.058	0.003
	(0.768)	(0.529)	(0.371)	(0.828)
IHHI	0.368	0.614	0.688	−0.189*
	(0.503)	(0.252)	(0.126)	(0.058)
Year-FE	Yes	Yes	Yes	Yes
Industry-FE	Yes	Yes	Yes	Yes
Peers-AVG	Yes	Yes	Yes	Yes
Observations	51,536	51,536	51,796	54,380
Adjusted-R-squared	0.134	0.144	0.128	0.188

Table IX: Omitted variables

This table shows the estimation results of focal firm's (real) accrual-based earnings management proxies "AbsDA_OWZ and AbsDA_McN" (REM_KKZ, REM_CZ2, REM_CZ1, REM_R) on investor peer firms' average earnings management proxies (PEER_EM), respectively. In the first two columns ((6) and (7)), we use signed values of discretionary accruals (DA) to divide the sample into income-decreasing (DA > 0) and -increasing earnings management (DA < 0). The dependent variables are shown in the header line. We add in each column firm fixed effects to the model instead of industry fixed effects to account for time-invariant firm characteristics. We include control variables on earnings management (FSIZE, OPCY, CFVOL, SAVOL, SGR, SGVOL, LEV, LOSS, ROA, DPAY, BIG4) and control variables on focal firm's investor base (IO, IHHI). The unit of observation is at the focal-firm-year level. The investor-peer-averages for the dependent variable and all control variables are taken across all of the connected firms except the focal firm itself. A firm belongs to the investor peer group if it belongs to the top decile (highest common investor overlap) of firms that share a common investor base with the focal firm in a given year. A constant is included, but not reported, in all specifications. The sample period is from 1990 to 2019. The standard errors are adjusted for heteroskedasticity and are clustered at the focal firm level. Symbols (***), (**), and (*) indicate statistical significance at the 1%, 5%, and 10% levels, respectively, and *p-values* are reported in parentheses. A detailed definitions of the variables are provided in Table A1.

Dependent variable	AbsDA_KLW			AbsDA_OWZ	AbsDA_McN	AbsDA_KKZ	AbsDA_CZ1	AbsDA_CZ2	AbsDA_R
		DA<0	DA>0						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
PEER_EM	0.182***	0.146**	0.152*	0.218***	0.210***	0.190***	0.198***	0.227***	0.283***
	(0.001)	(0.040)	(0.080)	(0.000)	(0.001)	(0.002)	(0.001)	(0.000)	(0.000)
FSIZE	−0.005	−0.019***	0.005	−0.004***	−0.002	0.141***	0.119***	0.054**	−0.025***
	(0.146)	(0.000)	(0.390)	(0.000)	(0.468)	(0.000)	(0.000)	(0.019)	(0.000)
OPCY	−0.122*	−0.311**	−0.001	−0.001	0.000	0.224	0.090	−0.171	−0.058
	(0.098)	(0.016)	(0.991)	(0.955)	(1.000)	(0.690)	(0.885)	(0.706)	(0.417)
CFVOL	0.125***	0.097***	0.128***	0.079***	0.077***	0.015	0.004	0.010	0.119***
	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)	(0.920)	(0.977)	(0.940)	(0.000)
SAVOL	0.046***	0.045***	0.082***	0.019***	0.027***	0.141	0.144	0.102	0.055***
	(0.000)	(0.001)	(0.000)	(0.000)	(0.002)	(0.159)	(0.141)	(0.215)	(0.002)
SGR	0.042***	0.067***	0.022***	0.028***	0.031***	−0.229***	−0.361***	−0.331***	0.096***
	(0.000)	(0.000)	(0.007)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
SGRVOL	0.000*	0.000	0.000*	0.000**	0.000	0.000	0.000	0.000	0.000*
	(0.076)	(0.201)	(0.076)	(0.015)	(0.358)	(0.373)	(0.674)	(0.942)	(0.087)
LEV	−0.014	0.001	−0.023	−0.008**	0.006	−0.116	−0.064	−0.085	−0.054***
	(0.302)	(0.933)	(0.290)	(0.042)	(0.603)	(0.320)	(0.577)	(0.356)	(0.003)
LOSS	0.002	−0.002	0.027**	0.003	0.008*	0.083	0.166***	0.130**	−0.002
	(0.772)	(0.806)	(0.010)	(0.138)	(0.086)	(0.145)	(0.004)	(0.011)	(0.845)
ROA	0.015	0.101***	−0.082***	−0.002	0.034**	−0.522***	−0.978***	−0.537***	0.002
	(0.412)	(0.000)	(0.003)	(0.788)	(0.017)	(0.000)	(0.000)	(0.000)	(0.935)

(*continued*)

Table IX — *continued*

DPAY	0.016*	0.045***	−0.002	0.002	0.000	−0.007	0.002	0.029	0.007
	(0.062)	(0.005)	(0.792)	(0.559)	(0.968)	(0.902)	(0.975)	(0.566)	(0.377)
BIG4	−0.005	−0.019*	−0.002	0.000	−0.016***	0.129*	0.137*	0.178***	−0.019*
	(0.509)	(0.060)	(0.874)	(0.938)	(0.007)	(0.090)	(0.060)	(0.004)	(0.092)
IO	0.013	−0.001	0.015	−0.001	−0.021*	0.105	0.075	0.063	0.029
	(0.327)	(0.945)	(0.494)	(0.887)	(0.077)	(0.409)	(0.545)	(0.541)	(0.166)
IHHI	−0.111	−0.026	−0.114	−0.032	0.036	0.640	0.782	0.979*	−0.339**
	(0.185)	(0.807)	(0.412)	(0.243)	(0.617)	(0.368)	(0.259)	(0.100)	(0.014)
Year-FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm-FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Peers-AVG	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	53,742	34,413	17,577	48,932	48,353	50,814	50,814	51,065	53,742
Adjusted-R-squared	0.271	0.279	0.368	0.293	0.208	0.159	0.170	0.125	0.212

Table X: Different investor-peer group specifications

This table reports the re-estimation of our baseline model (see column (4) of Table II) only among different investor peer-group classifications. In columns (1) to (6), we use a continuous higher threshold of our investor peer group definition. A firm is part of the focal firm's investor peer group if it is among the top 3%, 2%, or 1% (highest common investor overlap) of firms that share a common investor base with the focal firm in a given year. The first column of each threshold shows the regression estimations, while the second column of each threshold shows the corresponding standardized coefficients. We include control variables on earnings management (FSIZE, OPCY, CFVOL, SAVOL, SGR, SGVOL, LEV, LOSS, ROA, DPAY, BIG4) and control variables on focal firm's investor base (IO, IHHI). Industries are defined by four-digit SIC codes. The unit of observation is at the focal-firm-year level. The investor-peer-averages for the dependent variable and all control variables are taken across all of the connected firms except the focal firm itself. A constant is included, but not reported, in all specifications. The sample period is from 1990 to 2018. The standard errors are adjusted for heteroskedasticity and are clustered at the focal firm level. Symbols (***), (**), and (*) indicate statistical significance at the 1%, 5%, and 10% levels, respectively, and *p-values* are reported in parentheses. A detailed definitions of the variables are provided in Table A1.

Dependent variable	AbsDA_KLW					
	Top 3%		Top 2%		Top 1%	
		Standardized		Standardized		Standardized
	(1)	(2)	(3)	(4)	(5)	(6)
PEER_EM	0.221***	0.075***	0.224***	0.076***	0.260***	0.089***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
FSIZE	−0.005***	−0.038***	−0.005***	−0.038***	−0.006***	−0.038***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
OPCY	−0.129**	−0.044**	−0.128**	−0.043**	−0.144**	−0.047**
	(0.019)	(0.019)	(0.022)	(0.022)	(0.015)	(0.015)
CFVOL	0.154***	0.077***	0.156***	0.077***	0.156***	0.076***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
SAVOL	0.036***	0.026***	0.036***	0.025***	0.037***	0.026***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
SGR	0.038***	0.048***	0.038***	0.047***	0.038***	0.048***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
SGRVOL	0.000*	0.007*	0.000*	0.007*	0.000*	0.006*
	(0.065)	(0.065)	(0.062)	(0.062)	(0.063)	(0.063)
LEV	−0.004	−0.003	−0.005	−0.003	−0.002	−0.001
	(0.610)	(0.610)	(0.577)	(0.577)	(0.849)	(0.849)
LOSS	−0.019***	−0.024***	−0.019***	−0.023***	−0.018***	−0.022***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.003)	(0.003)
ROA	−0.037**	−0.025**	−0.036**	−0.024**	−0.034**	−0.023**
	(0.021)	(0.021)	(0.026)	(0.026)	(0.036)	(0.036)

(*continued*)

Table X — *continued*

DPAY	0.019***	0.061***	0.019***	0.061***	0.021***	0.065***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)
BIG4	−0.003	−0.004	−0.003	−0.004	−0.002	−0.002
	(0.569)	(0.569)	(0.589)	(0.589)	(0.731)	(0.731)
IO	−0.020*	−0.018*	−0.020*	−0.018*	−0.018	−0.016
	(0.067)	(0.067)	(0.075)	(0.075)	(0.114)	(0.114)
IHHI	−0.027	−0.003	−0.023	−0.002	−0.035	−0.003
	(0.702)	(0.702)	(0.740)	(0.740)	(0.618)	(0.618)
Year-FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry-FE	Yes	Yes	Yes	Yes	Yes	Yes
Peers-AVG	Yes	Yes	Yes	Yes	Yes	Yes
Observations	53,916	53,916	53,714	53,714	53,450	53,450
Adjusted-R-squared	0.219	0.219	0.219	0.219	0.220	0.220

Appendix

Table A1: Variables descriptions and data sources

This table shows the descriptions of the variables used in the paper. Data are available from Compustat and Thomson Reuters Institutional Holdings (13F).Sample period is from 1990 to 2019.

Variable	Description	Source(s)
	Dependent variables	
AbsDA_KLW	Absolute value of abnormal accruals estimated based on the modified Jones model (Jones (1991)), modified by Dechow et al. (1995), adjusted for performance as in Kothari et al. (2005). A detailed description is provided in Section XY.	Authors' calculations based on Compustat
AbsDA_OWZ	Absolute value of abnormal accruals estimated based on the modified Jones model (Jones (1991)), modified by Dechow et al. (1995), adjusted for performance as in Kothari et al. (2005) and idiosyncratic industry related shocks as used by Owens et al. (2017). A detailed description is provided in Section XY.	As above
AbsDA_McN	Accruals quality measure estimated based on the model of Dechow and Dichev (2002) and modified by McNichols (2002).A detailed description is provided in Section XY.	As above
Income_TZ	Measure of income smoothing based on Tucker and Zarowin (2006).A detailed description is provided in Section XY.	As above
REM_KKZ	Absolute value of abnormal abnormal cash flows to proxy real earnings management based on Kim et al. (2017).A detailed description is provided in Section XY.	As above
REM_CZ1	Measure of real earnings management that combine abnormal production costs and abnormal discretionary expenses based on Cohen and Zarowin (2010). A detailed description is provided in Section XY.	As above
REM_CZ2	Measure of real earnings management that combine abnormal discretionary expenses and abnormal operating cash flow based on Cohen and Zarowin (2010). A detailed description is provided in Section XY.	As above
REM_R	Aggregate measure of real earnings management based on Roychowdhury (2006) and that combine abnormal cash flow, abnormal discretionary expenses, and abnormal production costs. A detailed description is provided in Section XY.	As above

(*continued*)

Table A1 — *continued*

	Independent variables	
FSIZE	Natural logarithm of total assets.	Compustat
OPCY	Natural logarithm of the firm's sum of days in receivable and days in inventory.	Compustat
CFVOL	Standard deviation of the cash flow over the last five years	Compustat
SAVOL	Standard deviation of the sales scaled by lagged total assets over the last five years	Compustat
SGR	Sales growth, defined as the sales at year t minus sales at year t-1 divided by sales at year t-1.	Compustat
SGRVOL	Standard deviation of the sales growth over the last five years	Compustat
LEV	Long-term debt divided by total assets	Compustat
LOSS	Takes the value of one for firms that report a net loss (negative net income) for a given year, and zero otherwise	Compustat
ROA	Net income scaled by total assets.	Compustat
DPAY	360 divided by the ratio of the average accounts payable to cost of goods sold.	Compustat
BIG4	Takes the value of one for firms that have been audited by one of the big four auditing companies (and their predecessors) in a given year, and zero otherwise	Compustat
IO	Institutional investor ownership expressed as a percentage of a firm's total shares outstanding	13F
IHHI	Concentration of firm's institutional investors. Computed as the Herfindahl-Hirschman Index of the holdings of firm's institutional investors.	13F
DIST	A measure of common institutional investor distraction, analogous to Kempf et al. (2017)	13F & Compustat
Geographical distance	For each firm pair, we compute the distance between headquarter locations based on the geographical coordinates of the five digit zip code by accounting for the curvature of the earth.	Compustat
Tobin's Q	Total assets, stockholders' equity, common shares outstanding, and price close at the end of fiscal scaled by total assets.	Compustat
Horizon	Following Gaspar et al. (2005), we divide the institutional investors into terciles based on their churn ratios for each fiscal year and call investors in the top (bottom) tercile as short-term (long-term).	13F
EQUITYISS	Equity issuances scaled by total assets.	Compustat
DEBTISS	Debt issuances scaled by total assets	Compustat