Relative Performance Evaluation and Contagion in Financial Reporting Quality

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Keywords: Relative performance evaluation; Earnings management; Earnings quality contagion; Financial reporting quality

JEL Classifications : G34; G38; C3

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1. Introduction

Relative performance evaluation (RPE) is the use of peer performance to set executive compensation. Relative performance awards have become an increasingly important component of executive pay over the past decade. These grants reward managers for outperforming a board-selected peer group in terms of shareholder value. The theoretical justification for benchmarking performance against a set of peers was first proposed by Holmstrom (1982). Holmstrom shows that relative evaluation can be desirable if there are common shocks that influence the output of managers. By filtering out exogenous shocks that are unrelated to the effort of the manager, a firm can more objectively measure the manager's performance. This can prevent lucky managers from being mistakenly categorized as good managers when the firm benefits from positive exogenous shocks. Filtering out exogenous shocks can also improve the welfare of the manager by reducing the variability of her compensation.

In this paper we investigate contagion in financial reporting quality (FRQ) through the relative performance evaluation channel. We define target firms as those adopting RPE contracts in their managers' compensation. Decisions in the target firms are potentially influenced by firms in their RPE peer group. Several theoretical papers link reporting choices of firms to peer pressure emanating from capital markets and product market competition (Einhorn, Langberg, and Versano 2018; Gao and Zhang 2019). More closely related, Bagnoli and Watts (2000) theoretically examine earnings management as a non-cooperative game and show that firms will engage in earnings management because they expect their peers to do the same.

Building on this prior theoretical work, we construct a stylized model to show how earnings management contagion can arise through the use of RPE in compensation contracts. When target firms expect peer firms to manipulate earnings, RPE provides incentives for the target manager to respond in kind. This is the central idea behind our empirical analyses. We test whether earnings management among

peer firms leads to a contagion in the earnings management behavior among target firms. We identify a set of actual peer firms for 1,466 target firms in the S&P 1500 from 2006 to 2016 based on actual RPE compensation contracts. Using actual peers, rather than proxies like industry classification, increases the power of our tests, as the links between target firms and their RPE peer firms are more accurately identified and not contaminated by misclassified peers.

We find that the level of peer firm earnings management strongly influences the earnings management behavior of target firms. Specifically, the median discretionary accruals of RPE peer firms are significantly associated with the accruals of their respective target firms. This relationship remains robust across alternative specifications, including controls for the median discretionary accruals of firms in the same industry (based on two-digit SIC codes), consistent with Kedia, Koh, and Rajgopal (2015).

These results underscore the importance of using actual RPE-designated peer firms rather than industry proxies. We further conduct cross-sectional analyses to identify the conditions under which earnings management contagion is most likely. Theoretical predictions of strategic complementarity suggest that managers will increase earnings management in response to peers' behavior; however, strategic substitutability may arise when the costs outweigh the benefits.

If a firm experiences negative shocks to its earnings, the manager may find it too costly or risky to manipulate earnings sufficiently to match or exceed peer performance. In such cases, the manager might choose to reduce earnings management or even manipulate earnings downward to create "cookie jar" reserves for future use. Consistent with this idea, we find that large differences in performance between the target firm and its peers lead to lower levels of correlation between the earnings management of the target firm and its peers, consistent with a breakdown in strategic complementarity and the emergence of substitution behavior.

Significant differences in the costs and incentives associated with earnings management between the target firm and its peers can dampen managerial responsiveness to peer behavior. To test this idea, we focus on institutional frictions that proxy for variation in enforcement risk and incentive strength. First, we examine whether contagion is weaker for firms under heightened regulatory scrutiny by constructing an indicator for whether the target firm was investigated by the SEC in the previous three years. This serves as a proxy for elevated expected costs of manipulation due to increased detection probability, reputational damage, and potential sanctions. We find that the contagion effect is attenuated for firms facing such scrutiny, consistent with the idea that personal and institutional constraints deter imitation.

Second, we examine whether contagion is affected by the benchmarking architecture of RPE contracts. When performance is evaluated against a broad market index (e.g., the S&P 500) rather than a narrow set of named peers, the salience of any one peer's financial reporting behavior is diluted. In these settings, managers are less likely to have strong incentives to mimic peer firms' earnings manipulation strategies. Consistent with this prediction, we find that the contagion effect is significantly lower when RPE contracts are indexed to broad benchmarks.

Third, we leverage variation in the type of performance metrics embedded in RPE schemes. Because earnings-based measures link compensation directly to accounting outcomes, we expect peer-driven contagion to be strongest when grants rely on those metrics. Grant-level regressions confirm this intuition: the interaction between peer discretionary accruals and an earnings-metric indicator is positive and significant, whereas the same interaction for non-financial metrics (e.g., customer or employee satisfaction) is economically and statistically negligible. This result shows that managers mimic peers' earnings manipulation only when their pay depends on earnings, making contracts anchored in non-financial metrics an effective falsification test.

Our benchmark tests use discretionary accruals as the primary measure of earnings management, calculated using the modified Jones (1991) model as implemented by Dechow et al. (1995). We conduct robustness checks using alternative proxies for financial reporting quality, including the Dechow and Dichev (2002) accrual quality measure, real earnings management indicators, and earnings restatements. Peer firm behavior across these dimensions consistently predicts the target firm's reporting choices. For example, real earnings management by peers is positively associated with real earnings management by the target firm, and peer restatements significantly increase both the likelihood and magnitude of restatements at the target firm.

A key identification concern is that target firms may select peers with similar unobserved reporting characteristics, or that earnings management proxies may contain correlated measurement errors across peer firms. To address these concerns, we implement a staggered difference-in-differences analysis around the initial adoption of RPE. We compare the relationship between target firms' discretionary accruals and the median accruals of their RPE-designated peers before and after adoption, holding the peer set constant. We find a significant increase in contagion post-adoption, consistent with formal incentive alignment driving the effect.

To further strengthen causal inference, we construct multiple sets of counterfactual peers that share observable characteristics with the actual peers but are not named in RPE contracts. These comparisons help address concerns about omitted variables or correlated measurement error. We find that only the behavior of the actual RPE-designated peers significantly predicts the target firm's earnings management. In contrast, the behavior of counterfactual peers—matched on observables but excluded from the RPE contract—has no significant effect. These results reinforce our interpretation that formal incentive linkages, rather than industry affiliation or correlated unobservables, drive earnings management contagion.

Our paper contributes to a growing literature that examines the determinants and the economic impact of RPE in executive compensation contracts. Carter, Ittner and Zechman (2009) examine how firms design their relative performance grants. De Angelis and Grinstein (2020) show that RPE can be used as a commitment device to pay CEOs for their revealed relative talent. Albuquerque (2009), Ball, Bonham and Hemmer (2020), Bizjak, Kalpathy, Li and Young (2022), Drake and Martin (2020) and Gong, Li and Shin (2011) examine determinants of RPE peer selection and highlight some of the inefficiencies and biases that can arise in peer selection due to incentives faced by executives and board members. A strand of this literature examines how RPE compensation contracts can affect firms' financial and business decisions. Feichter, Moers and Timmermans (2022) show that competitive aggressiveness increases within the peer group when two firms use each other as peers. Park and Vrettos (2015) and Timmermans (2024) show that greater RPE usage leads firms to take on more idiosyncratic risk. Do, Zhang and Zuo (2022) suggest that RPE contracts provide a tournament-like incentive mechanism that causes poorly performing firms to take on more risk.

Related to our study, Gong, Li, and Yin (2019) examine the role of RPE-based compensation in shaping the timing of earnings announcements. They find that CEOs prefer peers whose earnings are disclosed earlier, allowing them to estimate the performance threshold needed to meet RPE targets and potentially adjust their own reporting discretion accordingly. While this channel emphasizes learning from peer disclosures via timing, our findings suggest a broader contagion mechanism as we do not find consistent evidence that target firms report after their peers. Instead, our results are more consistent with contemporaneous earnings management behavior, suggesting that peer coordination may operate through shared incentives rather than sequential learning.

This paper also contributes to the literature that examines contagion in earnings management. Kedia, Koh, and Rajgopal (2015) document that firms are more likely to begin managing earnings after

the public announcement of a restatement by another firm in the same geographical area, suggesting geographic spillovers. Chiu, Teoh, and Tian (2013) find that a firm is more likely to restate earnings in the future if one of its directors also sits on the board of another firm that restates its earnings, consistent with interlocking boards transmitting aggressive reporting practices. Gleason, Jenkins, and Johnson (2008) find that stock prices react quickly to peer firms' restatement announcements. They show that price declines at peer firms are unrelated to changes in analysts' earnings forecasts but instead reflect investors' concern about earnings management contagion within an industry. Du and Shen (2018) report that the idiosyncratic stock return performance of peer firms is positively associated with the target firm's discretionary accruals, suggesting capital market-induced imitation. Finally, Beatty, Liao, and Yu (2013) show that fraudulent peer reports convince other same-industry firms that investment conditions are different than they appear from their own firm's observations. They show that investments of firms that share the same 3-digit SIC code with a high-profile firm that reports fraudulent earnings reports are greater during the fraud period. In contrast, we document contagion in financial reporting quality that arises specifically through compensation-linked peer incentives, rather than industry affiliation, capital market reactions, or board interlocks.

Our study advances the contagion literature, which often relies on coarse industry-based proxies like SIC codes to identify peer effects, by exploiting mandated disclosures of actual RPE peer groups. [1] This precise identification strategy isolates a novel channel—formal compensation linkages—through which earnings management spreads, revealing that RPE contracts induce strategic mimicry in reporting behavior. Specifically, we document a significant downside of RPE: the pressure to match or exceed peer earnings incentivizes target firms to increase earnings management, thereby diminishing financial

[1] Albuquerque (2009) discusses the importance of identifying correct firms to use in peer groups in empirical tests. Jayaraman, Milbourn and Peters (2021), for instance, find that using the more sophisticated Hoberg and Phillips (2016) classification method to identify peers significantly improves the empirical evidence on the Holmstrom (1982) theory.

reporting quality. Economically, these distortions can erode market transparency, inflate perceived firm performance, and contribute to broader inefficiencies. Our findings thus provide a compelling explanation for prevalent contracting choices, including why many firms avoid adopting RPE and why adopters often favor broad market benchmarks like the S&P 500 to dilute peer-specific incentives and curb such unintended consequences.

The remainder of the paper is organized as follows. Section 2 outlines the hypotheses we test. Section 3 describes the data and our measures of earnings management. Section 4 presents the empirical results, and Section 5 concludes.

2. Conceptual Development and Hypotheses

A large body of literature shows that financial incentives in executive compensation contracts can lead to opportunistic earnings management by executives (Holthausen, Larcker, and Sloan 1995; Bergstresser and Philippon 2006; Burns and Kedia 2006; Efendi, Srivastava, and Swanson 2007; Do, Zhang, and Zuo 2022). Relative Performance Evaluation (RPE) grants, which reward executives based on performance relative to a designated peer group, can similarly create strong incentives for earnings manipulation—particularly when peer firms are themselves engaging in such practices. When peers manage earnings upward, target executives face pressure to match or exceed these inflated benchmarks to secure compensation tied to relative performance.

Beyond the risk of losing compensation, executives face the grave danger of termination if they underperform relative to their peer group, which can further influence managers to manipulate earnings when peer firms manipulate theirs. Prior research suggests that relative performance significantly impacts whether a manager will be dismissed from their position. For instance, Jenter and Kanaan (2015) and DeFond and Park (1999) demonstrate that CEOs are more likely to be dismissed after poor performance relative to their industry benchmarks. Rajgopal, Shevlin, and Zamora (2006) show that a CEO's external

career opportunities depend on their firm's performance relative to the industry. Thus, failing to match or exceed the performance of one's peers can have severe adverse consequences for a manager's career prospects. Additionally, there is evidence that investors and analysts use relative performance with respect to peers when evaluating firms (De Franco, Hope, and Larocque 2015). This additional capital market pressure adds further incentives to outperform peer benchmarks, increasing the likelihood of earnings management by managers.

Given the financial incentives associated with RPE compensation contracts outlined above, the decision to manage earnings is likely influenced by the earnings management decisions of peer firms. Managers face both costs and benefits when considering whether to manipulate earnings, including in the context of relative performance evaluation. If peer firms are manipulating earnings, the manager must decide whether to follow suit. Earnings manipulation carries significant potential costs if discovered, such as reputational damage, dismissal from their position, monetary sanctions, and even potential criminal liability imposed by regulatory bodies like the SEC and the Department of Justice (DOJ). Given these substantial personal costs, a manager must weigh the potential gains from outperforming their peers through earnings manipulation against the risks of punishment if their manipulation is discovered.

From a game theory perspective, the situation often exhibits strategic complementarity, where the optimal response of the target firm's CEO, expecting earnings management in their set of peer firms, is to increase the level of earnings management in their own firm. However, there may also be cases where the interaction leads to strategic substitutability, with the optimal response being to reduce earnings management in reaction to higher earnings management by peers. This is particularly true when the target firm has little chance of outperforming its peers if the cost of earnings management exceeds the benefits. For instance, if the target firm experiences a significant negative idiosyncratic shock to its earnings, making it suboptimal for the target CEO to respond with manipulation. In such instances, the CEO might

choose to manipulate earnings downwards to create a "cookie jar" reserve that could be utilized in the future. The financial incentives and associated costs determine the strength and direction of the target firm's response. For example, the target firm's CEO may be less inclined to manipulate earnings if RPE accounts for only a small portion of their compensation or if the personal costs of manipulation are too severe.

Strategic complementarity in a repeated game of earnings management also depends on the financial incentives and costs faced by peer firms. If there are significant differences in incentives and costs between the target firm and its peers, this could reduce the responsiveness of both parties to each other's earnings management practices. Conversely, when incentives and costs are more closely aligned, we would expect greater complementarity in their responses. We anticipate that the earnings quality of firms that use RPE in their compensation contracts and cross-reference the target firm as a peer would have a greater impact on the earnings quality of the target firm. When peer firms manage earnings to outperform the target firm, managers at the target firm are motivated to inflate their own performance to achieve the benchmarks set in their compensation contracts, resulting in a cycle of earnings management contagion. Significant differences in costs between the peer and target firm can influence this dynamic. If the costs associated with earnings management differ substantially between the firms, the contagion effect may be dampened, as managers weigh the potential benefits against the unique risks and costs their firm faces.

To formally illustrate how an equilibrium can emerge in a dynamic game of earnings management, we outline a stylized model (details are provided in Appendix 1). In this model, the CEO of the target firm is rewarded based on relative performance. We assume that there is only one peer firm for simplicity. The compensation of the CEO in firm *i* in year *t* is $W_{i,t} = \gamma_{i,t} + b_t\left(x_{i,t} - x_{p,t}\right)^+$, where $\gamma_{i,t}$ is the fixed portion of the CEO's compensation, and $x_{i,t}$ and $x_{p,t}$ represent the reported earnings of the target firm and the

peer firm, respectively. The CEO receives a reward when they outperform the peer firm, which occurs when $x_{i,t} - x_{p,t} > 0$. The reward factor for relative out-performance is denoted by b_t .

The target firm *i*'s reported earnings at time *t*, $x_{i,t}$ depend on three components, an industry-wide earnings shock I_t, a firm-specific idiosyncratic shock $\eta_{i,t}$, and earnings manipulation $m_{i,t}$: $x_{i,t} = I_t + \eta_{i,t} + m_{i,t}$. Similarly, the peer firm's earnings are: $x_{p,t} = I_t + \eta_{p,t} + m_{p,t}$. Both the target firm and the peer firm experience the same industry-wide shock to their earnings in any given year. The idiosyncratic shocks $\eta_{i,t}$ and $\eta_{p,t}$ are independent and normally distributed random variables: $\eta_{i,t} - \eta_{p,t} \sim N(\Delta\eta_t, 2\sigma^2)$.

The CEO maximizes their utility (*U*) over time using earnings management strategies: $\max_{\{m_{i,t}\}_{t=0}^{\infty}} \sum_{t=0}^{\infty} \beta^t U(W_{i,t})$. β is the discount factor. The CEO's utility is defined as expected compensation minus the personal cost associated with earnings manipulation: $U(W_{i,t}) = E(W_{i,t}) - c_t m_{i,t}^2$. The costs reflect potential monetary penalties and reputational costs associated with dismissal and potential SEC and DOJ litigations and sanctions. The cost of manipulation is convex, reflecting the increasing likelihood of detection and larger penalties for higher levels of manipulation. To ensure that the manipulation is bounded, we impose the constraint $\sum_{t=0}^{\infty} m_t \leq M$, thereby limiting the cumulative manipulation that firms can engage in over time.

With the boundedness constraint on the aggregate level of manipulation the optimization problem for the CEO in the target firm becomes:

$$\mathcal{L}_i = \sum_{t=0}^{\infty} \beta^t U(W_{i,t}) - \lambda_i(\sum_{t=0}^{\infty} m_{i,t} - M) \qquad (1)$$

where λ_i is the Lagrange multiplier. The CEO at the peer firm faces the same optimization problem. Both the target and peer firm CEOs optimize their manipulation strategies, treating the other's earnings as given. The first-order conditions for the target and peer CEOs are thus symmetric:

$$b_t \Phi\left(\frac{\Delta\eta_t + m^*_{i,t} - m_{p,t}}{\sqrt{2}\sigma}\right) - 2c_t m^*_{i,t} - \frac{\lambda_i}{\beta^t} = 0$$

$$b_t \Phi\left(\frac{-\Delta\eta_t + m^*_{p,t} - m_{i,t}}{\sqrt{2}\sigma}\right) - 2c_t m^*_{p,t} - \frac{\lambda_p}{\beta^t} = 0 \quad (2)$$

In equilibrium, these first-order conditions must hold for both firms. When the idiosyncratic shocks are identical for both firms ($\Delta\eta_t = 0$), we demonstrate (in Appendix 1) that the optimal level of manipulation for both the target and the peer firm is:

$$m^*_{i,t} = m^*_{p,t} = \frac{b_t/2 - \lambda/\beta^t}{2c_t} \quad (3)$$

where $\lambda = \lambda_i = \lambda_p$. The target and the peer firm mimic each other's earnings management practices in this equilibrium. This result is based on expectations whereby the target firm responds in kind to their peer's earnings management behavior without first observing their peer's earnings management behavior.[2] This is consistent with Bagnoli and Watts (2000) who show that correlated earnings management behavior can take place as the interaction between the target firm and its peers is a repeated game.[3] The optimal manipulation level increases with the reward factor b_t and decreases with costs c_t and the shadow price of the constraint λ.

[2] Even when the peer firm's manipulation m_p is fixed exogenously—that is, the peer does not react to the target—contagion still arises as long as $m_p < \frac{b}{c\sigma\sqrt{2\pi}}$. The target firm then treats m_p as given and chooses its own manipulation by balancing the associated costs and benefits.

[3] Bagnoli and Watts (2000) argue that "…if a firm is a member of a group of firms that will be compared by investors and creditors, it will manage its earnings simply because it expects its rivals to do the same…" even if there is uncertainty regarding how its peers will behave. The expectation that, in equilibrium, the peer firms will manage earnings to enhance their firm values would lead to similar earnings management behavior at the target firm over time.

If the target firm receives a significantly higher idiosyncratic shock to its earnings than the peer firm ($\Delta\eta_t$ being much greater than zero), the equilibrium in this case is:

$$m_{i,t}^{*} = \frac{b_t - \lambda_i/\beta^t}{2c_t};\ m_{p,t}^{*} = -\frac{\lambda_p/\beta^t}{2c_t} \tag{4}$$

Conversely, if the peer firm receives a significantly higher positive idiosyncratic shock relative to the target firm (η_t being much less than zero), the equilibrium becomes:

$$m_{i,t}^{*} = -\frac{\lambda_i/\beta^t}{2c_t}, m_{p,t}^{*} = \frac{b_t - \lambda_p/\beta^t}{2c_t} \tag{5}$$

In both cases of significant positive or negative earnings shocks, we observe a divergence in the direction of manipulation, implying a breakdown in the correlation between the target and peer firm's earnings management. Intuitively, when faced with large negative idiosyncratic shocks, significant amounts of manipulation would be required to catch up with and outperform the peer firm. As this is very costly for the target firm's CEO, it is optimal for them to not mimic the peer firm's earnings management behavior when the target firm experiences large negative earnings shocks. The same rationale should also apply to the peer firm's management.

The first two hypotheses are motivated by the stylized results of the model. In equilibrium, we expect a positive relationship between the target and the peer firm's earnings management, implying a positive correlation in measures of earnings management:

H1*: Firms are more likely to engage in earnings management when the peer firms used in relative performance evaluation also engage in earnings management.*

The earnings manipulation relationship weakens when there are large idiosyncratic shocks to earnings of either the target firm or its peers. Since our focus is to model the earnings management

behavior of the target firm, we are primarily concerned about the impact of large earnings shocks to the target firm on contagion in financial reporting quality:

> H2*: The similarity in the earnings quality measures of a target firm and its peers will be lower in periods when the target firm experiences substantially different earnings shocks from the peer firms.*

To empirically test the first hypothesis, we examine the base-level correlation in earnings management between the target and the peer firms. We conduct a number of tests to address endogeneity concerns related to peer selection and measurement error in earnings management. To test the second hypothesis, we use absolute differences in accounting and price-based performance measures to assess how the base-level relationship changes when there is divergence in performance.

While our stylized model demonstrates how equilibrium outcomes of strategic complementarity and substitution can emerge from performance shocks, it is subject to limitations. For tractability, we assume that the financial incentives and manipulation costs (parameters b and c) are symmetric across firms. This simplification abstracts from important heterogeneity in real-world settings. Although a closed-form solution with asymmetric parameters is intractable, numerical simulations indicate that cross-firm differences in incentives and costs materially affect the equilibrium: when a target firm's incentives or costs diverge sharply from its peers', managers are less likely to copy peer earnings management, leading to substitutability. For instance, a firm under active SEC investigation may face higher perceived costs and thus refrain from emulating peers not subject to similar scrutiny. Accordingly, our third hypothesis examines the role of firm-specific differences in the costs and benefits of earnings management in shaping contagion effects:

H3*: The similarity in earnings quality between a target firm and its RPE-designated peers weakens when the target firm faces elevated costs or diluted incentives to mimic peer behavior.*

To test the third hypothesis, we focus on frictions that proxy for variation in incentives and costs associated with earnings manipulation. First, we assess whether contagion weakens when the target firm is under recent SEC investigation—capturing elevated enforcement risk. Second, we examine whether contagion diminishes when RPE contracts benchmark performance against broad market indices (e.g., the S&P 500) rather than a concentrated peer set. Index benchmarking diffuses the economic relevance of any one peer's behavior, weakening the financial incentive to mimic individual firms. Third, we examine if the contagion effect is lower when firms use non-financial performance metrics in RPE contracts. While some contracts use earnings-based measures that are directly susceptible to earnings management, others are anchored in non-financial metrics—such as customer satisfaction, that are comparatively insulated from strategic earnings management. If contagion reflects strategic incentives to mimic peer firms' earnings manipulation, then we should observe stronger effects when RPE is explicitly tied to earnings-based metrics.

Identifying peer effects in corporate earnings management is empirically challenging as earnings management is an endogenous choice variable. The selection of peers by the target RPE firm is also endogenous and there could be unobserved factors that drive both peer selection and the earnings management decision. Unlike many studies that proxy for peers using industry classification and firm size, we identify actual peers from proxy statements exploiting the 2006 SEC mandate to disclose details of relative performance grants. Using actual peers allows us to control for industry and firm fixed effects and isolates RPE grants as the channel through which peers' behavior affects the firm's earnings reporting quality. By doing this, we can show that firms' contracting practices with management have a direct impact on earnings management decisions and contagion in financial reporting quality.

3. Data

Information about peer groups used in this study comes from Incentive Lab. The dataset contains information from DEF 14A proxy statements on the various aspects of stock, option and cash grants awarded to CEOs and other senior executives. Incentive Lab database covers S&P 1,500 firms for the years 1998 to 2016. We focus on the period after 2006. In that year, the SEC implemented new disclosure rules requiring firms to provide details on performance targets used in executive compensation contracts. Starting in 2006, we can obtain details about the characteristics of the relative performance evaluation (RPE) targets including the lists of peer firms.

Explicit relative performance awards have become a critical component of executive pay. As Figure 1 shows, there has been a steady increase in the use of RPE from 2006 to 2016. A significant percentage of the firms in the dataset use RPE in their executive compensation contracts. In 2016, for instance, 50% of the firms used some form of RPE. On average, RPE grants account for 38% of fair value of all grants awarded and 32% of the total compensation of the CEOs in 2016. The characteristics of the performance benchmark to evaluate relative performance are also specified in the dataset. Around 70% of the firms that implement RPE use peer firms as benchmarks.

On average, each firm has fifteen peers in a given year. There is significant turnover in selected peers over time. 14% of the peers are added or dropped from the peer list each year. Incentive Lab also provides information on the metrics used for performance evaluation. The majority of performance metrics used are either a firm's stock return or an accounting performance measure such as a firm's EPS. Stock return is used as a metric in 61% of the RPE grants. In majority of the contracts, the median peer is specified as the target threshold.

Since we are interested in how the earnings quality of a firm is impacted by the earnings quality of its peers, we limit our sample to the set of firms that utilize RPE compensation contracts and in

particular, to the subset of firms that use a set of peer firms to assess relative performance.[4] After matching with CRSP and Compustat, our final sample consists of 323 firms and 1,466 observations over the 2006 to 2016 time period.

Our principal measure of financial reporting quality is discretionary accruals using the modified Jones (1991) measure proposed by Dechow, Sloan, and Sweeney (1995). We compute discretionary accruals (DAM) by subtracting nondiscretionary accruals from total accruals. To do so, we run the following cross-sectional regression:

$$TA_{i,t} = b_1\left(\frac{1}{AT_{i,t-1}}\right) + b_2\left(\Delta REV_{i,t} - \Delta REC_{i,t}\right) + b_3 PPE_{i,t} + \varepsilon_{i,t} \qquad (6)$$

where $TA_{i,t}$ is total accruals in year t, $AT_{i,t-1}$ is total assets in year $t-1$, $\Delta REV_{i,t}$ is the change in revenues from year $t-1$ to year t scaled by total assets in year $t-1$, $\Delta REC_{i,t}$ is the change in net receivables from year $t-1$ to year t scaled by total assets in year $t-1$, and $PPE_{i,t}$ is the gross property plant and equipment in year t scaled by total assets in year $t-1$. Total accruals in year t are computed as:

$$TA_{i,t} = \frac{\Delta CA_{i,t} - \Delta CL_{i,t} - \Delta Cash_{i,t} + \Delta STD_{i,t} - Dep_{i,t}}{AT_{i,t-1}} \qquad (7)$$

where $\Delta CA_{i,t}$ is the change in current assets, $\Delta CL_{i,t}$ the change in current liabilities, $\Delta Cash_{i,t}$ the change in cash and cash equivalents, $\Delta STD_{i,t}$ the change in debt included in current liabilities, and $Dep_{i,t}$ the depreciation and amortization expense.

We estimate Equation (6) on an industry-year basis, where industry is defined using the first two digits of the SIC code. We require the number of firms in an industry in any given year to be at least ten and all three independent variables to be available to run the regression. Since the independent variables

[4] Although some firms use index level returns or industry level performance measures in their RPE compensation contracts, such firms would not be included in our sample.

capture how changes in the firm's economic circumstances influence non-discretionary accruals, the residuals from this regression proxy for discretionary accruals.

Although the discretionary accrual measure described in Equation (6) is our main variable of interest, we also use a number of alternative real earnings management measures. To receive RPE grants, managers could overstate earnings through overproduction, channel-stuffing and reducing discretionary expenses. Following Huang et al. (2020), we estimate a company's degree of abnormal discretionary expenses and abnormal production costs and construct an aggregate index combining them. Following Huang et al. (2020) and Kothari et al. (2016), we run the following regression to estimate abnormal discretionary expenses:

$$DiscExp_{i,t} = b_0 + b_1 DiscExp_{i,t-1} + b_2\left(\frac{1}{AT_{i,t-1}}\right) + b_3 Sales_{i,t} + \varepsilon_{i,t} \quad (8)$$

where $DiscExp_{i,t}$ is the sum of advertising expense, R&D expense and SG&A expense, scaled by lagged total assets; $DiscExp_{i,t-1}$ is its lagged value; $AT_{i,t-1}$ is total assets in year $t-1$; $Sales_{i,t}$ is sales in year t scaled by lagged total assets. We estimate the model above each year. The residual reflects a firm's deviation from the cross-sectional mean for that year. After subtracting the mean value of the residual across all years for the firm, we obtain abnormal discretionary expenses for the firm.

Following Huang et al. (2020) and Kothari et al. (2016), we run the following regression to estimate abnormal production costs:

$$Prod_{i,t} = b_0 + b_1 Prod_{i,t-1} + b_2\left(\frac{1}{AT_{i,t-1}}\right) + b_3 Sales_{i,t} + b_4 \Delta Sales_{i,t} + b_5 \Delta Sales_{i,t-1} + \varepsilon_{i,t} \quad (9)$$

where $Prod_{i,t}$ is the sum of COGS and change in inventory during year t scaled by lagged total assets; $Prod_{i,t-1}$ is its lagged value; $AT_{i,t-1}$ is total assets in year $t-1$; $Sales_{i,t}$ is sales in year t scaled by lagged total assets; $\Delta Sales_{i,t}$ is sales growth scaled by lagged total assets; $\Delta Sales_{i,t-1}$ is the lagged value of $\Delta Sales_{i,t}$. We estimate the model each year. The firm-year residual minus the average of the residual

across all years for the corresponding firm yields abnormal production costs for a given firm. Following Huang et al. (2020), we combine abnormal discretionary expenses and abnormal production costs to estimate a firm's overall real earnings management.

In addition to these measures, we also use in our analyses three additional financial reporting quality measures commonly utilized in the literature. The first of these is a financial reporting quality measure that captures the likelihood that a firm will restate its financial statements (Dechow, Ge, and Schrand, 2010). *Restate* is a dummy variable set to 1 if a fiscal year overlaps with an identified restatement period as recorded by the Audit Analytics "Non-Reliance" database, and zero otherwise. The second is the *Restatement Amount*, which is the natural logarithm of the cumulative misstatement amount for a restatement event. The third additional measure of financial reporting quality we utilize is the Dechow and Dichev (2002) quality of accruals. Following Dechow and Dichev (2002), we run the firm-specific regressions as follows:

$$\Delta WC_{i,t} = b_0 + b_1 CFO_{i,t-1} + b_2 CFO_{i,t} + b_3 CFO_{i,t+1} + \epsilon_{i,t} \qquad (10)$$

where $\Delta WC_{i,t}$ is change in working capital, measured as $\Delta WC = \Delta Accounts\ Receivable + \Delta Inventory - \Delta Accounts\ Payable - \Delta Taxes\ Payable + \Delta Other\ Assets$, $CFO_{i,t-1}$ is one-period lag cash flow from operations, $CFO_{i,t}$ is cash flow from operations in the current year, and $CFO_{i,t+1}$ is cash flow from operations in the next year. The DD accruals are computed as the standard deviation of these residuals. A higher standard deviation indicates lower quality of earnings.

In all our analyses, we control for several firm characteristics commonly used in the literature. These firm level variables are obtained from CRSP and Compustat databases. *Size* is the natural logarithm of total assets. *BM* is the book value of equity divided by market value of equity. *ROA* is earnings before extraordinary items scaled by total assets. *EarningsVol* is the volatility of earnings over the past 3 years. *Leverage* is sum of market value of equity and book value of liabilities scaled by market value of equity.

Return and *Return3y* are annual and annualized 3 year holding period returns. *Std* is annualized volatility computed using monthly stock returns over the past 3 years. *Beta* is the CAPM beta also computed using monthly returns over the past 3 years. *HHI* is the Herfindahl measure of customer concentration computed from Compustat "Customer Segments" database. It is computed as the sum of the square of sales to distinct customers as a percentage of revenues. *Institutional ownership* is the shares held by institutions divided by total shares outstanding. The data for institutional shares are obtained from Thomson Reuters and the data for total shares outstanding come from CRSP.

All the variables used in this paper are defined and explained in further detail in Table 1. In Table 2, we report the summary statistics of these variables for three samples. Panel A presents summary statistics for the sample of firms that use relative performance evaluation in executive compensation contracts. This is the sample of firms that we use in our analyses. Panel B presents summary statistics for all firms with data available in both the CRSP and Compustat databases. Panel C presents summary statistics for the S&P 1500 firms with data available in both the CRSP and Compustat databases. The latter sample is the sample of firms covered by Incentive Lab and includes firms that do not use RPE in executive contracts. As we would expect, compared to all the firms in the CRSP-Compustat universe, RPE firms are, on average, larger, and more profitable. RPE firms also have slightly higher leverage than the Incentive Labs sample average and have a slight growth tilt. Table 2 also shows that there is significant cross-sectional variation in RPE firm characteristics.

4. Empirical Results

4.1 The relation between earnings quality of RPE firms and their peers

We begin with a univariate analysis of how a given firm's earnings quality is correlated with the earnings quality of its peers. For each firm in our dataset, we compute the discretionary accruals using the modified Jones measure (*DAM*). We do the same for the firm's peers and compute the median accruals quality

across the firm's peers (*Med Peer DAM*). We focus on the median peer performance, since, as mentioned earlier, a CEO is typically awarded grants based on the relative performance of her firm compared to the median performance of its peers.[5] We sort firms each year based on the target firm's DAM and form quintile portfolios. We then compute average Med Peer DAM values as well as averages for various firm characteristics for each quintile portfolio.

As the target firm's discretionary earnings management increases, there is a monotonic increase in the median peer firm's discretionary earnings management as well. Table 3 reports the difference between the highest and lowest discretionary accrual quintiles for each characteristic and the *t-Value* column reports the t-statistics of this difference. The difference in Med Peer DAM between the high ('H') minus low ('L') portfolios is statistically significant. Moreover, this relationship does not appear to be a simple function of other firm characteristics such as the book-to-market ratio, firm size, return on assets, earnings volatility, stock return, or leverage. The differences in these firm characteristics for the high minus low portfolios are all insignificant.

Next, we examine the relationship between target firm and peer earnings quality in a multivariate regression controlling for various firm characteristics. We run the following baseline regression:

$$DAM_{i,t} = \alpha + \theta Med\ Peer\ DAM_{i,t} + \beta X_{i,t} + \gamma_t + \delta_j + \varepsilon_{i,t} \qquad (11a)$$

In Equation (11a) i, j, and t denote firm, industry, and year, respectively. $X_{i,t}$ are firm level controls described in Table 1 that are commonly used in explaining earnings management behavior (Du and Shen, 2017). Coefficients in the secondstage of modified Jones accruals model regressions can be biased when there is non-zero covariance between the explanatory variables in the stage 1 regression and the control variables in the stage 2 regression. To control for this potential bias, we follow a solution suggested by

[5] The majority of RPE grants in our sample (roughly 70%) set the median as the target goal. Within our theoretical framework, in the absence of shocks, we would expect the firm's performance ranking to align with the target set by the company. We show that our results are robust when using the average peer discretionary accruals measure.

Chen, Hribar, and Melessa (2018). Specifically, we include all the stage 1 regressors in the stage 2 regression (Equation 11a) as additional controls. All of the panel data regressions in the paper using discretionary accruals incorporate this methodology.

In Equation (11), γ_t controls for time (year) fixed effects and δ_j controls for industry fixed effects. We include time fixed effects to control for the impact of macroeconomic factors that could potentially lead to system-wide earnings management. Industry fixed effects control for all time-invariant industry related factors that could affect financial reporting quality for both the peer and the target firms. We would expect to find cross-sectional variation in earnings management across different industries. Since peer firms are selected mainly from the same industry as the target firm, peer effects could be driven by the common industry shocks shared by the RPE firm and its peer firms.

In Equation (11a), we are interested in the coefficient θ which captures the effect of median peer earnings quality. The results from this regression are reported in column (1) of Table 4. The coefficient on the Med Peer DAM variable is both statistically and economically significant. A one standard deviation increase in the median peer discretionary accrual results in close to a 0.86 standard deviation increase in the discretionary accrual of the target firm. These results are consistent with our first hypothesis that earnings management by peers leads to greater earnings management by the target firm when performance goals in executive compensation contracts are set relative to the performance of the firm's peers.

Next, we show that our main result of peer effects in earnings management is robust to different specifications. First, we control for changes in median industry earnings quality. While industry fixed effects control for time-invariant levels of earnings quality at the industry level, a number of papers show evidence of industry-wide variation in earnings management.[6] We control for median industry earnings quality (Med Industry DAM) by running the following regression:

[6] For example, Kedia, Koh, and Rajgopal (2015) show evidence of industry-wide contagion in earnings management. They link contagion to enforcement activity by the SEC.

$$DAM_{i,t} = \alpha + \theta Med\ Peer\ DAM_{i,t} + \partial Med\ Industry\ DAM_{j,t} + \beta X_{i,t} + \gamma_t + \delta_j + \varepsilon_{i,t} \quad (11b)$$

The results are reported in column (2) of Table 4. Consistent with the findings in the literature, the coefficient on the Med Industry DAM variable is significant. The effect of the median peer earnings quality remains significant after controlling for industry wide earnings management. In other words, the impact of peers' financial reporting quality on the financial reporting quality of the target firm captures information regarding earnings management contagion above and beyond what is explained by industry effects.

To control for any time-varying industry effects, we include dummy variables ($\gamma_t \times \delta_j$) that interacts time and industry fixed effects. These fixed effects capture all time-varying heterogeneity within an industry including industry specific changes in technology and management, as well as changes in economic growth and volatility. We use the following regression specification:

$$DAM_{i,t} = \alpha + \theta Med\ Peer\ DAM_{i,t} + \beta X_{i,t} + \gamma_t \times \delta_j + \varepsilon_{i,t} \quad (11c)$$

The results from this specification are reported in column (3) of Table 4. The coefficient on the Med Peer DAM variable again remains significant.

We include firm fixed effects to control for firm specific factors that affect both the earnings management of the firm as well as the firm characteristics that could impact earnings management. Firm fixed effects would also control for omitted firm level factors that could affect the calculation of discretionary accruals. We run the following regression:

$$DAM_{i,t} = \alpha + \theta Med\ Peer\ DAM_{i,t} + \beta X_{i,t} + \gamma_t + \vartheta_i + \varepsilon_{i,t} \quad (11d)$$

In equation (11d), ϑ_i are firm fixed effects. The results are reported in column (4) of Table 4. After controlling for firm specific factors, the effect of peer earnings quality, once again, remains significant.

Next, we include firm fixed effects along with the interaction of industry and time fixed effects. This setting controls for potential peer selection biases that could result from time invariant firm characteristics as well as any time varying industry effects simultaneously. We run the following regression:

$$DAM_{i,t} = \alpha + \theta Med\ Peer\ DAM_{i,t} + \beta X_{i,t} + \gamma_t \times \delta_j + \vartheta_i + \varepsilon_{i,t} \quad (11e)$$

In Equation (11e), ϑ_i are firm fixed effects, while the $\gamma_t \times \delta_j$ term captures the interaction of time and industry fixed effects. The results are reported in column (5) of Table 4. After controlling for firm-specific factors as well as the interaction of time and industry fixed effects, the effect of peer earnings quality on target firm financial reporting quality again remains significant.

We conduct a robustness test by replacing the median discretionary accruals measure of the target firm's peers with the average value of the discretionary accruals measure of the peer firms (*Avg Peer DAM*). We run the following regression with industry and time fixed effects:

$$DAM_{i,t} = \alpha + \theta Avg\ Peer\ DAM_{i,t} + \beta X_{i,t} + \gamma_t + \delta_j + \varepsilon_{i,t} \quad (11f)$$

In Equation (11f), γ_t captures time fixed effects while δ_j captures industry fixed effects. The results are reported in column (6) of Table 4. The coefficient on *Avg Peer DAM* is economically and statistically similar to the coefficient on *Med Peer DAM* in column (1).

Finally, we conduct another robustness test by estimating the coefficient of interest using target-peer-year level regressions. The results are reported in column (7) of Table 4. The dependent variable $DAM_{i,t}$ is the same as in the previous specifications reported in columns 1-6. The independent variable is $Peer\ DAM_{i,p,t}$ which is the discretionary accrual measure of a given peer (*p*) firm. We run regression 11 (g) with industry and time fixed effects using all target-peer pairs in a given year:

$$DAM_{i,t} = \alpha + \theta\ Peer\ DAM_{i,p,t} + \beta X_{i,t} + \gamma_t + \delta_j + \varepsilon_{i,t} \quad (11g)$$

Overall, the results are qualitatively similar and statistically significant. Although the average economic significance is lower, these results suggest that our main findings are robust to utilizing target-peer-year level regressions.

We also examine the impact of the metrics used in the RPE compensation contracts on the contagion effect between the target and peer firms. When focusing exclusively on accounting metrics, we find a significantly higher (lower) contagion effect for earnings-based metrics (non-financial performance metrics).

Results in Section 4.1, presented in Tables 3 and 4, confirm our prediction in Hypothesis 1 since we verify that firms are more likely to engage in earnings management when the peer firms used in relative performance evaluation also engage in earnings management.

4.2 The impact of performance shocks and the cost of earnings manipulation on FRQ contagion

Hypothesis 2 predicts that when there are large differences in the earnings shocks experienced by the target and the peer firms, we should expect to observe a divergence in the direction of earnings manipulation by the target and the peer firms. This leads to a breakdown in the correlation between the target and peer firms' earnings manipulation choices.

To test hypothesis 2, we first investigate the impact of performance differences between the target firm and each of its peers on the correlation of their financial reporting quality. Specifically, in the first two columns of Table 5, we run target-peer-year level regressions of the target firm's discretionary accrual measure (*DAM*) on each of the target firm's peers' discretionary accrual measures (*Peer DAM*) as well as the interaction of Peer DAM with the performance differential between the target firm and the peer firm in that period.

We measure firm level performance using two proxies: one using an accounting-based performance measure (return on assets: *ROA*) and the second using a market-based performance measure (*Stock Return*). Every period, we calculate the absolute value of the performance differential between the target firm and each of its peers using the two performance metrics. The absolute value difference between *ROA* and *Stock Return* values of the target firm and its peer each year is *Abs Difference ROA* and *Abs Difference Return*, respectively.

We then estimate the marginal impact of the absolute performance difference between the target and the peer firms on the strength of the contagion of financial reporting quality using the following specification:

$$DAM_{i,t} = \alpha + \theta Peer\ DAM_{i,p,t} + \partial Peer\ DAM_{i,p,t} \times Performance_{i,p,t} + \beta X_{i,t} + \gamma_t + \delta_j + \varepsilon_{i,t} \quad (12)$$

The coefficient of interest is the interaction of the performance measure with the median discretionary accrual value of the peer firms. In column (1) of Table 5 *Performance* is calculated using an accounting based measure, $Abs\ Difference\ ROA_{i,p,t}$, while in column (2) we calculate *Performance* using a stock return based measure, $Abs\ Difference\ Return_{i,p,t}$. Both models (1) and (2) control for industry and year fixed effects.

The coefficients on both interaction terms, where $Peer\ DAM_{i,p,t}$ is interacted with either $Abs\ Difference\ ROA_{i,p,t}$ or $Abs\ Difference\ Return_{i,p,t}$, are negative and statistically significant. These results suggest that when target firms experience earnings shocks that are significantly different from their peers, they are less likely to mimic their peers. Overall, results in columns (1) and (2) of Table (5) lend support to Hypothesis 2.

We also examine how differences in performance between the target firm and its peers shape their strategic interaction using an alternative approach to measuring earnings shocks. Specifically, we proxy for firm-specific earnings shocks using three-quarter cumulative earnings surprises, calculated from the differences between realized earnings and analysts' estimates for the first three quarters of the fiscal year. While we cannot directly observe the underlying shocks experienced by peer firms, these cumulative surprises provide a credible signal of firm-specific performance. From the target firm's perspective, such peer information is critical in determining whether to engage in earnings management. When both the target and its peers are either above or below expectations, the resulting equilibrium is likely to resemble the contagion effects previously documented. In contrast, when performance outcomes diverge sharply and the target firm performs well while peers underperform, or vice versa. Any common industry effects are unlikely to explain such divergence, and we would expect the contagion effect to weaken. In these cases, the target firm has a lower incentive to mimic its peers. If it is already outperforming, it may delay earnings manipulation to future periods. If it is significantly underperforming, it may similarly postpone manipulation, believing that it cannot realistically catch up within the evaluation window. Both scenarios imply a breakdown or reversal in the usual contagion pattern.

To test this idea, we construct the *Earnings Divergence Dummy*, which captures whether the target firm experiences a materially different earnings shock from its peers. We begin by calculating quarterly earnings surprises for both target and peer firms based on analyst forecasts and actual earnings, summed over the first three quarters of the year. We then compute the absolute difference between the target firm's cumulative surprise and the median cumulative surprise of its peer group. This difference is standardized by the cross-sectional standard deviation of such target-minus-median differences. The *Earnings Divergence Dummy* equals one if this standardized gap exceeds one standard deviation in either direction,

and zero otherwise. This binary measure identifies instances of substantial divergence in earnings performance, where strategic substitution rather than mimicry is more likely to occur.

We estimate the following model at the target-year level:

$$DAM_{i,t} = \alpha + \theta Med\ Peer\ DAM_{i,t} + \partial Med\ Peer\ DAM_{i,t} \times Earnings\ Divergence\ Dummy_{i,t} + \beta X_{i,t} + \gamma_t + \delta_j + \varepsilon_{i,t} \quad (13)$$

The results are reported in column (3) in Table 5. The coefficient on the interaction term, where $Med\ Peer\ DAM_{j,t}$ is interacted with $Earnings\ Divergence\ Dummy_{i,t}$ is negative and statistically significant. This result suggests that when target firms experience idiosyncratic earnings shocks that are significantly different from their peers, they are less likely to mimic their peers for strategic reasons. It is difficult to attribute this result to common shocks, but supports the main them of the paper, that peer-based RPE contracts drive strategic interaction between target and peer firms.

To further verify our findings, we analyze the impact of experiencing extreme earnings surprises (*EES*) by the target firm on financial reporting quality contagion. *EES-dummy* is equal to one if the target firm's standardized unexpected earnings (*SUE*) ranks either in the top 5th (10th) percentile or in the bottom 5th (10th) percentile of all *SUE*'s in the cross section of all stocks in our sample in that given year. In Appendix Table A1, columns (1) and (2) report the regression results where the *EES-Dummy* is equal to 1 if the target firm's earnings surprise falls into either the top or the bottom 5th (10th) percentile of the earnings surprise in the sample. The coefficient on the $Med\ Peer\ DAM_{j,t} \times EES - Dummy_{i,t}$ is negative and statistically significant in both specifications suggesting that when target firms experience large idiosyncratic earnings shocks, rather than mimic their peers their earnings management choices deviate from them.

Finally, in column (4) of Table 5 we investigate how costs associated with earnings manipulation impact contagion in financial reporting quality. In Hypothesis 3, we predict that FRQ contagion will be

lower when the target and peer firms face different financial benefits and costs from earnings management. We test this hypothesis by utilizing a proxy to measure the cost of earnings management. Specifically, we use an indicator variable that takes on a value of one for firms that have been investigated by the SEC in the previous three years and zero otherwise: *SEC Investigation Dummy* is equal to 1 if the target firm was investigated by the SEC at any point in the prior 3 years. When this indicator variable takes on a value of one this signals higher costs of earnings management for the firm due to closer scrutiny and potential penalties.

To assess our hypothesis, we use the model in equation 14 and focus on ∂ which is the coefficient on the interaction of the variable of interest (*SEC Investigation Dummy*) with the median discretionary accrual value of the target firm's peer firms ($Med\ Peer\ DAM$):

$$DAM_{i,t} = \alpha + \theta Med\ Peer\ DAM_{i,t} + \partial Med\ Peer\ DAM_{j,t} \times SEC\ Investigation\ Dummy_{i,t} + \beta X_i + \gamma_t + \delta_j + \varepsilon_{i,t} \quad (14)$$

The results reported in column (4) of Table 5 show that contagion in FRQ is lower for firms that have been investigated by the SEC as these firms' earnings management activities are more likely to be discovered, and they are more likely to face harsher penalties if discovered. The coefficient on the $Med\ Peer\ DAM_{j,t} \times SEC\ Investigation\ Dummy_{i,t}$ term is negative and statistically significant indicating that contagion of financial reporting quality is weaker for firms where the economic costs to manipulate financial reporting quality are higher. Managers under close scrutiny find it costly to mimic their peers.

These results are consistent with a strategic complementarity mechanism: managers increase earnings manipulation when peers do the same, especially when incentives are aligned and performance levels are comparable. However, when performance divergence is large, peer incentives are diluted, or

enforcement risk is high, the link weakens—suggesting strategic substitution, whereby managers pull back from mimicry due to elevated costs or reduced benefits.

4.3 Impact of the use of broad market benchmarks on FRQ contagion

In this section, we examine whether financial reporting quality (FRQ) contagion under RPE contracts weakens when target firms benchmark performance against a broad market index rather than a narrow set of named peers. As outlined in Hypothesis 3, the economic incentives to mimic peer behavior should be diluted in such settings, since no individual firm's reporting behavior materially affects the relative performance outcome. This test therefore evaluates the incentive dilution channel, a core component of strategic substitutability in our framework.

In Table 6, we analyze target firms whose RPE contracts benchmark against the S&P 500 index. We estimate the effect of broad-index peer behavior on the target firm's discretionary accrual measure (DAM), using three proxies for the S&P 500 benchmark: the median DAM for the S&P 500 firms ($Med\ S\&P\ 500\ DAM_{i,t}$ in column 1), the market capitalization weighted average DAM of S&P 500 firms ($Mkt\ Cap\ weighted\ S\&P500\ DAM_{i,t}$ in column 2), and the asset value weighted average of DAM of S&P 500 firms ($Assets\ weighted\ S\&P500\ DAM_{i,t}$ in column 3). The specification is as follows:

$$DAM_{i,t} = \alpha + \theta\ S\&P\ 500\ Index\ Based\ DAM_{i,t} + \beta X_{i,t} + \gamma_t + \delta_j + \varepsilon_{i,t} \qquad (15)$$

If benchmarking against a broad index dilutes incentives to mimic specific firms, we should observe a weaker association between the S&P 500 DAM and the target firm's DAM.

Consistent with this prediction, we find no statistically significant relationship between any of the index-based DAM measures and the discretionary accruals of the target firm. These findings support the notion that FRQ contagion is more likely when compensation contracts reference a small, salient set of peers—facilitating strategic complementarity. In contrast, when performance is assessed against a diffuse group like the S&P 500, managers are less able, and less incentivized,to strategically mimic individual

constituents. These results lend additional support to Hypothesis 3 by demonstrating how variation in benchmarking architecture directly shapes the strength of the contagion channel.

4.4 Impact of the use of different performance metrics in RPE contracts on FRQ contagion

There is considerable heterogeneity in how firms design relative performance evaluation (RPE) contracts, particularly in the type of performance metrics they rely on. While some contracts use earnings-based measures that are directly susceptible to earnings management, others are anchored in non-financial metrics—such as customer or employee satisfaction—that are comparatively insulated from strategic earnings management. This distinction is critical for understanding the mechanism behind financial reporting contagion. As outlined in Hypothesis 3, if contagion reflects strategic incentives to mimic peer firms' earnings manipulation, then we should observe stronger effects when RPE is explicitly tied to earnings-based metrics. By contrast, firms evaluated on non-earnings-based measures have little reason to engage in such mimicry, making them a natural control group in a falsification test. In this section, we leverage this variation in contract design and conduct grant-level analyses to test whether the contagion effect is concentrated among firms whose RPE incentives are most directly tied to accounting outcomes.

We separately examine two categories of metrics: earnings-based performance metrics and non-financial metrics. We run our baseline specification at the grant level, interacting the peer earnings management measure with dummy variables set to one for each of the metric categories. The category we exclude (which becomes the comparison group) is all other financial metrics. We use the model in equation 16 and focus on the interaction term of the performance metric type (*Performance Metric Dummy*) with the median discretionary accrual value of the peer firms ($Med\ Peer\ DAM$):

$$DAM_{i,g,t} = \alpha + \theta Med\ Peer\ DAM_{i,t} + \partial Med\ Peer\ DAM_{i,t}\ X\ Performance\ Metric\ Dummy_{i,g,t} + \beta X_{i,t} + \gamma_t + \delta_j + \varepsilon_{i,t} \quad (16)$$

The regression we study in Equation (16) is at the RPE grant level with each *g* corresponding to a separate RPE contract. The results are reported in Table 7. We use *Earnings Metric Dummy* in column (1) and with *Non-Financial Metric Dummy* in column (2). In column (3) we control for the two dummy variables simultaneously.

When we exclusively focus on earnings-based metrics, the loading on the interaction term is positive and statistically significant. This result, reported in column (1), indicates that the impact of earnings-based metrics differs from that of other performance metrics and that contagion in financial reporting quality is stronger for target firms that utilize earnings-based incentives for their managers. We use non-financial performance metrics as a falsification test. If the contagion effect of earnings management arises from the compensation channel, the impact of non-financial metrics should be zero. In column (2), we interact the peer earnings management measure with a dummy variable set to one for grants that use non-financial performance metrics (*Non-Financial Metric Dummy*). The coefficient on the interaction term is negative and significant, suggesting that the impact of non-financial performance metrics is substantially lower compared to financial performance metrics. It is important to note that the negative coefficient does not necessarily imply a negative correlation between the earnings management of the target firm and its peer firms. The total effect of using non-financial performance metrics is the sum of the coefficients on the peer earnings management variable and the interaction term. The net effect is close to zero and is not statistically significant. We further verify our findings in column (3) by including both dummy variables as well as their interactions with the median peer DAM variable. The coefficients on the respective interaction terms are economically and statistically unchanged compared to our findings in columns (1) and (2).

4.5 RPE initiations in compensation contracts

Our analyses could suffer from a potential endogeneity problem in selecting peers. Target firms may choose peers with similar financial reporting quality to theirs, which could influence our empirical findings. Similarly, earnings management measures are estimated with error, and if these errors are correlated across selected peers based on omitted variables, this could lead to the appearance of contagion when none exists.

We carry out two additional analyses to address these concerns. First, we demonstrate that introducing RPE into compensation contracts for the first time leads to an increase in contagion using a differences-in-differences analysis. Specifically, we examine the relationship between the target firm DAM and the median DAM of its peers a year before and a year after RPE adoption using a difference-in-difference specification. If our hypothesis is correct, we would expect a significant increase in the strength of the relationship between the earnings management behavior of the target firm and that of its peer firms after the target firm adopts RPE-based compensation contracts. For the year before a target firm adopts RPE, we use the same set of peers the target firm chooses in one year after adoption. We estimate the following difference-in-difference specification:

$$DAM_{i,t} = \alpha + \theta_1 Med\ Peer\ DAM_{i,t} + \theta_2 After_t + \theta_3 After_t \times Med\ Peer\ DAM_{i,t} + \beta X_{i,t} + \gamma_t + \vartheta_i + \varepsilon_{i,t} \quad (17)$$

In Equation (17), $X_{i,t}$ are firm level controls, ϑ_i and γ_t are the firm and year fixed effects described earlier. The variable *After* takes on a value of one for the year after a target firm adopts RPE. The variable of interest is the interaction term *After*×*Med Peer DAM* which captures the initiation of the contagion effect after the target firm adopts RPE in executive compensation. In Table 8 column (1), we report the main results of this test. When we examine this coefficient, we provide evidence that the covariance between the earnings management behavior of the target firm and the median financial reporting quality of its peer

firms increases significantly after the target firm adopts RPE-based compensation contracts for its executives.

To validate that our finding is attributable to the adoption of RPE based compensation contracts and not driven by other factors, we repeat the analyses conducted in column (1) using counterfactual RPE adoption years. Using counterfactual years after the actual RPE adoption is not possible since the increase in the covariance documented in column (1) would persist in the post actual RPE adoption year period. Therefore, we choose as counterfactual RPE adoption event years those years that precede the actual RPE adoption event. Specifically in column (2) we use three years prior to the actual RPE adoption as the counterfactual adoption year and in column (3) we denote five years prior to the actual RPE adoption as the counterfactual adoption year. In both columns (2) and (3) the "After" year dummy equals one in the years the target firm counterfactually adopts RPE based compensation contracts and zero otherwise. In both specifications we find the *After×Med Peer DAM* interaction term to be statistically insignificant. These results suggest that the increase in the documented covariance of the financial reporting quality measures of the target firm and its peers immediately after the actual adoption of RPE based executive compensation contracts is unlikely to be random.

4.6 Counterfactual peers as a control group

Although firm fixed effects control for time-invariant determinants, there could still be time-varying firm characteristics that are unobservable that could drive our findings. For instance, there could be changes in monitoring capacity or changes in the incentives of the board to monitor the CEO. These changes could simultaneously lead to both higher levels of earnings management at the firm as well as selection of peers that are likely to engage in earnings management. To address such potential endogeneity issues associated with the selection of peers, we create a set of counterfactual peers and examine if our main results continue to be significant when we control for earnings management of counterfactual peers.

We construct a set of counterfactual peers using three different approaches. First, we do propensity score matching (PSM) based on key firm characteristics that have been shown to drive peer selection. We choose counterfactual peers on how close they are to the actual peers based on these characteristics. These counterfactual peers represent peer firms that could have been selected by the firm but were not.

Second, we use the fact that as time passes firms are added and dropped from the RPE peer group. We create a list of counterfactual peers using firms that once were in the peer group but were dropped from the peer list at some point and are no longer listed as peers. If our main hypothesis is correct that compensation is the main channel through which peers affect the firm's earnings quality, then we would expect earnings management by counterfactual peers to have no significant impact on the firm's earnings quality. For instance, if a peer is managing earnings, we would expect it to have an impact on the firm's earnings quality in the year in which it is in the firm's peer group. But, once a peer firm is dropped from the peer list, we would not expect the dropped peer firm to have an impact on the target firm's earnings management behavior in the subsequent years.

Third, we follow Cadman and Carter (2014) and construct a list of counterfactual peers using peers' peers. If the contagion effect between the target firm's financial reporting quality and the peers' financial reporting quality is due to their similarity, we would expect that the target firm would also be similar to the peers of its own peers. In that case, we would expect to find a significant relationship between the discretionary accruals of the target firm and those of the peers of its peers. However, if the covariation between the discretionary accruals of the target firm and those of its peers can be explained through the RPE-based compensation channel, then we should not find a significant association between the financial reporting quality of the target firm and the earnings management behavior of its peers' peers.

For the propensity score matching, we utilize key characteristics that have been shown to drive peer firm selection (Gong, Li, and Shin, 2011; Bizjak et al. 2022). Since the main motivation for using

RPE-based compensation contracts is to filter out common shocks (Holmstrom 1982, Holmstrom and Milgrom 1987), counterfactual peer firms should be in the same industry, more likely to be included on the same stock index and should have stock returns that are highly correlated with those of the target firm. Furthermore, we also use firm characteristics that capture similarities in performance, risk, growth opportunities, and capital raising capacity to construct the counterfactual peer list. In particular, we use firm size (*Size*), book-to-market ratio (*BM*), average annual return over the past three years (*Return 3y*), annual volatility (*Std*), CAPM-beta (*Beta*), institutional ownership ratio (*IOR*) as well as customer concentration (*HHI*) in the creation of the propensity score.

We create three sets of firms– i) target firms, ii) actual peers of the target firms, and iii) all other firms in the CRSP-Compustat universe that are not target firms or peers of the target firms. Appendix Table A2 shows the mean values of firm characteristics for these three sets of firms. The mean values for firms in the CRSP-Compustat universe that are not target firms or their peers are denoted as "Non-selected" in the table.

In Panel B of Table A2, we report the summary statistics for joint characteristics between target firms and their peers, between target firms and "non-selected firms", and the differences between these pairings. We report return correlations between these alternative pairings as well as their likelihood of belonging to the same 1-digit SIC industry, being listed on the S&P 500 index, or the S&P 1500 index. We find that selected peers have similar firm characteristics to the target firms. As expected, peer firms are more likely to be in the same index as the target firm and tend to have higher stock return correlations with the target firm than firms that are not peers. For instance, the return correlation between target firms and their RPE peers averages 0.545, while the correlation between target firms and all other non-peer firms averages only 0.286.

Each year we create a set of counterfactual peers for each target firm using propensity score matching (PSM). Since each target firm averages fifteen peers, matching each of these 15 peers to over 7,000 firms in the CRSP-Compustat universe results in an exceptionally large dataset to be used in the PSM exercise. To limit the sample used in PSM and to ensure that potential peer firms are meaningful in terms of their likelihood of being selected by the target firm, we first match by firm size, limiting the match to firms that are at least as large as the smallest actual peer of the target firm every year.

We then run a logistic regression to calculate the coefficients to be used in the propensity score matching process. First, we create a dummy variable that takes on a value of one if the matched firm is an actual peer and zero otherwise. Then, we run a logistic regression using this dummy variable as a dependent variable. The explanatory variables are joint characteristics such as the return correlation between the target firm and the matched firm, and differences in firm characteristics such as the size difference between the target firm and the matched firm.

The results from the logit regression are reported in column (1) of the Appendix Table (A3). All explanatory variables are significant. Not all the variables have the same sign as it is possible for target firms to choose aspirational peers that are industry leaders. For instance, target firms may choose more profitable firms in their industry as peers.

The sample utilized in the regression described in column (1) is large since we pair each target-peer firm with many candidates that could potentially have been selected as peers. Because actual peer selections are rare events relative to the universe of firms, the logistic regression may suffer from small-sample bias (King and Zeng, 2001; Gong, Li, and Yin, 2019). To address this potential bias, we limit the sample size in results reported in columns (2) and (3) by randomly matching each target peer firm to a single potential counterfactual firm. Column (2) presents the results when we use such a limited counterfactual set. In this regression specification we use the same set of explanatory variables as in

column (1). Although the number of observations is significantly lower, the coefficients on the explanatory variables are similar.[7] For the regression specification reported in column (3), we use only variables that have been previously used in the literature. Specifically, we control for the correlation of stock returns between the target and peer firms, firm size difference between the target and peer firms, as well as industry and index membership classifications (Bizjak et al. 2022). The pseudo R-squared value reported in column (2) is only slightly higher than the one reported in column (3), despite controlling for the full set of explanatory variables. Based on the pseudo R-squared observed in the regression conducted in column (3), we conclude that these five variables capture most of the variation in the estimated likelihood that a given firm will be selected as a peer.

Using the coefficients obtained from the logistic regressions, we calculate an expected likelihood of being selected as a peer for each match each year. For each target firm-year, we then select the matching firm that has the highest probability of being selected as a peer as the counterfactual peer. We repeat this separately using coefficients reported in each of the three regression models used in Table 6, providing us with three alternative sets of counterfactual peers.

Appendix Table (A4) reports correlations among discretionary accruals of different groups. RPE DAM has the highest correlation with Med industry DAM. The correlation between the target RPE DAM and Med Peer DAM is similar to the correlations between RPE DAM and the median DAMs of counterfactual peer groups, especially comparable to the correlation between RPE DAM and the median DAM of the first counterfactual peer group, when the counterfactual peers are estimated using model 1 in Table A4. These results suggest that the contagion effect between the target firm's earnings management and their peers' earnings management is unlikely to be driven by similarities between the characteristics of the firms but rather appears to be a byproduct of RPE-based executive compensation contracts.

[7] Only two variables, *Return3y*, the difference in three-year stock returns, and the beta estimated from CAPM regressions lose significance in this smaller set.

We also create a set of counterfactual peers created from peers that have been dropped by the target firm in the previous year and a set of counterfactual peers created from the peers of peers list. If our main hypothesis is correct, that compensation is the main channel through which peers affect the target firm's earnings quality, then we would expect earnings management by counterfactual peers to have limited impact on the firm's earnings quality. If contagion is indeed driven by compensation-based incentives, we should observe that the median discretionary accruals of actual peers remain significantly associated with the target firm's DAM, even after controlling for the behavior of counterfactual peers. We examine this contention by running the following regression:

$$DAM_{i,t} = \alpha + \theta Med\ Peer\ DAM_{i,t} + \partial Med\ Counterfactual\ DAM_{i,t} + \beta X_{i,t} + \gamma_t + \delta_j + \varepsilon_{i,t} \quad (18)$$

The results are reported in Table 10. The first three columns report results controlling for median counterfactual peer DAM using the propensity score matching approach. Counterfactual peers are selected using coefficients from corresponding columns in Appendix Table (A3). In column (4) we control for the median peer DAM of dropped peers. In column (5), we control for the median DAM of peers' peers. In all five specifications, the impact of earnings quality of counterfactual peers is insignificant. Moreover, the impact of the earnings quality of actual peers is always significant. Comparing the coefficients on the Med Peer DAM variable to those reported in Table 4 column (1), we find that they are very similar. These results suggest that it is unlikely that our results are driven by omitted variables related to the similarity between the target firm and its peers.

4.7 Alternative measures of earnings quality

We verify our main findings using three alternative measures of earnings quality. Specifically, we proxy the target firm's earnings quality with its real earnings management activity and three additional measures

of reporting quality: One of the additional measures is the Dechow-Dichev (2002) accrual measure, the second measure captures the likelihood that a firm will restate its financial statements, and the third measure is the earnings restatement amount. These proxies represent distinct dimensions of FRQ—manipulation via operations, accrual error persistence, and outright misstatement—thus allowing us to test whether peer effects persist across qualitatively different manifestations of earnings management.

In Table 11, we first examine if there exists correlated behavior in the real earnings management activities of the target firm and its peer firms. Columns (1) through (3) report the regression results of the target firm's abnormal discretionary expenses, abnormal production costs, and abnormal real earnings management on the median of the RPE peers' corresponding values, respectively. These variables are described in detail in Section 3. For all three analyses we find that there is strong covariance in the real earnings management behavior of the target firm and its peers, suggesting that the impact of RPE-based compensation contracts may lead not only to higher covariance in financial reporting quality amongst peers but also to significant co-movement in real earnings management behaviors.

In results reported in columns (4) and (5) we use the Dechow and Dichev (2002) discretionary accruals and restatements as alternative proxies of financial reporting quality. In column (4) we run the regression of the target firm's Dechow and Dichev (2002) discretionary accruals on the median level of their peers' Dechow and Dichev (2002) discretionary accruals. Results in column (4) suggest that using the Dechow and Dichev (2002) measure of discretionary accruals does not qualitatively change our main findings. In column (5), the *Restate* dummy is set to one in a fiscal year if the target firm restates earnings in that year. The *Peer Restate* dummy variable captures the impact of peers and is set to one if any peer firm restates earnings in the same fiscal year. As *Restate dummy* is a binary outcome variable, we run a logistic regression and report its pseudo-R squared value in the fifth column of Table 10. We find a significant association between the incidence of peers' restatements and the incidence of the target firm's

restatements. Finally, in column (6) of Table 11 we investigate the relationship between the target firm's earnings restatement amount (*Restatement Amount*) and the median amount of restatement for the peer firms (*Med Peer Restate Amount*). We calculate the restatement amount as the natural logarithm of the cumulative misstatement amount for all firms. The regression includes only firms that have restated provided that the misstatement amount is available. We find an economically and statistically significant relationship between the target's restatement amount and the median restatement amount of its peers. Overall, the results in Table 11 show that our main findings are robust to alternative measures of financial reporting quality. Furthermore, these results reinforce the interpretation that earnings management contagion operates through a broad strategic channel, influencing not only accrual-based choices but also real operational decisions and eventual financial restatements.

4.8 Effect of Early Reporting on Financial Reporting Quality Contagion

A key question in understanding earnings management contagion is whether firms respond to peers' actual reported outcomes or instead act based on strategic expectations about peer behavior. This distinction raises an important—but ultimately semantic—issue: Does contagion require observable peer actions, or can it also emerge through contemporaneous strategic complementarity, where firms make mutually reinforcing choices in anticipation of one another's behavior? In our setting, we adopt a broad and economically meaningful definition of contagion that encompasses both mechanisms. Strategic complementarity—where managers engage in earnings management because they expect their peers to do the same—still constitutes contagion, even if the decisions are made simultaneously. That said, we empirically examine whether managers exploit timing to gain an informational edge by observing peers' actual earnings before reporting their own.

Our results provide no evidence to support this timing-based channel. Figure A1in the Appendix shows a relatively uniform distribution of target firm announcement dates, with no indication that targets

delay reporting to await peer disclosures. Figure A2 reinforces this point by showing that most firms announce earnings in a narrow temporal window, leaving little room for strategic delay. Together, Figures A1 and A2 aim to rule out timing-based explanations for earnings management contagion. If target firms don't reliably report after their peers, they cannot condition their manipulation on observed peer behavior, which supports the interpretation that incentives—rather than informational timing—drive the contagion.

To further test this, we construct a "late reporter" dummy that equals one when at least 50% of a target firm's peers have already reported. We choose the 50% cutoff as a median-split heuristic to separate firms that likely observe most peer disclosures from those that do not. This variable, when interacted with peer discretionary accruals, shows no significant effect on the target firm's behavior. In Table A5, we split the sample into early and late reporters using this 50% threshold and re-estimate our main model. The contagion effect is economically and statistically similar across both subsamples, and the difference between them is not significant. These findings suggest that while RPE-linked contagion in earnings management is real and robust, it operates through contemporaneous strategic expectations rather than through reactive timing based on observed peer reports. This analysis provides further support for strategic complementarity as the primary mechanism behind FRQ contagion.

5. Conclusion

Recent research reveals that peer firms can significantly influence the actions of target firms. Most studies define peers using SIC-code-based industry proximity, a choice driven by data limitations. While useful, this approach risks misclassifying non-peer firms as peers. Our study overcomes this limitation by leveraging enhanced peer firm disclosures introduced in 2006, which identify the actual set of peer firms used in relative performance evaluation (RPE) contracts. This disclosure enables us to isolate peer effects with greater precision and eliminates noise from irrelevant comparisons.

Using this refined peer set, we find compelling evidence of earnings management contagion: the discretionary accrual behavior of peer firms is significantly and positively associated with that of the target firm. This effect appears to be driven by managerial incentives embedded in RPE contracts, where outperforming designated peers directly affects compensation, retention, and career outcomes. These dynamics also help explain heterogeneity in RPE adoption: firms facing greater scrutiny or volatility may strategically benchmark against broader, less comparable indices to dilute peer pressure and reduce manipulation incentives, while others may opt out of RPE altogether.

A potential concern is that our results could reflect correlated estimation errors in accrual measures rather than true managerial behavior. To address this, we perform an extensive battery of robustness tests. Our results remain significant when controlling for industry-level discretionary accruals and when replacing the disclosed peer set with counterfactual peers derived via propensity score matching, dropped historical peers, or peers of peers. Our finding of a significant increase in the contagion effect between the target firm and its peer firms after the target firm adopts RPE lends further support to our main hypothesis. These tests demonstrate that the contagion effect is not a statistical artifact of correlated fundamentals but is uniquely tied to the actual peer designations in RPE contracts.

We further show that peer effects extend beyond accrual-based manipulation. Real earnings management channels—such as abnormal production costs and discretionary spending cuts—also exhibit significant peer covariance. Moreover, earnings restatement behavior, both in incidence and magnitude, is positively associated across RPE-linked firms. These findings indicate that RPE-induced contagion permeates both accrual-based and real operational dimensions of financial reporting.

Overall, our findings provide robust evidence that RPE contracts serve as a transmission channel for earnings management contagion—not merely through social conformity or shared shocks, but through the explicit structure of managerial incentive design. By demonstrating that RPE can propagate earnings

management across firms, our study offers a contrasting perspective to the traditional view that RPE contracts enhance efficiency by isolating managerial effort, instead showing how they may exacerbate distortions in reporting behavior.

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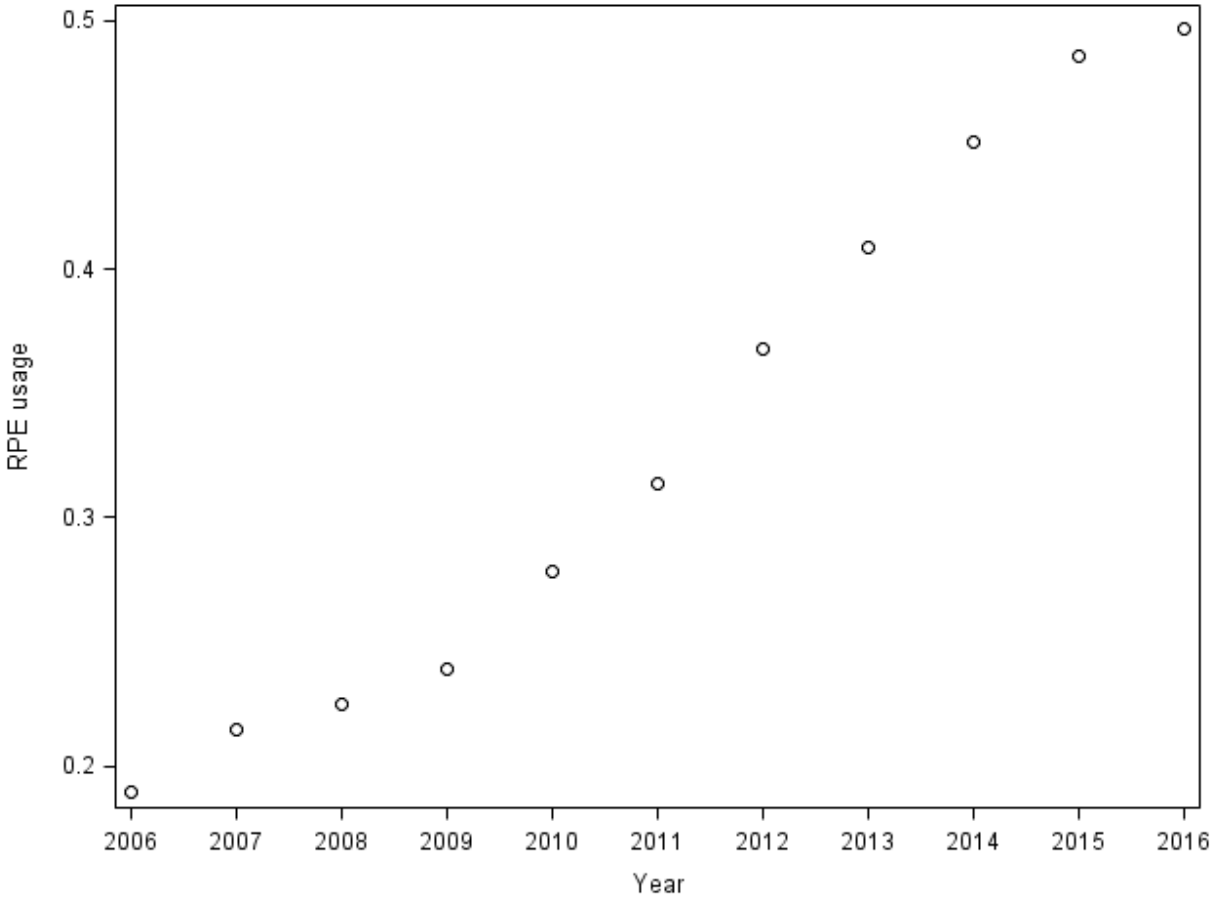
Figure 1: Ratio of firms that use RPE contracts in the full sample of S&P 1500



This figure plots the ratio of firms that use RPE in Incentive Lab for the years 2006 to 2016.

Table 1: Variable definitions (NEED to ADD IN PERFORMANC EMETRICS DEFINITIONS)

Variable	Definition
Firm characteristics:	
BM	BM is book value of equity divided by market value of equity.
Size	Size is the natural logarithm of total assets.
ROA	ROA is Earnings before extraordinary items divided by total assets.
EarningsVol	EarningsVol is Earnings volatility in the past 3 years.
Return	Return is annual return.
Leverage	Leverage is the sum of the market value of equity and the book value of liabilities divided by the market value of equity.
Performance measures, financial reporting quality measures and RPE contract characteristics:	
DAM	DAM is discretionary accrual computed using the modified Jones measure in Dechow, Sloan, and Sweeney (1995) without intercept.
Peer DAM	Peer DAM is the discretionary accrual of a peer firm in a given year computed using the modified Jones measure as in Dechow, Sloan, and Sweeney (1995) without intercept.
Med Peer DAM	Med Peer DAM is the median of discretionary accruals of peers, where discretionary accruals are computed using the modified Jones measure without intercept.
Avg Peer DAM	Avg Peer DAM is the mean of discretionary accruals of peers, where discretionary accruals are computed using the modified Jones measure without intercept.
Med Industry DAM	Med Industry DAM is the median of discretionary accruals of firms in the same Fama & French 12 industry, where discretionary accruals are computed using the modified Jones measure without intercept.
Med Counterfactual DAM	Med Counterfactual DAM is the median of discretionary accruals of firms with the highest propensity scores but were not selected as peers, where discretionary accruals are computed using the modified Jones measure without intercept. These are the so-called counterfactual peers.
Med Dropped DAM	Med Dropped DAM is the median of discretionary accruals of peers that are dropped in the previous year, where discretionary accruals are computed using the modified Jones measure without intercept

Med Peers' Peer DAM	Med Peers' Peer DAM is the median of discretionary accruals of peers' peers, where discretionary accruals are computed using the modified Jones measure without intercept.
Abnormal Discretionary Expenses	Abnormal discretionary expenditures are computed following Huang et al. (2020) and Kothari et al. (2016).
Abnormal Production Costs	Abnormal production costs are computed following Huang et al. (2020) and Kothari et al. (2016).
Abnormal Real Earnings	The sum of abnormal discretionary expenditures and abnormal production cost
DD accruals	The DD accruals are computed following the Dechow and Dichev (2002) approach as the standard deviation of residuals from the regression of accruals on current, past, and future cash flows.
Management Frequency	The number of predictions a company makes during a fiscal year
Horizon	The number of days between the management earnings forecast and the end of the fiscal period to which the prediction applies
Range	The high estimate of the earnings forecast minus the low estimate scaled by the midpoint of the range
Bias	Management's earning forecast minus actual earnings scaled by beginning of period price
Error	The absolute value of management's earnings forecast minus the actual scaled by beginning of period price
Restate Dummy	A dummy equal to 1 if fiscal year t overlaps with a restated period identified in Audit Analytics' 'Non-Reliance' database. Observations corresponding to restatements arising from clerical errors are deleted
Restatement Amount	Natural logarithm of the cumulative misstatement amount for a restatement event for the target firm
Med Peer Restate Amount	Median of the natural logarithm of the cumulative misstatement amounts for the restatement events of the target firm's peers
Extreme Earnings Surprise Dummy ((EES-Dummy)	A dummy equal to 1 if the target firm's earnings surprise falls into the top or bottom 5^{th} /10^{th} percentile of the earnings surprise in the sample

Earnings Deviation Dummy	A dummy equal to 1 if the absolute difference between the target firm's earnings surprise and the median peer's earnings surprise in the first three quarters is greater than one standard deviation of this difference among the full sample, and 0 otherwise.
SEC Investigation Dummy	A dummy equal to 1 if the target firm has been investigated by SEC in the past 3 years
Med Peer ADE	Median of abnormal discretionary expenditures of peers
Med Peer APC	Median of abnormal production cost of peers
Med Peer REM	Median of abnormal real earnings of peers
Med Peer DD accruals	Median of DD accruals of peers
Freq Pct	The percentage of peers having made at least one prediction during a fiscal year
Med Peer Horizon	Median horizon of peers
Med Peer Range	Median range of peers
Med Peer Bias	Median bias of peers
Med Peer Error	Median error of peers
Peer Restate Dummy	A dummy equal to 1 if any peer restated during a given fiscal year.
Peer Restatement Amount	Median restatement amount of peers

Performance Metrics:

Earnings Metric Dummy	Dummy variable that takes on a value of one for executive compensation grants that use earnings metrics in relative performance evaluation
Non-Financial Metric Dummy	Dummy variable that takes on a value of one for executive compensation grants that use non-financial performance metrics (such as employee satisfaction) in relative performance evaluation

Variables used in the propensity score matching:

Return 3y	Annualized return in the past 3 years
Std	Annualized volatility in the past 3 years computed using monthly returns
Beta	CAPM beta in the past 3 years computed using monthly returns
IOR	Institutional ownership ratio, the percentage of shares held by institutions.
HHI	Customer concentration, sum of the square of sales as a percentage of revenues

Correlation	Correlation between the returns of a target firm and its potential peer computed using monthly returns in the past 3 years
Same Industry	A dummy equal to 1 if a target firm and its potential peer are within the same one-digit SIC industry and 0 otherwise
Same S&P500	A dummy equal to 1 if a target firm and its potential peer both belong to the S&P 500 index and zero otherwise
Same S&P1500	A dummy equal to 1 if a target firm and its potential peer both belong to the S&P 1500 index and zero otherwise
Sizediff	Sizediff measures the difference in the market capitalizations of a target firm and a given potential peer, for all possible target firm to potential peer firm matches
BMdiff	BMdiff measures the difference in the book-to-market ratios of a target firm and a given potential peer, for all possible target firm to potential peer firm matches
Return 3ydiff	Return 3ydiff measures the difference in the three-year annual average returns of a target firm and a given potential peer, for all possible target firm to potential peer firm matches
Stddiff	Stddiff measures the difference in the annualized standard deviations of n target firm and a given potential peer, for all possible target firm to potential peer firm matches
Betadiff	Betadiff measures the difference in the CAPM betas of a target firm and a given potential peer, for all possible target firm to potential peer firm matches
IORdiff	IORdiff measures the difference in the institutional ownership levels of a target firm and a given potential peer, for all possible target firm to potential peer firm matches
HHIdiff	HHIdiff measures the difference in the customer concentration levels of a target firm and a given potential peer, for all possible target firm to potential peer firm matches
ROAdiff	ROAdiff measures the difference in the return on assets of a target firm and a given potential peer, for all possible target firm to potential peer firm matches

Variables used in the first stage of Instrumental Variable Analysis:

1/AT	One divided by one-period lagged total assets

ΔREV-ΔREC	Change in revenues scaled by lagged total assets minus change in net receivables scaled by lagged total assets
PPE	Gross property plant and equipment scaled by lagged total assets
Lag CFO	One-period lag cash flow from operations
CFO	Cash flow from operations in the current year
Lead CFO	Cash flow from operations one year later
DiscExp	Sum of advertising expense, R&D expense, and SG&A expense, scaled by lagged total assets
Sales	Sales scaled by lagged total assets
ΔSales	Sales growth scaled by lagged total assets
lag ΔSales	Lagged value of ΔSales

This table describes the variables used in the analyses.

Table 2: Summary Statistics

Panel A: Target firms

Variables	Obs	Avg	Std	P25	P50	P75
BM	1469	0.634	0.430	0.324	0.555	0.836
Size	1469	9.155	1.274	8.326	9.056	10.071
ROA	1469	0.055	0.070	0.028	0.052	0.090
EarningsVol	1469	0.014	0.018	0.005	0.008	0.015
Return	1469	0.124	0.381	-0.079	0.113	0.294
Leverage	1469	1.995	0.957	1.396	1.735	2.288
DAM	1469	0.034	1.170	-0.035	0.007	0.075

Panel B: Firms in the interaction of Compustat and CRSP

Variables	Obs	Avg	Std	P25	P50	P75
BM	30830	0.762	1.112	0.290	0.512	0.873
Size	30830	6.278	2.080	4.736	6.203	7.721
ROA	30830	-0.033	0.312	-0.044	0.033	0.081
EarningsVol	30830	0.053	0.324	0.007	0.016	0.039
Return	30830	0.102	0.591	-0.258	0.039	0.328
Leverage	30830	2.021	3.979	1.176	1.426	1.974
DAM	30830	0.064	1.304	-0.053	0.008	0.106

Panel C: S&P 1500 Firms

Variables	Obs	Avg	Std	P25	P50	P75
BM	14629	0.625	0.826	0.286	0.473	0.763
Size	14629	7.525	1.650	6.354	7.426	8.605
ROA	14629	0.051	0.115	0.020	0.054	0.097
EarningsVol	14629	0.022	0.041	0.005	0.010	0.022
Return	14629	0.140	0.500	-0.139	0.097	0.338
Leverage	14629	1.866	2.337	1.214	1.459	1.954
DAM	14629	0.056	1.244	-0.043	0.006	0.078

This table reports the number of observations, average, standard deviation, 25^{th} percentile, median, and 75^{th} percentile of the firm characteristics used in the analyses. Panel A presents summary statistics from 2006 to 2016 for the sample of firms that use relative performance evaluation (RPE) in executive contracts. Panel B presents summary statistics from 2006 to 2016 for all firms with data available in both the CRSP and Compustat databases. Panel C presents summary statistics from 2006 to 2016 for S&P 1500 firms with data available in both the CRSP and Compustat databases. The reported variables are book-to-market ratio (*BM*), firm size (*Size*), return on assets (*ROA*), earnings volatility (*EarningsVol*), annual return (*Return*), leverage (*Leverage*) and discretionary accruals (*DAM*). All variables are described in detail in Table 1.

Table 3: Univariate sorts of firms that use RPE in executive contracts based on the level of their discretionary accruals

Quintile	DAM	Med Peer DAM	BM	Size	ROA	Earnings Vol	Return	Leverage
L	-0.706	-0.351	0.545	8.995	0.065	0.016	0.180	1.794
2	-0.034	-0.041	0.728	9.261	0.045	0.012	0.124	2.259
3	0.007	0.016	0.682	9.158	0.055	0.011	0.104	2.139
4	0.074	0.041	0.590	9.109	0.066	0.014	0.106	1.939
H	0.881	0.431	0.594	9.071	0.058	0.017	0.113	1.797
H-L	1.587	0.783	0.049	0.076	-0.007	0.001	-0.067	0.003
t-Value	5.572	4.441	0.460	0.515	-0.478	0.489	-1.434	0.035

This table reports over the 2006 to 2016 period portfolio-level mean values for a set of firm characteristics of the firms in a given portfolio as well as of the peers of the firms in that portfolio where portfolios are formed based on quintile sorts of discretionary accruals computed using the modified Jones measure without the intercept (*DAM*). Peer firms are those firms listed by the respective executive contracts that utilize RPE. *DAM* is the average discretionary accrual value per quintile for firms that use relative performance evaluation (RPE) in executive contracts, where L denotes the lowest accrual quintile, and H corresponds to the highest accrual quintile. *Med Peer DAM* is the average of the median discretionary accruals of the peer firms in each quintile. *BM* is the average of book-to-market ratio of all firms that use relative performance evaluation (RPE) in executive contracts for a given DAM-quintile portfolio. *Size* is the average of market capitalization of all firms that use relative performance evaluation (RPE) in executive contracts in the corresponding DAM-quintile portfolio. *ROA* is the average of return on assets of all firms that use relative performance evaluation (RPE) in executive contracts in each DAM-quintile portfolio. *EarningsVol* is the average of volatility of earnings of all firms that use relative performance evaluation (RPE) in executive contracts in each DAM-quintile portfolio. *Return* is the average of annual returns of all firms that use relative performance evaluation (RPE) in executive contracts in a given DAM-quintile portfolio. *Leverage* is the average of firm leverage of all firms that use relative performance evaluation (RPE) in executive contracts in a corresponding DAM-quintile portfolio. H-L reports for each characteristic the difference between the highest and lowest accrual quintiles and the *t-Value* reports the t-statistics (statistical significance) of this difference. All variables are described in detail in Table 1.

Table 4: The effect of peers' discretionary accruals

VARIABLES	(1) Mod Jones Accruals	(2) Mod Jones Accruals	(3) Mod Jones Accruals	(4) Mod Jones Accruals	(5) Mod Jones Accruals	(6) Mod Jones Accruals	(7) Mod Jones Accruals
1/AT	9.860	-3.062	1.755	208.014	309.686	42.213	30.778
	(69.117)	(66.496)	(69.593)	(377.004)	(408.271)	(78.328)	(76.862)
ΔREV-ΔREC	0.129	0.146	0.202	0.248	0.265	0.052	0.108
	(0.191)	(0.189)	(0.203)	(0.246)	(0.281)	(0.187)	(0.175)
PPE	0.065	0.054	0.051	0.027	-0.126	0.051	0.171**
	(0.078)	(0.077)	(0.084)	(0.162)	(0.167)	(0.081)	(0.086)
BM	0.088*	0.070	0.087*	0.041	0.038	0.085	0.085
	(0.053)	(0.054)	(0.049)	(0.077)	(0.092)	(0.053)	(0.065)
Size	0.017	0.006	0.004	-0.097	0.088	0.001	0.009
	(0.027)	(0.025)	(0.027)	(0.154)	(0.161)	(0.028)	(0.027)
ROA	0.635	0.616	0.508	0.414	0.524	0.517	0.336
	(0.560)	(0.563)	(0.648)	(0.885)	(1.133)	(0.559)	(0.595)
Return	0.082	0.086	0.051	0.184	0.189	0.079	0.008
	(0.075)	(0.076)	(0.087)	(0.132)	(0.137)	(0.076)	(0.085)
EarningsVol	0.290	0.402	0.350	-2.885	-1.003	0.574	0.535
	(1.246)	(1.215)	(1.312)	(3.010)	(3.289)	(1.281)	(1.153)
Leverage	-0.012	-0.016	-0.013	0.012	0.007	-0.007	0.004
	(0.019)	(0.021)	(0.028)	(0.033)	(0.057)	(0.021)	(0.026)
Med Peer DAM	0.862***	0.618***	0.539***	0.904***	0.517***		
	(0.103)	(0.113)	(0.112)	(0.123)	(0.124)		
Med Industry DAM		0.706***					
		(0.151)					
Avg Peer DAM						0.840***	
						(0.099)	
Peer DAM							0.276***
							(0.057)
Constant	-0.265	-0.100	-0.130	0.680	-0.739	-0.154	-0.366
	(0.331)	(0.320)	(0.352)	(1.481)	(1.550)	(0.340)	(0.320)
Observations	1,418	1,418	1,418	1,418	1,418	1,418	19,801
R-squared	0.379	0.450	0.504	0.548	0.677	0.388	0.184
FE	Industry+Year	Industry+Year	Industry*Year	Firm+Year	Firm + Industry*Year	Industry+Year	Industry+Year

This table reports results of annual regressions where the dependent variable is the discretionary accruals for firms that use some form of RPE in their executive compensation contracts. The independent variables in focus are the median of discretionary accruals of peers (*Med Peer DAM*) and the median of discretionary accruals of firms in the same Fama and French 12 industry group as the target firm studied (*Med Industry DAM*). All discretionary accrual measures are computed using the modified Jones measure without intercept. Models (1) and (2) control for industry and year fixed effects, model (3) controls for industry times year fixed effects, model (4) controls for firm and year fixed effects, and model (5) controls for firm + industry*year fixed effects. Model (6) replicates the analysis in model (1) by replacing the median of the discretionary accruals of peers (*Med Peer DAM)* with the average of the discretionary accruals of peer (*Avg Peer DAM*) as the independent variable in focus. Model (7) is different from the first six models as the regression model is run at the target firm – peer firm – year level with industry plus year fixed effects. The independent variable in focus in model (7) is the discretionary accrual level of a peer firm (*Peer DAM*) in a given year. Independent variables are described in further detail in Table 1. Standard errors are reported in parentheses and calculated after adjusting for firm-level clustering. Significance is denoted by ***, **, and * at the 1%, 5%, and 10% significance levels, respectively, using two-tailed tests.

Table 5: The impact of performance shocks and cost of earnings manipulation on the contagion of earnings management behavior

VARIABLES	(1) Mod Jones Accruals	(2) Mod Jones Accruals	(3) Mod Jones Accruals	(4) Mod Jones Accruals
1/AT	29.954	29.672	91.463	11.128
	(76.496)	(76.771)	(114.656)	(68.188)
ΔREV-ΔREC	0.108	0.109	0.226	0.129
	(0.176)	(0.175)	(0.257)	(0.190)
PPE	0.169*	0.171**	0.004	0.070
	(0.086)	(0.086)	(0.086)	(0.078)
BM	0.085	0.084	0.067	0.088
	(0.065)	(0.066)	(0.076)	(0.054)
Size	0.010	0.008	0.025	0.017
	(0.027)	(0.027)	(0.028)	(0.025)
ROA	0.339	0.340	0.786	0.602
	(0.585)	(0.594)	(0.572)	(0.561)
Return	0.008	0.010	0.048	0.077
	(0.084)	(0.095)	(0.079)	(0.075)
EarningsVol	0.446	0.506	0.367	0.393
	(1.127)	(1.144)	(1.395)	(1.224)
Leverage	0.004	0.006	0.001	-0.015
	(0.026)	(0.026)	(0.021)	(0.020)
Peer DAM (*Med Peer DAM for col. 3 and 4*)	0.295***	0.304***	*0.866***	*0.922***
	(0.061)	(0.062)	91.463	(0.106)
Abs Difference ROA	0.119			
	(0.244)			
Peer DAM × Abs Difference ROA	-0.252***			
	(0.096)			
Abs Difference Return		0.001		
		(0.055)		
Peer DAM × Abs Difference Return		-0.095*		
		(0.056)		
Earnings Divergence Dummy			-0.436	
			(0.506)	
Med Peer DAM × Earnings Divergence Dummy			-1.246***	
			(0.328)	
SEC Investigation Dummy				0.032
				(0.067)
Med Peer DAM × SEC Investigation Dummy				-0.398*
				(0.236)
Constant	-0.374	-0.364	-0.350	-0.318
	(0.314)	(0.319)	(0.358)	(0.310)
Observations	19,801	19,798	1,238	1,418
R-squared	0.185	0.185	0.394	0.389
FE	Industry+Year	Industry+Year	Industry+Year	Industry+Year

This table examines how the covariation of earnings management behavior of the target firm with the earnings management behavior of its peer firms changes, based on the performance differential between them and based on the perceived cost of earnings management behavior by the target firm. The table reports results of annual regressions where the dependent variable is the discretionary accrual for target firm. Discretionary accrual measures for all firms are computed using the modified Jones measure without intercept. *Peer DAM* measures each of the target firm's peers' discretionary accruals and is used in target-peer-year level regressions. *Med Peer DAM* captures median accruals quality across the firm's peers and is used in target-year level regressions. We capture firm level performance using three measures: return on assets, stock return and total earnings surprise for the firm calculated over the first three quarters of the year. We proxy for the perceived cost of earnings management based on whether the target firm was investigated by the SEC in the three years prior. In columns (1) and (2) we run target-peer-year level regressions. Every period we calculate the absolute value of the performance differential between the target firm and each of its peers using either return on assets (ROA) or stock return (Return). The absolute value difference between ROA (Return) values of the target firm and its peer in a given year is *Abs Difference ROA (Abs Difference Return)*. Column 1 (2) reports the regression results where the absolute performance difference measure is *Abs Difference ROA (Abs Difference Return)*. In column (3) we further investigate the impact of performance differential between the target firm and its peers on the strategic interaction between them using target-year level regressions. In doing so we calculate for all target and peer firms three-quarterly earnings surprise measures for the year we conduct the analyses. To do so first, we calculate for all target and peer firms the difference between their realized earnings and the analysts' estimates in every quarter for the first three quarters of the year to estimate their quarterly earnings surprises. Second, we accumulate these earnings surprises over the three quarters and calculate for all target and peer firms three-quarterly earnings surprises. Third, for each target firm we calculate the absolute value of the difference between the target firm's three-quarterly earnings surprise and the median value of the three-quarterly earnings surprises of its peers. Finally, we standardize this absolute value difference using the standard deviation of the differences between the earnings surprise measure of the target firm and the earnings surprise values of its peers. Finally, we estimate the Earnings Divergence Dummy. *Earnings Divergence Dummy* is a dummy variable that equals 1 if the difference between the target firm's three-quarterly earnings surprise and the median of the peer firms' three-quarterly earnings surprise is greater or lower than one standard deviation of this difference, and 0 otherwise. Finally, in column (4) we investigate how costs associated with earnings manipulation impact contagion in financial reporting quality. In doing so, we analyze how past SEC investigations can shape the earnings management behavior of target firms in relation to their peers' earnings management behavior. *SEC Investigation Dummy* is equal to 1 if the target firm was investigated by the SEC at any point in the prior 3 years, and zero otherwise. All the models control for industry and year fixed effects. Table 1 describes the independent variables used in the regressions in further detail. Standard errors are reported in parentheses and calculated after adjusting for firm-level clustering. Significance is denoted by ***, **, and * at the 1%, 5%, and 10% levels respectively, using two-tailed tests.

Table 6: The effect of aggregate index discretionary accruals

VARIABLES	(1) Mod Jones Accruals	(2) Mod Jones Accruals	(3) Mod Jones Accruals
1/AT	46.064	46.064	46.064
	(57.920)	(57.920)	(57.920)
ΔREV-ΔREC	0.260	0.260	0.260
	(0.294)	(0.294)	(0.294)
PPE	0.188	0.188	0.188
	(0.155)	(0.155)	(0.155)
BM	0.194**	0.194**	0.194**
	(0.081)	(0.081)	(0.081)
Size	-0.056*	-0.056*	-0.056*
	(0.030)	(0.030)	(0.030)
ROA	0.216	0.216	0.216
	(0.480)	(0.480)	(0.480)
Return	0.355	0.355	0.355
	(0.400)	(0.400)	(0.400)
EarningsVol	-1.070	-1.070	-1.070
	(2.201)	(2.201)	(2.201)
Leverage	-0.037*	-0.037*	-0.037*
	(0.019)	(0.019)	(0.019)
Median S&P500 DAM	16.150		
	(11.279)		
Mkt Cap weighted S&P500 DAM		1.769	
		(1.235)	
Assets weighted S&P500 DAM			2.305
			(1.610)
Constant	0.223	0.196	0.225
	(0.271)	(0.278)	(0.271)
Observations	1,057	1,057	1,057
R-squared	0.104	0.104	0.104
FE	Industry+Year	Industry+Year	Industry+Year

This table presents the impact of peer DAM on the target firms whose benchmark is S&P 500 index. Columns (1) to (3) reports the regression results on i) Median DAM for the S&P 500 firms, ii) market capitalization weighted average DAM of S&P 500 firms and iii) asset value weighted average DAM of S&P 500 firms, respectively. Standard errors are reported in parentheses and calculated after adjusting for firm-level clustering. Significance is denoted by ***, **, and * at the 1%, 5%, and 10% significance levels, respectively, using two-tailed tests.

Table 7: Impact of performance metrics on earnings management contagion

VARIABLES	(1) Mod Jones Accruals	(2) Mod Jones Accruals	(3) Mod Jones Accruals
1/AT	-7.884	8.844	-6.899
	(68.664)	(71.125)	(68.426)
ΔREV-ΔREC	0.130	0.130	0.133
	(0.195)	(0.194)	(0.196)
PPE	0.064	0.049	0.061
	(0.079)	(0.081)	(0.079)
BM	0.099*	0.091	0.094*
	(0.055)	(0.056)	(0.056)
Size	0.009	0.014	0.009
	(0.028)	(0.027)	(0.028)
ROA	0.619	0.674	0.611
	(0.597)	(0.601)	(0.597)
Return	0.076	0.079	0.074
	(0.080)	(0.079)	(0.080)
EarningsVol	0.399	0.348	0.329
	(1.286)	(1.324)	(1.277)
Leverage	-0.010	-0.008	-0.008
	(0.019)	(0.019)	(0.019)
Med Peer DAM	0.810***	0.868***	0.817***
	(0.103)	(0.105)	(0.104)
Earnings Metric Dummy	0.110		0.107
	(0.075)		(0.075)
Earnings Metric Dummy × Med Peer DAM	0.425***		0.418***
	(0.117)		(0.118)
Non-Financial Metric Dummy		-0.056	-0.030
		(0.049)	(0.046)
Non-Financial Metric Dummy × Med Peer DAM		-0.777***	-0.729***
		(0.130)	(0.129)
Constant	-0.269	-0.278	-0.252
	(0.337)	(0.331)	(0.336)
Observations	13,173	13,173	13,173
R-squared	0.384	0.377	0.386
FE	Industry+Year	Industry+Year	Industry+Year

This table reports results of annual regressions where the dependent variable is the discretionary accruals for firms that use some form of RPE in their executive compensation contracts. The independent variables in focus are interaction terms between median of discretionary accruals of peers (Med Peer DAM) and the earnings/non-financial metric dummies. All discretionary accrual measures are computed using the modified Jones measure without intercept. Industry and year fixed effects are controlled in all models. Independent variables are described in further detail in Table 1. Standard errors are reported in parentheses and calculated after adjusting for firm-level clustering. Significance is denoted by ***, **, and * at the 1%, 5%, and 10% significance levels, respectively, using two-tailed tests.

Table 8: The impact of peer discretionary accruals after RPE initiation

VARIABLES	(1) Mod Jones Accruals	(2) Mod Jones Accruals	(3) Mod Jones Accruals
1/AT	-210.766	-401.552	-373.712
	(592.890)	(1,787.100)	(643.155)
ΔREV-ΔREC	-0.369	0.143	0.033
	(0.791)	(0.681)	(0.839)
PPE	-0.050	0.147	-0.610
	(0.690)	(0.325)	(1.279)
BM	-0.108	-0.205	0.274
	(0.263)	(0.819)	(0.665)
Size	-0.020	-0.809	-0.443
	(0.363)	(0.709)	(0.657)
ROA	3.493	-0.419	3.774
	(4.648)	(2.724)	(4.086)
Return	-0.042	0.412	-0.048
	(0.203)	(0.747)	(0.387)
EarningsVol	-1.504	-6.233	4.111
	(4.203)	(5.913)	(7.381)
Leverage	0.029	-0.073	-0.110
	(0.054)	(0.182)	(0.178)
After	0.041	1.060**	-0.086
	(0.356)	(0.407)	(0.303)
Med Peer DAM	0.526**	2.431	0.671
	(0.225)	(1.725)	(0.985)
After×Med Peer DAM	1.124***	-1.144	1.586
	(0.321)	(1.720)	(2.873)
Constant	0.030	6.134	3.879
	(3.480)	(6.137)	(4.879)
Observations	426	268	176
R-squared	0.882	0.849	0.771
FE	Firm + Year	Firm + Year	Firm + Year
Sample	Treated	Counter-factual	Counter-factual

This table reports the impact of peer discretionary accruals before versus after the target firm adopts RPE. Column (1) compares the impact one year before and one year after the target firm adopts RPE. Assuming that the target firm adopted RPE several years earlier, we further conduct some robustness checks. Columns (2) and (3) report the relationship between the target firm and its peers one year before and one year after the counterfactual treatment year, assuming that the target firm adopted RPE three years and five years earlier, respectively. Standard errors are reported in parentheses and calculated after adjusting for firm-level clustering. Significance is denoted by ***, **, and * at the 1%, 5%, and 10% significance levels, respectively, using two-tailed tests.

Table 9: Impact of performance metrics on earnings management contagion

VARIABLES	(1) Mod Jones Accruals	(2) Mod Jones Accruals	(3) Mod Jones Accruals
1/AT	-7.884	8.844	-6.899
	(68.664)	(71.125)	(68.426)
ΔREV-ΔREC	0.130	0.130	0.133
	(0.195)	(0.194)	(0.196)
PPE	0.064	0.049	0.061
	(0.079)	(0.081)	(0.079)
BM	0.099*	0.091	0.094*
	(0.055)	(0.056)	(0.056)
Size	0.009	0.014	0.009
	(0.028)	(0.027)	(0.028)
ROA	0.619	0.674	0.611
	(0.597)	(0.601)	(0.597)
Return	0.076	0.079	0.074
	(0.080)	(0.079)	(0.080)
EarningsVol	0.399	0.348	0.329
	(1.286)	(1.324)	(1.277)
Leverage	-0.010	-0.008	-0.008
	(0.019)	(0.019)	(0.019)
Med Peer DAM	0.810***	0.868***	0.817***
	(0.103)	(0.105)	(0.104)
Earnings Metric Dummy	0.110		0.107
	(0.075)		(0.075)
Earnings Metric Dummy × Med Peer DAM	0.425***		0.418***
	(0.117)		(0.118)
Non-Financial Metric Dummy		-0.056	-0.030
		(0.049)	(0.046)
Non-Financial Metric Dummy × Med Peer DAM		-0.777***	-0.729***
		(0.130)	(0.129)
Constant	-0.269	-0.278	-0.252
	(0.337)	(0.331)	(0.336)
Observations	13,173	13,173	13,173
R-squared	0.384	0.377	0.386
FE	Industry+Year	Industry+Year	Industry+Year

This table reports results of annual regressions where the dependent variable is the discretionary accruals for firms that use some form of RPE in their executive compensation contracts. The independent variables in focus are interaction terms between median of discretionary accruals of peers (Med Peer DAM) and the earnings/non-financial metric dummies. All discretionary accrual measures are computed using the modified Jones measure without intercept. Industry and year fixed effects are controlled in all models. Independent variables are described in further detail in Table 1. Standard errors are reported in parentheses and calculated after adjusting for firm-level clustering. Significance is denoted by ***, **, and * at the 1%, 5%, and 10% significance levels, respectively, using two-tailed tests.

Table 10: Controlling for discretionary accruals of matched firms and of dropped peers

VARIABLES	(1) Mod Jones Accruals	(2) Mod Jones Accruals	(3) Mod Jones Accruals	(4) Mod Jones Accruals	(5) Mod Jones Accruals
1/AT	12.124	20.745	9.284	10.980	150.747
	(95.445)	(95.935)	(68.985)	(68.702)	(148.382)
ΔREV-ΔREC	0.124	0.121	0.137	0.125	0.491**
	(0.194)	(0.193)	(0.193)	(0.192)	(0.206)
PPE	0.063	0.060	0.067	0.057	0.052
	(0.080)	(0.079)	(0.076)	(0.079)	(0.089)
BM	0.088	0.077	0.083	0.089*	0.097*
	(0.055)	(0.055)	(0.053)	(0.053)	(0.051)
Size	0.019	0.024	0.017	0.015	0.038
	(0.029)	(0.029)	(0.026)	(0.026)	(0.030)
ROA	0.790	0.821	0.666	0.641	0.625
	(0.584)	(0.584)	(0.565)	(0.560)	(0.581)
Return	0.054	0.074	0.091	0.086	0.069
	(0.072)	(0.074)	(0.075)	(0.075)	(0.078)
EarningsVol	0.551	0.492	0.327	0.258	0.534
	(1.363)	(1.352)	(1.253)	(1.236)	(1.274)
Leverage	-0.009	-0.010	-0.011	-0.012	-0.016
	(0.020)	(0.020)	(0.019)	(0.019)	(0.019)
Med Peer DAM	0.864***	0.847***	0.851***	0.828***	0.708***
	(0.103)	(0.099)	(0.101)	(0.112)	(0.154)
Med Counterfactual DAM (1)	-0.033				
	(0.055)				
Med Counterfactual DAM (2)		0.246			
		(0.168)			
Med Counterfactual DAM (3)			0.163		
			(0.144)		
Med Dropped DAM				0.132	
				(0.190)	
Med Peers' Peer DAM					0.190
					(0.142)

Constant	-0.302	-0.342	-0.265	-0.246	-0.553
	(0.363)	(0.362)	(0.329)	(0.323)	(0.395)
Observations	1,392	1,392	1,416	1,418	1,280
R-squared	0.382	0.385	0.381	0.382	0.369
FE	Industry+Year	Industry+Year	Industry+Year	Industry+Year	Industry+Year

This table reports results of annual regressions where the dependent variable is the discretionary accruals computed using the modified Jones measure without the intercept (*DAM*) for firms that use some form of RPE in their executive compensation contracts. The independent variables in focus are the median of discretionary accruals of peers (*Med Peer DAM*) as well as the median discretionary accrual values of those so-called counterfactual peers. Counterfactual peers are estimated using the logistic regression results from Table A3. Specifically using loadings on characteristics studied in Table A3 we estimate for each peer firm the most similar firm to it from the set of all firms covered by CRSP and COMPUSTAT and designate it the counterfactual peer. Counterfactual peers, by definition, should not be actual peers of the target firm but instead are those firms that could alternatively have been chosen as peer firms. In column 1 (2, 3) we utilize *Med Counterfactual DAM 1 (2, 3)* which is the median discretionary accrual values of counterfactual peers when the counterfactual peers are estimated using model 1 (2, 3) in Table A3. In column (4) we control for the median of discretionary accruals of peers that are dropped in the former period (Med Dropped DAM). Column (5) reports results controlling for the median of discretionary accruals of peers' peers (Med Peers' Peer DAM). Analyses in columns (1) through (5) control for industry and year fixed effects. All the models use industry and year fixed effects. Table 1 describes the other independent variables used in the regression in further detail. Standard errors are reported in parentheses and calculated after adjusting for firm-level clustering. Significance is denoted by ***, **, and * at the 1%, 5%, and 10% significance levels, respectively, using a two-tailed test.

Table 11: Impact of peers' behavior on alternative measures of financial reporting quality

VARIABLES	(1) Abnormal Discretionary Expenses	(2) Abnormal Production Costs	(3) Abnormal Real Earnings Management	(4) DD accruals	(5) Restatement Dummy	(6) Re-statement Amount
1/AT	-12.229	26.634*	8.223			
	(7.953)	(14.457)	(11.614)			
Sales	0.045***	-0.098***	-0.033*			
	(0.009)	(0.028)	(0.020)			
DiscExp	-0.109***		0.020			
	(0.038)		(0.047)			
Lag Prod		0.022	0.000			
		(0.025)	(0.019)			
ΔSales		-0.060**	0.010			
		(0.024)	(0.018)			
lag ΔSales		0.024	0.033**			
		(0.020)	(0.016)			
Lag CFO				0.367		
				(0.280)		
CFO				-0.437		
				(0.427)		
Lead CFO				0.234		
				(0.287)		
BM	-0.015*	0.016	0.008	-0.004	0.439	-0.004
	(0.008)	(0.012)	(0.009)	(0.037)	(0.346)	(0.154)
Size	0.003	-0.005	0.001	0.004	-0.214*	0.019
	(0.003)	(0.003)	(0.003)	(0.016)	(0.117)	(0.037)
ROA	0.044	0.564***	0.567***	0.723**	-2.238	-0.566
	(0.042)	(0.083)	(0.085)	(0.304)	(1.656)	(0.656)
Return	0.003	-0.010	0.006	-0.008	0.090	0.076
	(0.006)	(0.011)	(0.009)	(0.022)	(0.264)	(0.088)
EarningsVol	-0.00	0.149	0.129	0.943*	4.586	-1.458
	(0.117)	(0.255)	(0.218)	(0.502)	(8.726)	(2.742)
Leverage	0.001	0.000	0.001	0.000	0.053	0.021
	(0.001)	(0.001)	(0.001)	(0.002)	(0.062)	(0.027)
Med Peer ADE	0.909***					
	(0.125)					
Med Peer APC		0.349**				
		(0.140)				
Med Peer REM			0.596***			
			(0.106)			
Med Peer DD accruals				0.768***		
				(0.134)		
Peer Restate Dummy					0.564**	
					(0.250)	
Med Peer Restate Amount						0.193**
						(0.076)
Constant	-0.029	0.042	-0.014	-0.096	1.981	13.512***
	(0.033)	(0.035)	(0.032)	(0.178)	(1.290)	(1.239)

Observations	1,560	1,590	1,358	544	511	206
(Pseudo) R-squared	0.463	0.408	0.377	0.563	0.064	0.162
FE	Industry+ Year	Industry+ Year	Industry+ Year	Industry+ Year	Industry+ Year	Industry+ Year

This table extends the main analyses by investigating the impact of peer behavior on alternative measures of financial reporting quality. Managers might overstate earnings via overproduction, channel-stuffing and reducing discretionary expenses. Following Huang et al. (2020), we estimate a company's degree of abnormal discretionary expenses and abnormal production costs and construct an aggregate index combining them (*Abnormal Real Earnings Management*). Columns (1)-(3) report the regression results of the target firm's abnormal discretionary expenses, abnormal production costs, and abnormal real earnings management on the median of peers' corresponding values, respectively. In column (4) we run the regression of the target firm's Dechow and Dichev (2002) discretionary accruals on the median level of their peers' Dechow and Dichev (2002) discretionary accruals. Using restatements, in column (5) we run a logistic regression and investigate the impact of peer restatements on the likelihood of the target firm re-stating its financials. Column (6) reports the regression of the target firm's restatement amount (*Restatement Amount*) on the median restatement amount (*Med Peer Restate Amount*) of the target firm's peers. *Restatement Amount* (*Med Peer Restate Amount)* is the natural logarithm of the cumulative misstatement amount for a restatement event for the target (peer) firm. Table 1 describes the independent variables used in the regressions in further detail. Standard errors are reported in parentheses and calculated after adjusting for firm-level clustering. Significance is denoted by ***, **, and * at the 1%, 5%, and 10% levels respectively, using two-tailed tests.

APPENDICES

Model:

This appendix constructs the basic model considered in the paper. The model assumes symmetric incentives and costs for the target firm and its sole peer. Hypotheses 1 and 2 follow directly from the predictions of the model. The goal of the CEO in firm *i* is to maximize her whole-life utility via the management of earnings from *t*=0 to ∞:

$$\max_{\{m_{i,t}\}_{t=0}^{\infty}} \sum_{t=0}^{\infty} \beta^t U(W_{i,t})$$

Assumption 1: $U(W_{i,t}) = E(W_{i,t})$ (A.1)

Assumption 2: The CEO is rewarded when the reported earnings of the company are greater than their peer companies'. The compensation of the manager in firm i is

$$W_{i,t} = \gamma_{i,t} + b_t(x_{i,t} - x_{p,t})^+ - c_t m_{i,t}^2 \quad \text{(A.2)}$$

where $\gamma_{i,t}$ is the fixed compensation, $x_{i,t}$ and $x_{p,t}$ are the reported earnings of the target firm and the peer firm, respectively. The CEO receives a reward of $b_t(x_{i,t} - x_{p,t})^+$ when she beats the peer, where $(x_{i,t} - x_{p,t})^+ = \max(x_{i,t} - x_{p,t}, 0)$ and b_t is the reward factor at time *t*. There is also a personal cost of earnings management $c_t m_t^2$ should the manipulation be discovered.

Assumption 3: The target firm *i*'s reported earnings at time *t*, $x_{i,t}$, depend on the industry shock to the earnings I_t, the firm-specific idiosyncratic shock $\eta_{i,t}$, and manipulation $m_{i,t}$, i.e.,

$$x_{i,t} = I_t + \eta_{i,t} + m_{i,t} \quad \text{(A.3)}$$

Assumption 4: There is only one peer firm and it also uses the target firm as the peer. Its earnings are also determined by the industry shock, the firm-specific idiosyncratic and the level of manipulation:

$$x_{p,t} = I_t + \eta_{p,t} + m_{p,t} \quad \text{(A.4)}$$

Assumption 5: The firm-specific idiosyncratic shocks are random variables, independent, and follow a normal distribution with a variance of σ^2 so that

$$\eta_{i,t} - \eta_{p,t} \sim N(\Delta\eta_t, 2\sigma^2) \quad \text{(A.5)}$$

Assumption 6: The sum of the earnings management is bounded, i.e.,

$$\sum_{t=0}^{\infty} m_t \leq M \quad \text{(A.6)}$$

Model solution:

The Lagrangian incorporating the constraint (A.6) of the target firm is

$$\mathcal{L}_i = \sum_{t=0}^{\infty} \beta^t U(W_{i,t}) - \lambda_i(\sum_{t=0}^{\infty} m_t - M) \quad \text{(A.7)}$$

Given the assumptions, the first-order condition is

$$\frac{d\mathcal{L}_i}{dm_{i,t}} = \beta^t \frac{dU(W_{i,t})}{dm_{i,t}} - \lambda_i = \beta^t \frac{dE(W_{i,t})}{dm_{i,t}} - \lambda_i. \quad \text{(A.8)}$$

Given $\eta_{i,t}$ and $\eta_{p,t}$ follow normal distributions and they are independent, we have

$$x_{i,t} - x_{p,t} \sim N(\Delta\eta_t + m_{i,t} - m_{p,t}, 2\sigma^2)$$

Thus $E(W_{i,t}) = \gamma_{i,t} + b_t(\Delta\eta_t + m_{i,t} - m_{p,t})\Phi\left(\frac{\Delta\eta_t + m_{i,t} - m_{p,t}}{\sqrt{2}\sigma}\right) + b_t\sqrt{2}\sigma\phi\left(\frac{\Delta\eta_t + m_{i,t} - m_{p,t}}{\sqrt{2}\sigma}\right) - c_t m_{i,t}^2$ [1]

where $\Phi(x)$ and $\phi(x)$ are the cumulative distribution function (CDF) and probability density function (PDF) of the standard normal distribution, respectively.

The derivative of $E(W_{i,t})$ with respect to $m_{i,t}$ is

[1] The proof uses the following property: Given X~$N(0,1)$ and $Y = \mu + \sigma X$, then

$$EY^+ = E(\mu + \sigma X)^+ = \int_{-\mu/\sigma}^{+\infty} (\mu + \sigma x)\phi(x)dx = \mu\int_{-\mu/\sigma}^{+\infty} \phi(x)dx + \sigma\int_{-\mu/\sigma}^{+\infty} x\phi(x)dx$$
$$= \mu\int_{-\infty}^{\mu/\sigma} \phi(x)dx + \sigma\int_{-\mu/\sigma}^{+\infty} x\frac{1}{\sqrt{2\pi}}e^{-\frac{1}{2}x^2}dx = \mu\Phi(\frac{\mu}{\sigma}) + \frac{\sigma}{\sqrt{2\pi}}e^{-\frac{(\mu/\sigma)^2}{2}} = \mu\Phi(\frac{\mu}{\sigma}) + \sigma\phi(\frac{\mu}{\sigma})$$

$$\frac{dE(W_{i,t})}{dm_{i,t}} = b_t\Phi\left(\frac{\Delta\eta_t + m_{i,t} - m_{p,t}}{\sqrt{2}\sigma}\right) - 2c_t m_{i,t} \qquad \text{(A.9)}$$

Substituting (9) into (8), we get the optimal $m_{i,t}$ satisfying

$$b_t\Phi\left(\frac{\Delta\eta_t + m^*_{i,t} - m_{p,t}}{\sqrt{2}\sigma}\right) - 2c_t m^*_{i,t} = \lambda_i/\beta^t \qquad \text{(A.10)}$$

Similarly, the optimal choice of the peer's management satisfies

$$b_t\Phi\left(\frac{-\Delta\eta_t + m^*_{p,t} - m_{i,t}}{\sqrt{2}\sigma}\right) - 2c_t m^*_{p,t} = \lambda_p/\beta^t \qquad \text{(A.11)}$$

In the equilibrium, both equations (A.10) and (A.11) should be satisfied.

Case 1: the expected earnings of the target firm and the peer firm are similar. In the extreme case, we can assume $\Delta\eta_t$ is 0,

Taking the difference between (A.10) and (A.11), we have

$$b_t\Phi\left(\frac{m_{i,t} - m_{p,t}}{\sqrt{2}\sigma}\right) - b_t\Phi\left(\frac{m_{p,t} - m_{i,t}}{\sqrt{2}\sigma}\right) = 2c_t\left(m_{i,t} - m_{p,t}\right) + \frac{\lambda_i - \lambda_p}{\beta^t} \qquad \text{(A.12)}$$

Since $\Phi(-x) = 1 - \Phi(x)$, equation (A.12) is equivalent to

$$\Phi\left(\frac{m_{i,t} - m_{p,t}}{\sqrt{2}\sigma}\right) = \frac{c_t}{b_t}\left(m_{i,t} - m_{p,t}\right) + \frac{1}{2}\left(1 + \frac{\lambda_i - \lambda_p}{b_t\beta^t}\right) \qquad \text{(A.13)}$$

Denote $x = \frac{m_{i,t} - m_{p,t}}{\sqrt{2}\sigma}$, then we need to solve for *x* in the following equation

$$\Phi(x) = \frac{c_t}{b_t}\sqrt{2}\sigma x + \frac{1}{2}\left(1 + \frac{\lambda_i - \lambda_p}{b_t\beta^t}\right) \qquad \text{(A.14)}$$

The solution would be in the intersection of y=$\Phi(x)$ and y=$\frac{c_t}{b_t}\sqrt{2}\sigma x + \frac{1}{2}\left(1 + \frac{\lambda_i - \lambda_p}{b_t\beta^t}\right)$. *y*=$\Phi(x)$ is CDF of the standard normal distribution and $y = \frac{c_t}{b_t}\sqrt{2}\sigma x + \frac{1}{2}\left(1 + \frac{\lambda_i - \lambda_p}{b_t\beta^t}\right)$ is a liner function of *x*. Since the target firm and the peer firm face exactly the same incentives and shocks, we expect that $\lambda_i = \lambda_p = \lambda$. In this case, $\Phi(x)$ and $\frac{c}{b}\sqrt{2}\sigma x + \frac{1}{2}$ intersect at the point (0,1/2) and *x*=0 is at least one solution. In that case,

$m_{i,t}^* - m_{p,t}^* = 0$. Substituting $m_{i,t}^* - m_{p,t}^* = 0$ into equations (A.10) and (A.11), the optimal solution for $m_{i,t}$ and $m_{p,t}$ in the equilibrium is:

$$m_{i,t}^* = m_{p,t}^* = \frac{b_t/2 - \lambda/\beta^t}{2c_t} \qquad \text{(A.15)}$$

In this case, the target firm and the peer firm would manage the same amount of earnings in the equilibrium, consistent with our hypothesis of the contagion effect between the target firm's earnings management and that of the peer firm's. The level of the management is higher as the reward increases and the penalty reduces.

Case 2: $\Delta\eta_t$ is much greater than 0, i.e., earnings of the target firm are expected to perform much stronger than the peer firm, then

$\Phi\left(\frac{\Delta\eta_t + m_{i,t} - m_{p,t}}{\sqrt{2}\sigma}\right) \to 1$ and the equilibrium $m_{i,t}^* \to \frac{b - \lambda_i/\beta^t}{2c}$, while

$\Phi\left(\frac{-\Delta\eta_t + m_{p,t} - m_{i,t}}{\sqrt{2}\sigma}\right) \to 0$ and $m_{p,t}^* \to -\frac{\lambda_p/\beta^t}{2c}$

Case 3: $\Delta\eta_t$ is much lower than 0, then

$\Phi\left(\frac{\Delta\eta_t + m_{i,t} - m_{p,t}}{\sqrt{2}\sigma}\right) \to 0$ and the equilibrium $m_{i,t}^* \to -\frac{\lambda_i/\beta^t}{2c}$, while

$\Phi\left(\frac{-\Delta\eta_t + m_{p,t} - m_{i,t}}{\sqrt{2}\sigma}\right) \to 1$ and $m_{p,t}^* \to \frac{b - \lambda_p/\beta^t}{2c}$

In these two cases, $m_{i,t}^*$ and $m_{p,t}^*$ have little relationship leading to the prediction in Hypothesis 2.

Table A1: The impact of experiencing extreme earnings surprises on the covariation of the earnings management level of the target firm with that of its median peer firm

VARIABLES	(1) Mod Jones Accruals	(2) Mod Jones Accruals
1/AT	88.566	83.313
	(106.178)	(105.708)
ΔREV-ΔREC	0.256	0.252
	(0.255)	(0.254)
PPE	0.047	0.056
	(0.081)	(0.082)
BM	0.103	0.124*
	(0.069)	(0.068)
Size	0.028	0.026
	(0.028)	(0.028)
ROA	0.501	0.454
	(0.569)	(0.576)
Return	0.079	0.086
	(0.074)	(0.078)
EarningsVol	0.203	0.136
	(1.217)	(1.217)
Leverage	0.002	0.001
	(0.021)	(0.020)
Med Peer DAM	0.923***	0.945***
	(0.108)	(0.109)
EES-Dummy	-0.047	-0.039
	(0.121)	(0.068)
Med Peer DAM × EES-Dummy	-0.344***	-0.407***
	(0.131)	(0.128)
Constant	-0.466	-0.431
	(0.350)	(0.345)
Observations	1,355	1,355
R-squared	0.387	0.391
FE	Industry+Year	Industry+Year

This table examines how the covariation of earnings management behavior of the target firm with the earnings management behavior of its median peer firm changes when the target firm experiences extreme earnings surprises. The table reports results of annual regressions where the dependent variable is the discretionary accrual for target firms. Discretionary accrual measures for all firms are computed using the modified Jones measure without intercept. Every period we rank firms based on their surprise unexpected earnings (SUE). Based on this ranking, we assign a value of one to the *Extreme Earnings Surprise Dummy (EES-Dummy)* if the target firm's SUE ranks either in the top 5^{th} (10^{th}) percentile or in the bottom 5^{th} (10^{th}) percentile of all SUE's. Column 1 (2) reports the regression results where the EES-Dummy is equal to 1 if the target firm's earnings surprise falls into either the top or the bottom 5^{th} (10^{th}) percentile of the earnings surprise in the sample. Both models (1) and (2) control for industry and year fixed effects. Table 1 describes the independent variables used in the regressions in further detail. Standard errors are reported in parentheses and calculated after adjusting for firm-level clustering. Significance is denoted by ***, **, and * at the 1%, 5%, and 10% levels respectively, using two-tailed tests.

Table A2: Firm characteristics of Target firms and other firms

Panel A: Individual characteristics

Variable	Target Firms	Peers	Non-selected	RPE–Peers	RPE–Non-selected
Size	9.234	9.231	5.811	0.003	3.423***
BM	0.643	0.882	1.388	-0.239	-0.745**
Return 3y	0.161	0.151	0.132	0.009	0.029
Std	0.314	0.316	0.464	-0.002	-0.150
Beta	1.164	1.152	1.276	0.012	-0.112
IOR	0.594	0.593	0.251	0.001	0.343
HHI	0.054	0.057	0.059	-0.002	-0.004

Panel B: Joint characteristics

Variable	Peers	Non-selected	Peers – Non-selected
Correlation	0.545	0.286	0.259
Same SIC-1	0.727	0.117	0.610***
Same S&P500	0.672	0.491	0.181
Same S&P1500	0.722	0.316	0.407

This table reports summary statistics of individual firm characteristics for all firms that use relative performance evaluation in executive compensation contracts (target firms), for the peers of such target firms as well as for all other firms that are covered by CRSP and COMPUSTAT but are not peers (denoted as Non-selected). A firm is denoted Non-selected if it is not listed as a peer of the target firm in focus. Panel A reports the mean values for firm size (*Size*), book-to-market ratio (*BM*), average annual return over the past three years (*Return 3y*), annual volatility (*Std*), CAPM-beta (Beta), institutional ownership ratio (*IOR*) as well as customer concentration (*HHI*)for target firms, their peers and all other non-peer (Non-selected) firms, as well as the mean differences target RPE firms and their peers, and the difference between target firms and non-selected firms. Panel B reports the summary statistics for joint characteristics between target firms and their peers as well as between target firms and non-selected firms as well as the differences between these pairings. We report return correlations between these alternative pairings as well as their likelihood of belonging to the same one digit SIC industry, S&P 500 index and S&P 1500 index. Table 1 describes the variables used in further detail. Statistical significance is denoted by ***, **, and * at the 1%, 5%, and 10% levels respectively, using two-tailed tests.

Table A3: Determining counterfactual peers

VARIABLES	(1) Peer dummy	(2) Peer dummy	(3) Peer dummy
Correlation	5.228***	4.076***	4.116***
	(0.044)	(0.096)	(0.095)
Sizediff	0.319***	0.534***	0.537***
	(0.004)	(0.009)	(0.008)
BMdiff	-0.118***	-0.120***	
	(0.005)	(0.007)	
Return 3ydiff	0.049***	0.026	
	(0.014)	(0.032)	
Stddiff	-0.997***	-0.998***	
	(0.051)	(0.099)	
Betadiff	0.030***	-0.013	
	(0.011)	(0.022)	
IORdiff	0.480***	0.583***	
	(0.020)	(0.040)	
HHIdiff	-0.138***	-0.218**	
	(0.048)	(0.097)	
ROAdiff	0.547***	0.794***	
	(0.063)	(0.127)	
Same Industry	2.704***	2.669***	2.654***
	(0.016)	(0.031)	(0.030)
SameS&P500	0.566***	0.522***	0.496***
	(0.015)	(0.030)	(0.029)
SameS&P1500	0.841***	0.751***	1.022***
	(0.017)	(0.031)	(0.029)
Constant	-8.818***	-2.720***	-2.980***
	(0.043)	(0.084)	(0.082)
Sample	Full sample	1 to 1 sample	1 to 1 sample
# of Observations	6,350,100	53,869	53,869
Pseudo R-squared	0.328	0.553	0.532
FE	Industry+Year	Industry+Year	Industry+Year

This table reports logistic regression results where the dependent variable is the *Peer dummy* which equals one if a matched firm is an actual RPE peer of the firm studied and zero otherwise. In model (1), we match each target firm-year with all possible firms in that year that have corresponding data on CRSP and Compustat as long as the matched firm is at least as large as the smallest peer of the target firm in that year. This setup yields an N x M matrix which implies multiple pairings between each target firm and peers to match from a larger set of candidates. We collapse this N x M matrix of all possible matches into an [N*M] x K matrix where [N*M] rows correspond to all the one-to-one matches between target firms and the universe of potential matches, while K columns include information regarding the independent and dependent variables utilized in this table. In models (2) and (3), we limit the sample size by randomly matching each target peer firm to a single potential matching firm. Loading on characteristics that determine the likelihood of being a peer firm are then used to determine counterfactual peers. Table 1 describes the independent variables used in the regressions in further detail. Standard errors are reported in parentheses and calculated after adjusting for firm-level clustering. Significance is denoted by ***, **, and * at the 1%, 5%, and 10% significance levels respectively, using two-tailed tests.

Table A4: Correlations between different measures of DAM

	RPE DAM	Med Peer DAM	Med industry DAM	Med Counter-factual DAM (1)	Med Counter-factual DAM (2)	Med Counter-factual DAM (3)	Med Dropped DAM
Med Peer DAM	0.640	1					
Med industry DAM	0.680	0.559	1				
Med Counterfactual DAM (1)	0.663	0.736	0.584	1			
Med Counterfactual DAM (2)	0.530	0.655	0.601	0.803	1		
Med Counterfactual DAM (3)	0.524	0.629	0.545	0.786	0.803	1	
Med Dropped DAM	0.199	0.289	0.240	0.238	0.235	0.248	1
Med Peers' Peer DAM	0.215	0.276	0.211	0.273	0.326	0.312	0.137

This table reports correlations among the target firm's discretionary accruals (*RPE DAM*), median discretionary accruals of peers (*Med Peer DAM*), median discretionary accruals of the industry (*Med industry DAM*), *Med Counterfactual DAM 1 (2, 3)*, which are median discretionary accrual values of counterfactual peers when the counterfactual peers are estimated using model 1 (2, 3) in Table 6, the median of discretionary accruals of peers that are dropped in the former period (*Med Dropped DAM*), and ßthe median of discretionary accruals of peers' peers (*Med Peers' Peer DAM*).

Table A5: The Effect of Early Reporting

VARIABLES	(1) Mod Jones Accruals	(2) Mod Jones Accruals	(3) Mod Jones Accruals
Sample	Early reporters	Late reporters	Full sample
1/AT	234.999	-12.734	-12.950
	(240.641)	(81.730)	(52.348)
ΔREV-ΔREC	0.501**	0.040	0.076
	(0.204)	(0.384)	(0.165)
PPE	-0.010	0.147	0.073
	(0.104)	(0.160)	(0.074)
BM	0.081	0.104	0.097*
	(0.076)	(0.101)	(0.052)
Size	0.016	0.040	0.009
	(0.032)	(0.043)	(0.026)
ROA	0.056	1.129	0.672
	(0.832)	(0.787)	(0.536)
Return	0.093	0.082	0.087
	(0.095)	(0.144)	(0.072)
EarningsVol	1.143	0.686	0.465
	(2.323)	(1.456)	(1.233)
Leverage	-0.061*	0.023	-0.015
	(0.036)	(0.028)	(0.020)
Med Peer DAM	1.041***	0.786***	1.013***
	(0.190)	(0.109)	(0.190)
Report Late Dummy			0.037
			(0.048)
Med Peer DAM × Report Late Dummy			-0.205
			(0.209)
Constant	-0.238	-0.694	-0.267
	(0.373)	(0.567)	(0.301)
Observations	694	661	1,469
R-squared	0.418	0.377	0.385
FE	Industry+Year	Industry+Year	Industry+Year

This table examines the impact of reporting timing on the negative effect of extreme earnings surprises on the contagion between the discretionary accruals of target firms and peer firms. Each year, we compute the percentage of peers that report later than the target firm. Based on the median of this percentage for all target firms, i.e., 51.6%, we divide the full sample into two subsamples. Model (1) uses the subsample of the target firms that report earlier than 51.6% of their peers, Model (2) uses the

subsample that report later than 51.6% of peers, and Model (3) uses the full sample with the Report Late Dummy which equals one if the target firm reports later than the median peer and zero otherwise. Table 1 describes the independent variables used in the regressions in further detail. Standard errors are reported in parentheses and calculated after adjusting for firm-level clustering. Significance is denoted by ***, **, and * at the 1%, 5%, and 10% levels respectively, using two-tailed tests.

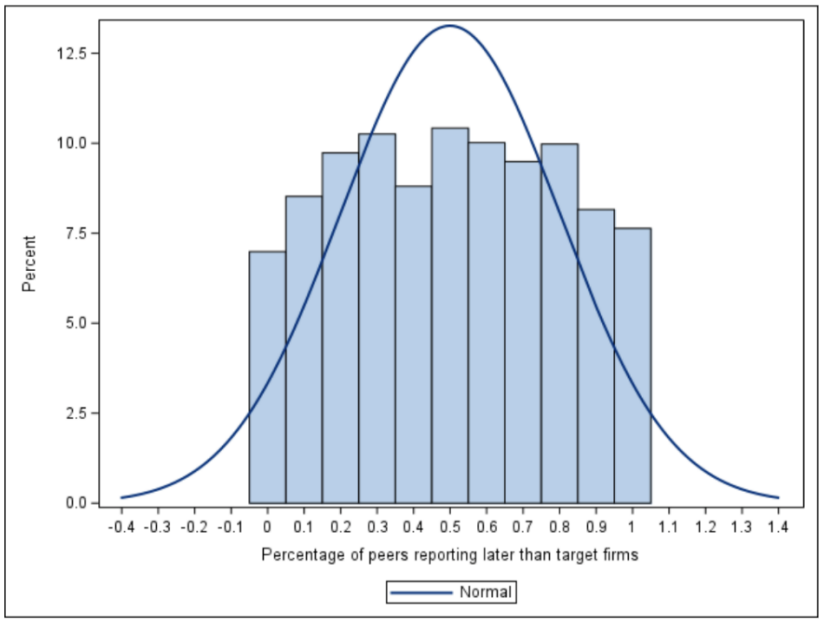


Figure A1: Percentage of peers reporting later than target firms

This figure reports the distribution of the percentage of peers reporting later than target firms. For each target firm, we compute the percentage of peers reporting later than it every year. X-axis represents this percentage. Y-axis is its probability distribution across all target firms.

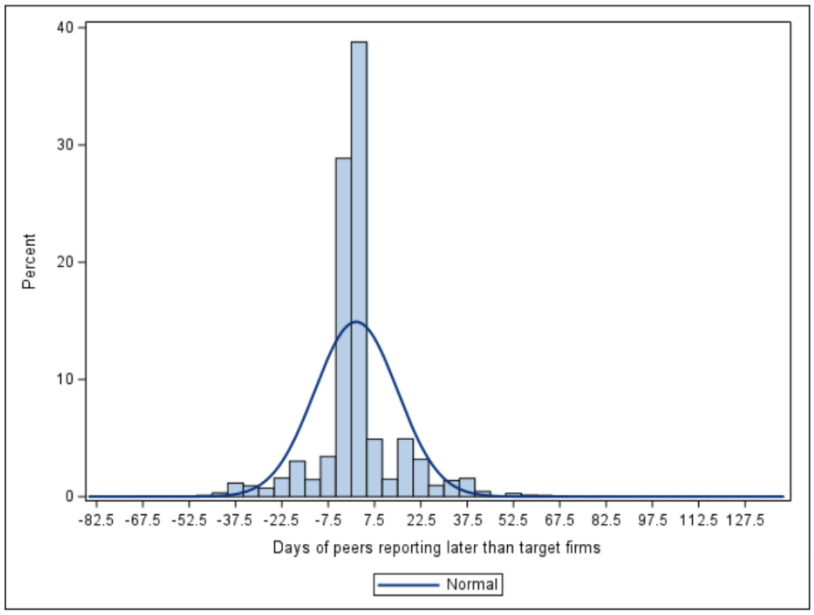


Figure A2: Number of days of peers reporting later than target firms

This figure reports the distribution of the number of days that peer firms report later than target firms. For each target firm, we compute the number of days that peer firms report later than it every year. Bin sizes are 5 days. A positive number indicating peers report later than target firms and negative number indicating peers report earlier.