

# **Protecting Wall Street or Main Street: SEC Monitoring and Enforcement of Retail-Owned Firms**

Michael Iselin  
miselin@umn.edu  
University of Minnesota

Bret Johnson  
bjohns37@gmu.edu  
George Mason University

Jacob Ott  
ottxx161@umn.edu  
University of Minnesota

Jacob Raleigh  
ralei022@umn.edu  
University of Minnesota

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# **Protecting Wall Street or Main Street: SEC Monitoring and Enforcement of Retail-Owned Firms**

## **Abstract**

This study examines whether the percentage of retail ownership of a firm is associated with the likelihood that the firm is subject to monitoring and enforcement by the two largest divisions of the SEC. We find a *negative* association between retail ownership percentage and SEC monitoring. In contrast, we find a *positive* association between retail ownership percentage and SEC enforcement. We acknowledge that the objective function of the SEC in terms of monitoring and enforcement of corporate registrants is complex and nuanced, and we do not contend that these associations are at all causal. However, the results suggest that the SEC is less likely to monitor firms with high retail ownership, potentially leaving retail investors more vulnerable to unresolved financial reporting issues. At the same time, the SEC is more likely to enforce upon firms with high retail ownership, potentially harming retail investors when the firm is accused of egregious cases of perceived financial misreporting.

## **1. Introduction**

The mission of the Securities and Exchange Commission (SEC) is to protect investors and maintain fair and orderly markets. This includes addressing information asymmetry problems between firms and investors, to which individual investors are particularly vulnerable. The SEC Chairman, Jay Clayton, even said, “Serving and protecting Main Street investors is my main priority at the SEC.” The SEC accomplishes this objective through a variety of policies and programs including but not limited to Regulation Fair Disclosure, the formation of the SEC’s Office of Investor Education and Advocacy, and the free public dissemination of corporate filings through the EDGAR database. What is less clear is whether the actions of the Division of Corporation Finance (DCF) and the Division of Enforcement (DOE), which play distinct roles at the SEC and are its primary points of contact with corporate registrants, also “serve and protect Main Street investors.” This paper investigates whether the monitoring and enforcement decisions of these two divisions are associated with the extent of retail ownership of the firm.

The primary role of DCF is to ensure that firms provide investors with material information to make informed investment decisions. This is a monitoring role that is largely accomplished through periodic reviews of firms’ public filings to ensure they are prepared in compliance with disclosure and accounting requirements. Through this review process DCF often issues advisory comment letters to firms, recommending specific changes to the firm’s disclosures to help ensure conformity with SEC regulatory standards. Receipt and remediation of these comment letters is not costless to the firm, but prior literature suggests that this monitoring process helps resolve current issues before they rise to the level of misreporting and may even help prevent more egregious financial reporting issues in the future (Heese et al., 2017).

The primary role of DOE is to investigate possible violations of securities laws and to prosecute fraud. If a firm becomes the subject of a DOE investigation, the role of the SEC is no longer advisory, as is the case with a comment letter from DCF, and will shift to punitive should wrongdoing be discovered. In line with this distinction, prior literature suggests that attention from DOE in the form of an investigation (Blackburne, Bozanic, Johnson, and Roulstone, 2020a) or an Accounting and Auditing Enforcement Release (AAER) (Correia, 2014; Heese, Khan, and Ramanna, 2017; Heese, 2019) are unambiguously negative events for shareholders. However, although receipt of a comment letter imposes costs on the firm to remediate (Cassell, Dreher, and Myers, 2013) they tend to improve the firm's information environment (Johnston and Petacchi, 2017; Bozanic, Dietrich, and Johnson, 2017) and generally do not result in a significant negative market reaction (Dechow, Lawrence, and Ryans, 2016).

This distinction between DCF and DOE in terms of how resource allocation at the SEC potentially affects shareholders at the supervised firms makes it important to examine outcomes of both divisions to understand the association between the SEC's interaction with corporate registrants and their stated preference of protecting retail investors. Unfortunately, beyond the high-level SEC budget, resource allocation decisions within divisions are unobservable. However, we are able to observe multiple outcomes that are associated with the resource allocation decisions of both DCF and DOE.

We measure monitoring decisions of DCF with three separate proxies. First, we examine SEC-initiated downloads of the firm's disclosure filings from EDGAR. This is an ex-ante measure of SEC attention that does not require any potential wrongdoing on the part of the firm. Although these downloads likely capture a mixture of attention from both DCF and DOE, we posit that they predominantly represent a DCF monitoring role due to the relative infrequency of DOE

investigations.<sup>1</sup> Next, we examine the initiation of periodic filing reviews by DCF, which is also an ex-ante measure of monitoring and is directly attributable to DCF. Finally, we examine the likelihood that a firm receives a comment letter from DCF as an ex-post measure of SEC oversight. Even though this final proxy (comment letter receipt) is the most observable, one disadvantage is that it requires that there exists some form of potential deficiency in the firm's filings.

To identify the enforcement decisions of DOE, we rely on two different proxies. We examine the likelihood that a firm undergoes a DOE investigation and the likelihood that a firm receives an AAER. These measures both explicitly represent enforcement by DOE, but unlike DCF reviews, they suffer from the critique that the opening of an investigation and the issuance of an AAER require some initial perceived or actual wrongdoing on the part of the firm. To address this shortcoming, we condition on the presence of perceived wrongdoing in the form of a financial statement restatement and examine the likelihood of DOE action in the wake of this wrongdoing.

The SEC's stated focus on "Main Street," or retail investors, is because they are at a perceived informational disadvantage when it comes to making investment decisions. We identify retail ownership as all shares that are not owned by either institutions or insiders. We recognize that this definition excludes pension funds and mutual funds where oftentimes the ultimate stakeholders are individuals, but we intentionally exclude those shares from our definition of retail ownership for two reasons. First, when individuals invest through a mutual fund or pension fund, the fund managers make the ultimate investment decisions. These fund managers have experience, expertise, and other resources to evaluate different investment opportunities that retail investors

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<sup>1</sup> Downloads of disclosure filings from EDGAR have been used as a measure of regulatory oversight of several different agencies including the IRS (Bozanic, Hoopes, Thornock, and Williams, 2017), the Federal Reserve (Li, Lind, Ramesh, and Shen, 2017), and the SEC itself (Stice-Lawrence, 2019; Holzman, Marshall, and Schmidt, 2020). See Stice-Lawrence (2019) for a discussion of this measure as it relates specifically to SEC monitoring along with evidence of its association with the work of DCF (e.g., SOX 408 review priorities and SEC comment letters). Note that Holzman, et al. (2020) also use these data as a proxy for attention by DOE but only after conditioning on the presence of an open investigation, which are much less common than DCF reviews.

that directly choose their own investments often lack. Second, when retail owners invest through a mutual fund or a pension fund, it is highly unlikely that they are researching the SEC filings of all the individual firms that the fund owns, but instead are likely investing based on metrics such as past fund returns, expense ratios and other fees, investment style, or risk tolerance of the fund. For these reasons we argue that the retail owners that are most affected by the quality of information in SEC filings are those owners that directly invest in individual equities.

We realize that both institutions and retail owners likely have preferences for certain types of firms (i.e. clientele effects documented in Hartzell and Starks (2003) among others) which might result in firms with high levels of retail ownership and firms with low levels of retail ownership differing across several other dimensions that may be correlated with the likelihood of SEC intervention. Thus, we use propensity score matching in an effort to mitigate concerns about clientele effects and other observable differences between these types of firms. Consistently, across all three proxies for monitoring by DCF (SEC-initiated EDGAR downloads, filing reviews, and comment letters), our evidence suggests that DCF tends to allocate *fewer* resources to monitor firms with a larger presence of retail owners. On the other hand, we find that DOE tends to allocate *more* resources to investigate and bring enforcement actions upon these same firms across both proxies for enforcement (investigations and AAERs).<sup>2</sup> As stated previously, the results concerning DOE enforcement are conditional on the presence of a restatement which partially alleviates the concern that retail ownership is associated with poorer governance, and thus a higher likelihood of wrongdoing in the first place. A separate concern is that institutional investors are more able to foresee problems and sell off shares in firms that will likely be subject to an investigation or an

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<sup>2</sup> While one may argue greater enforcement by DOE is indicative of better investor protection in the long-run, we view these enforcement actions as being consistent with financial harm to the current investors of the investigated firm in terms of monetary and reputational penalties, disruption to operations, and declines in firm value consistent with Correia (2014), Heese, et al. (2017), Heese (2019), and Blackburne et al. (2020a).

AAER prior to these events. This would lead to similar results to what we document, however, we observe no differential trend in ownership characteristics between firms subject to an investigation or an AAER and firms not subject to these events in the five years prior to the restatement.

Together, these results suggest that the actions of DCF and DOE, the two largest divisions within the SEC and the two primary points of contact with corporate registrants, tend to result in less protective monitoring and more punitive enforcement of firms with higher retail ownership. We acknowledge that DCF and DOE both have a myriad of objectives they consider when making resource allocation decisions and *we do not contend* that either division intentionally devotes fewer resources to firms with larger concentrations of retail ownership. However, the evidence suggests that in weighing these different objectives, the ultimate resource allocation decisions of these two divisions are consistent with being slow to protect and quick to punish “Main Street” investors.<sup>3</sup>

These results are subject to several caveats. First, we examine only two regulatory roles of the SEC: monitoring and enforcement of DCF and DOE. We do not consider the SEC’s regulatory efforts within the functions of other SEC divisions or offices, such as investor education and advocacy or other regulatory mechanisms. We readily admit that these other divisions and offices have instituted programs specifically designed to protect retail investors. Second, our empirical tests only show an association between retail ownership and monitoring and enforcement. We do not claim a causal relationship and in fact believe a more likely case is that these associations are inadvertent rather than intentional, as the need to balance many competing priorities of the SEC may put pressure both for and against protecting retail investors. Third, even though we employ a combination of ex-ante and ex-post measures of SEC monitoring and enforcement, like prior

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<sup>3</sup> One plausible mechanism discussed in Duro, Heese, and Ormazabal (2019) is the presence of institutional investors increasing reputation costs for the SEC staff and incentivizing them to exert more monitoring effort in what the authors call a “supervisory discipline” governance mechanism.

papers in this area, all our proxies are subject to a partial observability problem. We cannot fully know which firms were considered for a review or an investigation or what factors went into the ultimate decisions of which firms to pursue. Finally, SEC comment letters and restatements do not necessarily imply financial misreporting on the part of the firm; however, we do our best to control for other known determinants of comment letters and restatement characteristics to identify the association between retail ownership and regulatory monitoring and enforcement.

These caveats notwithstanding, our paper contributes to the academic literature on financial regulation by examining the extent to which the resource allocation decisions of the two largest divisions of the SEC protect “Main Street” investors. This examination helps shed light on the black box of how the SEC fulfills its investor protection mandate by providing evidence on *which investors* are the focus of its monitoring and enforcement initiatives. This focus on ownership characteristics also contributes to the literature that examines the determinants of SEC comment letters and DOE investigations and AAERs, which generally focus on firm characteristics (Cassell, et al., 2013; Kedia and Rajgopal, 2011; Files, 2012; Peterson, 2012). We find that monitoring by DCF, which can mitigate minor reporting deficiencies and improve a firm’s information environment, is negatively associated with retail ownership while punitive investigations and AAERs issued by DOE are positively associated with retail ownership. These findings should be of interest to the SEC. We do not believe these are causal relations, but to the extent that the SEC is interested in “serving and protecting Main Street investors,” DCF and DOE should consider the evidence presented in this study in rebalancing the multitude of priorities when making resource allocation decisions to explicitly address ownership characteristics.



## **2. Background, literature review and hypothesis development**

### *2.1 Background and literature review*

The SEC is organized into five larger functional units called divisions and 24 smaller functional units called offices, each with distinct regulatory roles and functions. The five main divisions are DCF, DOE, the Division of Trading and Markets, the Division of Investment Management, and the Division of Economic and Risk Analysis.<sup>4</sup> In addition to the Division of Investment Management which regulates investment companies and investment advisors, some of the SEC offices that are directly involved in protecting retail investors are the Office of the Investor Advocate and the Office of Investor Education and Advocacy. We acknowledge that these offices explicitly consider retail investors in their regulatory efforts, however, we focus solely on DCF and DOE, because these are the largest divisions, making up about 40% of the SEC's total budget in terms of both full-time employees and dollars appropriated, and they represent the SEC's primary points of contact with corporate registrants.

The regulatory roles of these two divisions have been the subject of several academic studies. These papers tend to focus on the primary output of the monitoring efforts of DCF, the issuance of SEC comment letters, or the primary output of the enforcement efforts of DOE, Accounting and Auditing Enforcement Releases (AAERs). Prior papers examine the determinants of these monitoring and enforcement outputs and generally focus on firm characteristics. Cassell, et al. (2013) finds that previous restatements or material weaknesses, stock volatility, low profitability, size, high complexity, and weak governance are all positively associated with the probability of receiving a comment letter. Kedia and Rajgopal (2011) finds that firms located closer to SEC offices are more likely to be subject to enforcement actions. Files (2012) finds that

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<sup>4</sup> See Appendix A for a diagram of the SEC Organizational Chart.

firms that cooperate with the SEC are more likely to be sanctioned via an enforcement action, but are also subject to smaller monetary penalties. Peterson (2012) finds that firms with more complex accounting are more likely to restate reported revenue; however, the accounting complexity mitigates the likelihood of receiving an AAER. In contrast to these studies that focus on firm characteristics, we investigate whether ownership characteristics (i.e., the percentage of retail ownership) of an individual firm are associated with the likelihood of being subject to SEC monitoring or enforcement.

Some papers examine the association between aspects of other individuals' involvement with firms and SEC activity. Specifically, Correia (2014) and Yu and Yu (2011) both find evidence of a negative association between political connections of top management and enforcement actions issued by DOE. However, as it relates to comment letters coming from DCF, Heese, et al. (2017) discusses the tradeoff between the functions of DCF and DOE relating to regulatory capture. They find that in contrast to the prior literature on DOE, political connections *positively* predict SEC comment letters from DCF. They suggest that the most likely explanation for the apparently contrasting findings is that political connectedness might be a useful heuristic for issues DCF seeks to address through comment letters and these comment letters help resolve issues before the rise to the level where they draw enforcement attention by DOE. Similar to the broader call for more research on the interaction between various regulatory roles in Leuz and Wysocki (2016), Heese, et al. (2017) encourage researchers to further examine the interaction between the regulatory roles of these two primary SEC divisions.

## *2.2 Hypothesis development*

As previously stated, SEC Chairman Jay Clayton is quoted as saying, "Serving and protecting Main Street investors is my main priority at the SEC." Many other speeches and public

documents of the SEC echo this sentiment. This focus on “Main Street,” or retail investors, potentially serves to “level the playing field” and reduce the variation in information asymmetry that exists between investors and firms. Reducing the information asymmetry allows these investors to more confidently participate in the capital markets. The SEC engages in many activities that are clearly in line with the goal of serving and protecting retail investors. These initiatives include the establishment of the Office of Investor Education and Advocacy, the implementation of Regulation Fair Disclosure, and the free public dissemination of corporate disclosure filings via the SEC’s online EDGAR database to name a few. Thus, it is also plausible that this focus on retail investors is associated with resource allocation decisions of DCF and DOE.

Even though the SEC as a whole is quite vocal about the desired focus on retail investors, DCF does not publicly disclose its priorities as to which companies it will select as a target for the filing review process each year. The SEC website states, “To preserve the integrity of the selective review process, the Division does not publicly disclose the criteria it uses to identify companies and filings for review” (SEC 2019). Companies do know, however, that under SOX 408, their periodic filings will be subject to review at least once every three years, and although there are five explicit criteria for prioritizing these reviews, none of them are directly related to ownership characteristics. The five SOX 408 criteria are prior restatements, stock price volatility, market capitalization, emerging companies, and material operations to a sector of the economy.

If the weighted priorities of DCF are consistent with public statements and other policies focused on retail investors, then we would expect to observe a positive association between retail ownership and SEC monitoring. However, there may be offsetting or competing priorities (e.g. the SOX 408 criteria) such that retail ownership does not play a primary role, which could manifest in

either a negative association or no association. For this reason, we state our first hypothesis in the null as follows:

**H1:** *The level of retail ownership of the firm is not associated with the likelihood that the firm is subject to regulatory **monitoring** by the Division of Corporation Finance.*

In contrast to the opacity surrounding the selection of firms for review by DCF, the SEC publicly discloses the priorities for DOE in its Enforcement Manual (SEC 2017). However, it is unclear whether and how most of these priorities relate to retail investors.<sup>5</sup> For example, when determining the priority for a potential investigation, the SEC Enforcement Manual states that the staff should consider whether the matter involves potentially widespread and extensive harm to investors. However, it is unclear whether the SEC staff would consider a firm with highly dispersed retail ownership as having a widespread impact or a firm with highly concentrated institutional ownership, where many of the shareholders are pensions or mutual funds who are investing on behalf of tens of thousands of individuals. Of all the priorities listed in the SEC Enforcement Manual, the one that most clearly points towards focusing on retail investors is the consideration of whether the matter involves a substantial number of potential victims and/or *particularly vulnerable victims*.

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<sup>5</sup> The nine criteria explicitly stated in the Enforcement Manual are as follows: 1) Whether the matter presents an opportunity to send a particularly strong and effective message of deterrence, including with respect to markets, products and transactions that are newly developing, or that are long established but which by their nature present limited opportunities to detect wrongdoing and thus to deter misconduct. 2) Whether the matter involves particularly egregious or extensive misconduct. 3) Whether the matter involves potentially widespread and extensive harm to investors. 4) Whether the matter involves misconduct by persons occupying positions of substantial authority or responsibility, or who owe fiduciary or other enhanced duties and obligations to a broad group of investors or others. 5) Whether the matter involves potential wrongdoing as prohibited under newly-enacted legislation or regulatory rules. 6) Whether the potential misconduct occurred in connection with products, markets, transactions or practices that pose particularly significant risks for investors or a systemically important sector of the market. 7) Whether the matter involves a substantial number of potential victims and/or particularly vulnerable victims. 8) Whether the matter involves products, markets, transactions or practices that [DOE] has identified as priority areas. 9) Whether the matter provides an opportunity to pursue priority interests shared by other law enforcement agencies on a coordinated basis.

The above discussion highlights the possibility that retail ownership characteristics might play a role in the decision process of whether or not to pursue an investigation or issue an enforcement action against a firm. However, it also addresses reasons why those characteristics might not enter the decision process or that some of the differing priorities are likely to conflict with one another. For this reason, we state our second hypothesis in the null as follows:

**H2:** *The level of retail ownership of the firm is not associated with the likelihood that the firm is subject to regulatory **enforcement** by the Division of Enforcement.*

### 3. Research design

Our interest is in the association between retail ownership and SEC monitoring and enforcement and we realize that firms with high versus low retail ownership may differ across other observable metrics that are correlated with potential intervention by the SEC. In an effort to mitigate concerns that differences in these observable characteristics might hinder our ability to draw appropriate inferences we construct propensity score matched samples for each of our tests. The main variable of interest is *Retail%*, which is the total retail ownership of the firm during the prior year. Specifically, *Retail%* is computed by adding total institutional ownership and total insider ownership and assuming the remaining ownership is composed of retail owners (i.e.  $Retail\% = 1 - (Inst\% + Insider\%)$ ). *Inst%* is measured using the Thomson S13 database and *Insider%* is measured using the Execucomp database.

To generate our monitoring sample, we create a variable *High Retail* which is equal to one for observations with *Retail%* greater than the sample median and zero otherwise. We then estimate the following propensity score model.

$$\begin{aligned}
 High\ Retail = & \delta_0 + \delta_1 Insider\% + \delta_2 Restate + \delta_3 Lag\ Restate + \delta_4 Size + \delta_5 Sales\ Growth + \delta_6 MTB \\
 & + \delta_7 Firm\ Age + \delta_8 Loss + \delta_9 Low\ MTB + \delta_{10} Zscore + \delta_{11} M\&A + \delta_{12} Restructuring + \delta_{13} External \\
 & Financing + \delta_{14} Lit\ Industry + \delta_{15} BIG4 + \delta_{16} High\ Volatility + \delta_{17} CEO\ Chair + \delta_{18} CEO\ Tenure + \\
 & \delta_{19} Retail\ Industry + \delta_{20} Fortune\ 500 + \delta_{21} Advertising + \gamma_i + \varepsilon
 \end{aligned}
 \tag{1}$$

After estimating this regression, we save the predicted values for each observation as the propensity score. We then match each treatment firm (*High Retail* = 1) to a control firm (*High Retail* = 0) in the same year with the closest absolute difference in propensity scores. We require a caliper of less than 0.02 and match with replacement to maximize the similarity of the treated and control observations.

We build on prior literature that has developed models for the determinants of SEC monitoring including the SOX 408 criteria and other firm characteristics (Cassell, et al., 2013; Heese, et al., 2017) and include the following variables in the propensity score model. We include a binary variable that equals 1 if a firm has restated its financial statements in the current year (*Restate*) and another if the firm has restated its financial statements in the prior year (*Lag Restate*). We include the log of the firm's market capitalization (*Size*), and a binary variable that equals 1 if the volatility of the abnormal monthly stock returns for the firm over the prior year is in the top quartile for that year (*High Volatility*). These are all criteria that SOX 408 explicitly requires DCF to consider in prioritizing the periodic filing reviews. We also include the firm's market-to-book ratio (*MTB*) and a separate binary variable equal to 1 when a firm's market-to-book ratio is less than 1 (*Low MTB*) to control for a non-linear effect of the firm's growth expectations.

We include the log of the firm's age (*Firm Age*) as younger firms may have a higher tendency to misreport (Beneish 1997). Profitable firms generally have higher reporting quality. As such, we include a binary variable that equals 1 when the company reports a net loss in the current year (*Loss*). To control for the firm's level of financial distress, we include Altman's Z-Score (*Zscore*). The complexity of a company is positively associated with the likelihood of a review (Cassell, et al., 2013). As a result, we include the year-to-year sales growth (*Sales*

*Growth*), a binary variable that equals 1 when the firm engaged in a merger or acquisition (*M&A*), and a binary variable that equals 1 if the firm underwent restructuring (*Restructuring*). We include a firm's subsequent debt and equity issuance (*External Financing*), because firms with external financing needs are more likely to comply with mandatory disclosure standards (Ettredge, Johnstone, Stone, and Wang 2011). We include the litigious industry variable (*Lit Industry*) developed by Francis, Philbrick, and Schipper (1994) in order to control for industries that are subject to high scrutiny. Because clients of Big 4 auditors might commit fraud at a lower rate (DeFond 1992), we include a binary variable that equals 1 if the firm is audited by a Big 4 auditor (*BIG4*). In order to control for differences in corporate governance structures, we include a binary variable that is equal to 1 if the CEO is the board chair (*CEO Chair*) and a variable measuring the length of the CEO's tenure (*CEO Tenure*). The final three control variables represent three proxies for firm visibility, which could be associated with attracting attention by both retail investors and the SEC (Drake, Johnson, Roulstone, and Thornock 2020). We include the retail industry variable (*Retail Industry*) developed by Chakravarthy, deHaan, and Rajgopal (2014), which identifies industries that sell goods or services directly to consumers. Inclusion on the Fortune 500 index (*Fortune 500*) is also an indicator of firm visibility. Finally, we include the firm's advertising intensity (*Advertising*), which is calculated as annual advertising expense scaled by total sales.<sup>6</sup>

After developing our propensity score matched sample we then assess the association between SEC monitoring and retail ownership using the following regression. We include all the same control variables to orthogonalize our estimated effects from any remaining differences in the covariates even after the propensity score matching procedure.

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<sup>6</sup> We formally define all variables in detail in Appendix B.

$$\begin{aligned}
DCF\ Monitoring = & \beta_0 + \beta_1 Retail\% + \beta_2 Insider\% + \beta_3 Restate + \beta_4 Lag\ Restate + \beta_5 Size + \beta_6 Sales \\
& Growth + \beta_7 MTB + \beta_8 Firm\ Age + \beta_9 Loss + \beta_{10} Low\ MTB + \beta_{11} Zscore + \beta_{12} M\&A + \\
& \beta_{13} Restructuring + \beta_{14} External\ Financing + \beta_{15} Lit\ Industry + \beta_{16} BIG4 + \beta_{17} High\ Volatility + \\
& \beta_{18} CEO\ Chair + \beta_{19} CEO\ Tenure + \beta_{20} Retail\ Industry + \beta_{21} Fortune\ 500 + \\
& \beta_{22} Advertising + \gamma_t + \varepsilon
\end{aligned} \tag{2}$$

We include the continuous variable *Retail%* as the main variable of interest to take advantage of differences in the level of retail ownership across all firms in the sample. Because we also include *Insider%* in the regression we are able to interpret the coefficient estimate on *Retail%* as the change in the likelihood of monitoring as the result of a shift from institutional ownership to retail ownership.<sup>7</sup>

A primary mechanism that DCF employees use to obtain information about the firms they oversee is the publicly available EDGAR database. We are able to observe this access by identifying blocks of IP addresses owned by the SEC and examining when those IP addresses access specific filings on the EDGAR database using the EDGAR log files made public by the SEC. This acquisition of information about firms represents an ex-ante measure of SEC scrutiny and prior literature documents a correlation between downloads and measures of monitoring, such as the SOX 408 review criteria and SEC comment letters (Stice-Lawrence, 2019). We examine the relation between these SEC-initiated downloads of disclosure filings on EDGAR and retail ownership percentage as an initial attempt to determine whether ownership characteristics are associated with resource allocation decisions of DCF. One disadvantage of examining these SEC-initiated downloads of disclosure filings on EDGAR is that we are unable to link them directly to either DCF or DOE, however we posit that they predominantly represent a DCF monitoring role due to the relative infrequency of DOE investigations. Holzman et al.

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<sup>7</sup> We cluster standard errors by firm as we only have 10 years of data, which is an insufficient number of clusters and can result in erroneous inferences (Petersen 2009). Note also that we estimate an OLS regression when *Downloads* is the dependent variable and a probit regression when *Review*, or *10K Comment* is the dependent variable.



(2020) also use these data as a proxy of attention by DOE but only after conditioning on the presence of an open investigation, which are much less common than DCF reviews.

We initially estimate Equation (2) using three different variations of SEC-initiated downloads as the measure of *DCF Monitoring*. First, *Downloads* is the log of one plus the number of the total number of SEC-initiated downloads of the firm's disclosure filings on EDGAR during the year. This captures SEC access to any filing made by the firm at any point in the firm's history. Next, we use the log of downloads of only 10-K filings, *10K Downloads*. Finally, we use the log of downloads of only the most recently issued 10-K filing, *10K Downloads CY*.<sup>8</sup>

We then examine two other dependent variables in Equation (2) that represent more explicit monitoring by DCF, namely *Review* and *10K Comment*. *Review* is a binary variable that equals one if a firm undergoes a periodic filing review (including Form 10-K) and zero otherwise. To construct this variable, we obtain a comprehensive listing of all DCF reviews within our sample period via a FOIA request, regardless of whether a comment letter was issued.<sup>9</sup> *Review* is also an ex-ante measure of monitoring, and is directly attributable to DCF decisions.

*10K Comment* is a binary variable that equals one if a firm received a comment letter referencing their 10-K in the given year and zero otherwise. This proxy for DCF monitoring is an ex-post measure and relies on some potential reporting deficiency on the part of the firm. Ideally, we would condition on the presence of these perceived deficiencies to mitigate this source of endogeneity, however, we are unable to observe these deficiencies. Thus, in an effort to provide comfort in the inferences from this analysis we examine a specific characteristic of the comment

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<sup>8</sup> SOX 408 explicitly requires the SEC to review Form 10-K as part of their periodic review.

<sup>9</sup> In the absence of an SEC comment letter, there is no public disclosure that a review occurred. However, Henry Laurion from the University of Colorado obtained a comprehensive listing of all DCF reviews in our sample period regardless of whether a comment letter was issued via a Freedom of Information Act (FOIA) request and graciously shared this data with us.

review process. Conditional on receiving a comment letter there is variation in the number of back and forth iterations between the SEC and the registrant needed to satisfy the SEC’s inquiry, which we call rounds. If there is a true underlying association between retail ownership and the likelihood of receiving a comment letter then we would expect that conditional on receiving a comment letter there would be a similar association between retail ownership and the severity or significance of the comment letter, as measured by the number of rounds needed to resolve the issue.

In order to test this association, we modify Equation (2) by replacing *DCF Monitoring* with *Rounds*. *Rounds* is the number of letters from the SEC, from the first letter to the “completion of review” letter. We also add two comment letter-specific controls to both the propensity score model and the second stage regression: the number of filings reviewed (*Filings*) and the number of issues (*Issues*) referenced in the comment letter as more filings and more issues being reviewed likely results in a larger number of rounds needed to resolve the issues.

Our second hypothesis (H2) investigates the association between retail ownership and the likelihood of DOE enforcement. We realize that differences in the extent of retail versus institutional ownership may affect the likelihood of a firm committing wrongdoing that would warrant DOE enforcement in the first place. For example, if institutional investors are effective monitors of firm behavior, then firms where institutions own a large stake may be less likely to misreport. This would result in differences in the observable enforcement actions even though it does not represent differences in DOE’s allocation of resources. In an effort to mitigate this endogeneity concern, we condition our sample on the presence of a financial statement restatement as a proxy for alleged misreporting.

To test H2, we again first estimate a propensity score model to ensure that the high retail and low retail firms in our sample are as similar as possible along all important observable

dimensions. The propensity score model is similar to the model in Equation (1) with *High Retail* as the dependent variable, but we use a slightly different set of control variables that are more specific to the restatement/enforcement decisions and largely follow Rice, Weber, and Wu (2015).

The full model is presented below.

$$\begin{aligned} \text{High Retail} = & \delta_0 + \delta_2 \text{Insider}\% + \delta_3 \text{Restate Magnitude} + \delta_4 \text{Restate Revenue} + \delta_5 \text{Restate Count} + \\ & \delta_6 \text{Restate Years} + \delta_7 \text{CAR} + \delta_8 \text{Previous Return} + \delta_9 \text{Share Turnover} + \delta_{10} \text{Size} + \\ & \delta_{11} \text{Sales Growth} + \delta_{12} \text{CEO Chair} + \delta_{13} \text{CEO Tenure} + \delta_{14} \text{Retail Industry} + \delta_{15} \text{Fortune 500} + \\ & \delta_{16} \text{Advertising} + \gamma_i + \varepsilon \end{aligned} \quad (3)$$

Similar to the monitoring analyses, after estimating this regression we save the predicted values for each observation as the propensity score. We then match each treatment firm (*High Retail* = 1) to a control firm (*High Retail* = 0) with the closest absolute difference in propensity scores. Due to the limited sample size of restatements we do not require the matches to be in the same year, but we do include year fixed effects in the second stage regression to control for any timing differences. We again require a caliper of less than 0.02 and match with replacement to maximize the similarity of the treated and control observations.

The control variables in the propensity score model include the cumulative change in net income as a result of the restatement (*Restate Magnitude*), a binary variable for if revenue is restated (*Restate Revenue*), the number of accounts that are restated (*Restate Count*), the number of years which are being restated (*Restate Years*), and the 2-day abnormal market reaction to the restatement announcement (*CAR*). Next, we include the firm's returns in the lead-up to the restatement in order to control for the amount of losses incurred by stockholders (*Previous Return*). We include the log of the firm's market capitalization at the end of the restatement period (*Size*) in order to control for the tendency of large firms to be enforcement targets. We include the share turnover in the lead up to the restatement (*Share Turnover*) and the sales growth in the last misstated year (*Sales Growth*). Also consistent with the DCF monitoring model in Equation (2),

we include controls for difference in corporate governance structures (*CEO Chair* and *CEO Tenure*) and firm visibility (*Retail Industry*, *Fortune 500*, and *Advertising*).

After developing our propensity score matched sample we then assess the association between SEC enforcement and retail ownership using the following regression. We include all the same control variables to orthogonalize our estimated effects from any remaining differences in the covariates even after the propensity score matching procedure.

$$\begin{aligned} \text{DOE Enforcement} = & \beta_0 + \beta_1 \text{Retail\%} + \beta_2 \text{Insider\%} + \beta_3 \text{Restate Magnitude} + \beta_4 \text{Restate Revenue} + \\ & \beta_5 \text{Restate Count} + \beta_6 \text{Restate Years} + \beta_7 \text{CAR} + \beta_8 \text{Previous Return} + \beta_9 \text{Share Turnover} + \beta_{10} \text{Size} + \\ & \beta_{11} \text{Sales Growth} + \beta_{12} \text{CEO Chair} + \beta_{13} \text{CEO Tenure} + \beta_{14} \text{Retail Industry} + \beta_{15} \text{Fortune 500} + \\ & \beta_{16} \text{Advertising} + \gamma_t + \varepsilon \end{aligned} \quad (4)$$

We again include *Retail%* as the main variable of interest and *Insider%* for ease of interpretation of the coefficient estimate on *Retail%*. The dependent variable, *DOE Enforcement*, is one of two proxies: *Investigation* or *AAER*. *Investigation* is a binary variable that is equal to one if a firm undergoes an investigation by DOE in the year after a restatement, and zero otherwise. DOE investigations that do not lead to an enforcement action are not publicly observable, however, we obtain a comprehensive listing of all DOE investigations within our sample period via a FOIA request.<sup>10</sup>

*AAER* is a binary variable that is equal to one if a firm receives an AAER that is specifically related to financial misreporting within the three years after a restatement, and zero otherwise. We choose the timing window for DOE investigations and AAERs after considering two competing requirements. First, we need a short enough period so that it is likely that the investigation or AAER is related to the restatement. This ensures that the restatement severity controls in the regression are relevant in predicting DOE enforcement. Second, we need a long enough period so

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<sup>10</sup> We thank Terrence Blackburne for sharing the dataset of all DOE investigations during our sample period which he obtained from the SEC via FOIA. This data is also used in Blackburne, et al. (2020a), Blackburne, Kepler, Quinn, and Taylor (2020b), and Blackburne and Quinn (2020).

that the SEC is able to open a formal investigation of the firm's alleged misreporting and issue an AAER, if applicable. We believe the one-year (three-year) period is best able to capture both of these requirements for investigations (AAERs) based on Blackburne, et al. (2020a) which documents the average duration for an SEC investigation is approximately 2.5 years. All results in the paper are robust to instead using a 2-year post restatement window to identify DOE investigations and AAERs.

Each of our dependent variable proxies for DCF monitoring and DOE enforcement has unique strengths and weaknesses. We use multiple proxies in an effort to triangulate our inferences. Even though newly available SEC data sources for DCF reviews and DOE investigations allow us to observe companies that are subject to a DCF review that does not result in the issuance of a comment letter and a DOE investigation that does not result in an AAER, we are still unable to observe the specific factors that triggered these reviews and investigations and the resulting comment letters and AAERs. We are also unable to observe the cases where the SEC may have considered pursuing a review or investigation, but opted not to, such as in the case of a preliminary review or screening by DCF or a matter under inquiry (MUI) by DOE. In addition, we are not able to observe the specific resource allocations to the monitoring or enforcement of specific firms.

## **4. Data and Results**

### *4.1 Sample selection*

The sample period for the monitoring analyses is 2005 to 2014. We begin the sample in 2005, because that is when the SEC began making the comment letter data publicly available, and we end the sample in 2014 to be consistent with the end of the enforcement sample period. The

subsample used to investigate SEC-initiated EDGAR downloads has missing data between 2008 and 2013 as there was an issue with internal web traffic routing during that time period that resulted in no observable downloads by SEC-owned IP addresses (consistent with Stice-Lawrence 2019). We begin with the Compustat universe of firm year observations. We then merge in data from the CRSP, Thomsen-Reuters, and Execucomp in both the monitoring and enforcement samples. We eliminate observations with non-positive assets or missing values for any of the variables in our analyses. Finally, we eliminate financial firms (SIC 6000-6999) due to their unique regulatory structure. The requirement to have Execucomp data is rather restrictive, but insider ownership is a key aspect to constructing our main variable of interest, *Retail%*. Our monitoring samples contain 4,902 (12,598) [5,532] firm-year observations for the EDGAR download (comment letters) [rounds] analyses. After propensity score matching there are 4,880 (12,560) [5,456] firm-year observations for the EDGAR download (comment letters) [rounds] analyses.

The conditional enforcement sample begins with the universe of restatements from Audit Analytics with filing dates from January 1, 2001 through September 30, 2014. The sample period begins in 2001 as that is the first year we have reliable restatement data from Audit Analytics. The sample period ends in 2014 to allow for sufficient time for an AAER to be issued and show up in the Center for Financial Reporting and Management database which goes through September 30, 2016.<sup>11</sup> We eliminate restatement observations with Audit Analytics filing dates that are prior to the end of the misstatement period and observations with non-positive assets. The final enforcement sample contains 1,357 restatement observations for both the investigations and the AAER analyses. After propensity score matching there are 1,312 (954) observations for the

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<sup>11</sup> Dechow, Ge, Larson, and Sloan (2011) originally collected the data provided by the CFRM.

Investigations (AAER) analyses.<sup>12</sup> Table 1 summarizes the sample selection process for both sets of analyses.

#### 4.2 DCF Monitoring Results

Table 2 presents the results of the propensity score estimation for the monitoring samples. Because there are three slightly different samples for these tests we estimate three separate propensity score models. Each regression is estimated using a logit specification and the dependent variable in each column is *High Retail* defined within each sample. The sole purpose of this estimation is to find reasonable matches and ensure that the distribution of covariates across treated and control samples are as similar as possible. However, as an observation we see that higher retail ownership is associated with older firms, fortune 500 firms, high volatility firms, and firms without big 4 auditors. It is interesting to note that *Size* appears unrelated to retail ownership.

Table 3 presents means and standard deviations for each of the full samples as well as means and standard deviations separately for the *High Retail* = 1 and *High Retail* = 0 subsamples and the normalized differences across those two samples. Panel A presents statistics for the Downloads analyses, Panel B presents statistics for the Reviews and Comment Letters analyses, and Panel C presents statistics for the Rounds analysis. These panels show that the average ownership by retail investors is around 20% with insiders owning approximately 3-4% which leaves around 76-77% ownership by institutions. In terms of SEC monitoring variables, the average (median) firm is the subject of 325 (65) SEC-initiated downloads per year, of which 102 (11) are 10-K downloads. The SEC conducts a periodic filing review in about 33% of the years and issues a comment letter referencing Form 10-K in 44% of the firm-year observations. This

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<sup>12</sup> There are fewer observations in the AAER sample than the investigations sample because there are 3 years in our sample (2011, 2012, and 2014) where the restatement observations did not result in any AAERs and we exclude those observations from the matched sample as the year fixed effects would subsume all variation in the main regressions.

clearly highlights a potential issue with the DCF reviews data as it should not be the case that a firm receives a comment letter without undergoing a review. We have no reason to believe that any incompleteness of the DCF reviews data is related in any way to retail ownership, and our results are robust to an alternative specification that recodes the review variable equal to 1 if the firm received a comment letter in that year.

Importantly, Wooldridge (2011) and Imbens and Rubin (2012) suggest that absolute normalized differences greater than 0.25 are cause for concern. Table 3 shows that after the propensity score matching procedure none of the control variables across all three samples have normalized differences greater than the suggested 0.25 benchmark. Table 4 provides correlations between both outcome variables and retail ownership and all other variables used in the analyses. It shows that retail ownership is negatively associated with all of the SEC monitoring variables.

We formally test hypothesis 1 and investigate the association between retail ownership and SEC monitoring by estimating Equation (2). Table 5 presents results when SEC-initiated EDGAR downloads is our proxy for DCF monitoring. Regardless of whether the measure of SEC downloads includes all filings, 10-K filings, or the current fiscal year's 10-K filings, and regardless of whether the regression includes only year, or both year and DCF office fixed effects, which are based on industry (SIC codes), the coefficient estimate on *Retail%* is consistently negative and significant at the 5% level or better across all six columns. The results demonstrate that a higher percentage of retail ownership is associated with a lower level of DCF monitoring in terms of SEC downloads of the firm's filings on EDGAR. In terms of economic magnitude, a one standard deviation increase in *Retail%* is associated with an 11.01 (9.62) [9.52] percent decrease in total (10-K) [current fiscal year's 10-K] downloads per year. As a benchmark, a one standard deviation increase in firm size is associated with a 32.90 (23.66) [18.95] percent increase in total (10-K)



[current fiscal year's 10-K] downloads per year. This evidence suggests that ownership characteristics are associated with the SEC's decisions of which firms to monitor and DCF is more likely to monitor the disclosure filings of firms with lower retail ownership.

Table 6 presents the results when we proxy for DCF monitoring with the likelihood of undergoing a periodic filing review. The coefficient estimate on *Retail%* is negative and significant at the 5% level or better across both columns with a marginal effect of -0.062 when including year and SEC office fixed effects in column (2). The result shows that a higher percentage of retail ownership is associated with a lower likelihood of undergoing a periodic filing review by DCF. In terms of economic magnitude, a one standard deviation increase in *Retail%* is associated with a 1.02 percentage point decrease in the probability of undergoing a DCF review, which corresponds to a 3.20 percent decrease relative to the sample mean. As a benchmark, a one standard deviation increase in firm size is associated with a 6.89 percentage point increase in the probability of undergoing a DCF review, which corresponds to a 21.72 percent increase relative to the sample mean.<sup>13</sup>

Finally, Table 7 presents the results when we proxy for DCF monitoring with the likelihood of receiving a 10-K comment letter in Panel A, and the number of rounds needed to satisfy a 10-K comment letter in Panel B. Panel A shows coefficient estimate on *Retail%* that is negative and significant at the 5% level across both columns with a marginal effect of -0.095 when including year and SEC office fixed effects. This result suggests that a higher percentage of retail ownership is associated with a lower likelihood of receiving an SEC comment letter. In terms of economic magnitude, a one standard deviation increase in *Retail%* is associated with a 1.55 percentage point decrease in the probability of receiving a comment letter, which corresponds to a 3.49 percent

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<sup>13</sup> Our results are robust to including all DCF reviews, not only 10-K reviews.

decrease relative to the sample mean. As a benchmark, a one standard deviation increase in firm size is associated with a 9.74 percentage point increase in the probability of receiving a comment letter, which corresponds to a 21.92 percent increase relative to the sample mean.

Table 7 Panel B presents the results when the dependent variable is the number of rounds needed to resolve the DCF comments, conditional on the receipt of a comment letter. We again find a negative and significant association at the 5% level or better with *Retail%*. In terms of economic magnitude, a one standard deviation increase in *Retail%* is associated with a 3.26 percent decrease in the number of rounds needed to resolve the comments. As a benchmark, a one standard deviation increase in firm size is associated with a 1.42 percent increase in the number of rounds needed to resolve the comments. This evidence suggests that even conditional on the receipt of an SEC comment letter, ownership characteristics continue to play a role in the intensity of the regulatory monitoring from DCF.

Taken together, the combined results in our monitoring analyses consistently suggest that retail ownership is associated with lower DCF monitoring whether in the form of SEC-initiated EDGAR downloads, the likelihood of DCF review, comment letter receipt, or the effort to resolve the comments conditional on the receipt of an SEC comment letter. Contrary to public statements about protecting Main Street investors, our analyses suggest that after considering the myriad of competing objectives, DFC's resource allocation decisions appear to result in less preventative monitoring of firms with larger concentrations of retail ownership.

#### *4.3 DOE Enforcement Results*

Table 8 presents the results of the propensity score estimation for the enforcement sample. The enforcement sample is conditional on the presence of a restatement which means the tests that examine investigations and the tests that examine AAERs derive from the same sample so we only

present a single propensity score model. The regression is estimated using a logit specification and the dependent variable is *High Retail* defined for this sample. Table 9 presents means and standard deviations for each of the full samples as well as means and standard deviations separately for the *High Retail* = 1 and *High Retail* = 0 subsamples and the normalized differences across those two samples. Panel A presents statistics for the Investigations analyses and Panel B presents statistics for the AAER analyses. Average ownership statistics are similar to the monitoring samples with retail (insider) [institutional] owners comprising roughly 22% (4%) [74%] of total ownership. In terms of SEC enforcement variables, there is an investigation in 14% of the observations and an AAER in 5% of the observations following a restatement.

Similar to the monitoring samples, after the propensity score matching procedure none of the control variables across all three samples have normalized differences greater than the suggested 0.25 benchmark. Table 10 provides correlations between both outcome variables and retail ownership and all other variables used in the analyses. It shows that retail ownership is positively associated with both SEC enforcement variables.

We present the results of our test of hypothesis 2 in Tables 11 and 12, which investigate the association between retail ownership and SEC enforcement. First, Table 11 presents results when we proxy for DOE enforcement with the likelihood of undergoing an investigation. The coefficient estimate on *Retail%* is positive and significant at the 1% level or better across both columns with a marginal effect of 0.15 when including year fixed effects in column 2. This result demonstrates that a higher percentage of retail ownership is associated with a higher likelihood of undergoing a DOE investigation within the year following a restatement. In terms of economic magnitude, a one standard deviation increase in *Retail%* is associated with a 2.52 percentage point increase in the probability of undergoing a DOE investigation, which corresponds to a 17.65

percent increase relative to the sample mean. As a benchmark, a one standard deviation increase in firm size is associated with a 0.37 percentage point increase in the probability of undergoing a DOE investigation, which corresponds to a 2.62 percent increase relative to the sample mean.<sup>14</sup> This evidence suggests that ownership characteristics are associated with the SEC's decisions on which firms will be the subject to DOE investigation.

Table 12 presents the results when we proxy for DOE enforcement with the likelihood of receiving an AAER. The coefficient estimate on *Retail%* is again positive and significant at the 1% level or better across both columns with a marginal effect of 0.05 when including year fixed effects in column 2. This result demonstrates that a higher percentage of retail ownership is associated with a higher likelihood of receiving an AAER within the three years following a restatement. In terms of economic magnitude, a one standard deviation increase in *Retail%* is associated with a 0.88 percentage point increase in the probability of receiving an AAER, which corresponds to a 17.43 percent increase relative to the sample mean. As a benchmark, a one standard deviation increase in firm size is associated with a 1.14 percentage point increase in the probability of receiving an AAER, which corresponds to a 22.69 percent increase relative to the sample mean. This evidence suggests that ownership characteristics are strongly associated with the SEC's decisions on which firms will be the subject to DOE enforcement actions.

One concern about these tests is that institutions may be able to foresee trouble on the horizon better than retail investors, and thus might reduce their stake in firms ahead of an investigation or AAER. This would result in a positive association between retail ownership and

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<sup>14</sup> We report the economic magnitude of *Size* even though it is insignificant in this specification for consistency with our interpretation across other models. A more appropriate benchmark in this specification would be *Restate Magnitude*. A one standard deviation increase in restatement magnitude is associated with a 2.82 percentage point decrease in the probability of undergoing a DOE investigation which corresponds to a 19.78 percent decrease relative to the sample mean. It is important to note that *Restate Magnitude* is signed. As a result, a positive value indicates an income increasing restatement.

these enforcement outcomes. To investigate this concern Figure 1 plots the average retail ownership in each of the five years prior to the restatement separately for firms with an investigation (AAER) and firms without an investigation (AAER) in Panel A (Panel B). In both Panels we see no differential trend in retail ownership, which is the residual of institutional ownership and insider ownership. This figure helps mitigate the concern that institutions' selling before bad outcomes are driving our enforcement results.

Together, these results imply that the SEC, and specifically the DOE, is more likely to open a formal investigation and pursue enforcement actions against firms that have a higher percentage of retail investors. Prior research demonstrates that these investigations and enforcement actions are detrimental to investors in terms of monetary and reputational penalties, disruption to operations and significant declines in firm value. Contrary to public statements about protecting Main Street investors, our analyses suggest that after considering the multitude of competing objectives, DOE's resource allocation decisions appear consistent with more punitive enforcement of firms with larger concentrations of retail ownership.

## **5. Conclusion**

This paper studies the association between retail ownership and the likelihood that a firm is subject to SEC monitoring in the form of SEC-initiated EDGAR downloads, DCF reviews, or comment letters and SEC enforcement in the form of a DOE investigation or an AAER. The SEC claims to primarily serve to protect "Main Street" investors, and in many of their initiatives they do just that. Examples include Regulation Fair Disclosure and investor education initiatives. However, what is less clear is whether that focus on retail investors is also shared by the two primary divisions of the SEC: DCF and DOE. These divisions comprise the largest allocation of

resources in terms of both budget and full-time employees and are the primary points of contact with the SEC for corporate registrants.

We use a propensity score-matched sample to examine this issue and find that retail ownership is *negatively* associated with SEC-initiated downloads and the likelihood of undergoing a periodic filing review and receiving a comment letter by DCF. Further, conditional on a restatement, we find that retail ownership is *positively* associated with the firm's likelihood of undergoing a DOE investigation and receiving an AAER. Taken together, these results provide evidence that ownership characteristics are associated with the SEC staff's monitoring and enforcement decisions. The results suggest that the resource allocation decisions of the SEC's two primary divisions tend to result in less protective monitoring and more punitive enforcement of firms with higher retail ownership. We acknowledge that DCF and DOE both have a myriad of objectives to consider when making resource allocation decisions and we do not suggest that either division intentionally devotes fewer resources to firms with larger concentrations of retail ownership. However, the evidence suggests that in weighing these different objectives, the ultimate resource allocation decisions of these two divisions are consistent with being slow to protect and quick to punish "Main Street" investors.

Prior literature on the determinants of SEC monitoring and enforcement almost exclusively focuses on firm-level characteristics. We contribute to this literature by expanding the scope of potential determinants to include ownership characteristics on the likelihood of these two regulatory roles. Our study helps shed light on the black box of how the SEC fulfills its investor protection mandate by providing evidence on *which investors* are the focus of its monitoring and enforcement initiatives, and helps answer the call of Leuz and Wysocki (2016) to examine the interaction of various regulatory roles. We document that investor type is associated with SEC

monitoring, but that contrary to many public statements, retail ownership is associated with less monitoring. Further, DOE is more likely to pursue retail-owned firms as evidenced by the increased likelihood of opening an investigation and issuing an AAER, which is a more severe and costly form of enforcement for these firms with the most egregious cases of perceived financial misreporting. We hope that future research will continue to consider the relative tradeoffs among differing regulatory roles and further investigate the extent to which ownership characteristics play a role in decision making at the SEC.

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## SECURITIES AND EXCHANGE COMMISSION



## Appendix B: Variable Definitions

<i>10K Comment</i>	A binary variable that equals 1 if a firm received a comment letter related to a 10-K during the fiscal year and zero otherwise.
<i>10K Downloads</i>	The log of one plus the number of 10-K downloads by the SEC in the year.
<i>10K Downloads CY</i>	The log of one plus the number of the current fiscal year's 10-K downloads by the SEC in the year.
<i>AAER</i>	A binary variable that equals 1 if a firm was subject to an Accounting and Auditing Enforcement Release within the 3 years following a restatement, and zero otherwise.
<i>Abnormal Revenue Change</i>	Percentage growth in revenue – percentage growth in employees following Brazel, Jones, and Zimbelman (2009)
<i>Advertising</i>	Advertising expense scaled by total sales.
<i>BIG4</i>	A binary variable that equal 1 if a firm was audited by Deloitte, PriceWaterhouseCoopers, EY, or KPMG.
<i>CAR</i>	The cumulative abnormal return over the (0,1) period relative to the restatement announcement. Calculated as firm return minus the return on the CRSP equal-weight market index.
<i>CEO Chair</i>	A binary variable that equals one if the CEO is also the chairman of the board of directors.
<i>CEO Tenure</i>	The number of years the CEO has served in his/her current role.
<i>Downloads</i>	The log of one plus the total number of downloads by the SEC in the year.
<i>External Financing</i>	The sum of equity financing and debt financing scaled by total assets, measured in fiscal year t+1.
<i>Filings</i>	The number of filings referenced in the comment letter
<i>Firm Age</i>	The number of years between the first appearance of the firm in Compustat and the current year
<i>Fortune 500</i>	A binary variable that equals one if the firm is listed in the Fortune 500, and zero otherwise.
<i>High Volatility</i>	A binary variable that equals one if the volatility of abnormal monthly stock returns within a firm's fiscal year is in the top quartile of that fiscal year.

### Appendix B: Variable Definitions (continued)

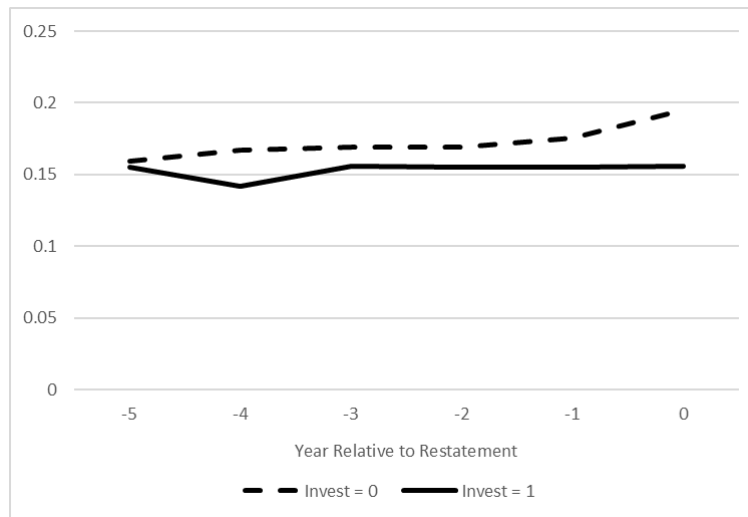
<i>Insider %</i>	Total shares owned by insiders at the end of the fiscal year scaled by total shares outstanding. Insider share data from Execucomp. Execucomp item: SHROWN_TOT. If missing SHROWN_TOT, we use SHROWN_EXCL_OPTS. These variables are summed for all insiders in the firm each year.
<i>Institutional %</i>	Average shares owned by institutions across the 4 quarters during the year scaled by total shares outstanding. Institutional share ownership data from Thomson Reuters.
<i>Investigation</i>	A binary variable that equals one if an investigation into the firm was opened by the DOE within 1 year following a restatement and zero otherwise.
<i>Issues</i>	The number of issues referenced in the comment letter
<i>Lit Industry</i>	A binary variable that equals 1 if a firm is in the four-digit SIC industry 2833–2836, 3570–3577, 3600–3674, 5200–5961, or 7370–7374.
<i>Loss</i>	A binary variable that equals one if the firm reported negative net income.
<i>Low MTB</i>	A binary variable that equals one if the firm's market-to-book ratio is below one.
<i>M&amp;A</i>	A binary variable that equals one if the firm engaged in any mergers or acquisitions during the fiscal year.
<i>MTB</i>	Common shares outstanding multiplied by price at the end of the fiscal year divided by the book value of common equity.
<i>Previous Return</i>	The buy-and-hold abnormal return over the (-252, -2) window relative to the restatement announcement date. Calculated using the CRSP equal-weight market index.
<i>Restate</i>	A binary variable that equals one if the company filed a restatement within the past fiscal year.
<i>Restate Count</i>	The number of distinct account types being restated.
<i>Restate Magnitude</i>	The cumulative change in reported earnings due to the restatement, scaled by total market value of common equity at the end of the misstatement period
<i>Restate Revenue</i>	A binary variable that equals 1 if the restatement involves revenue recognition, and 0 otherwise.
<i>Restate Years</i>	The length of the misstatement period in years

### Appendix B: Variable Definitions (continued)

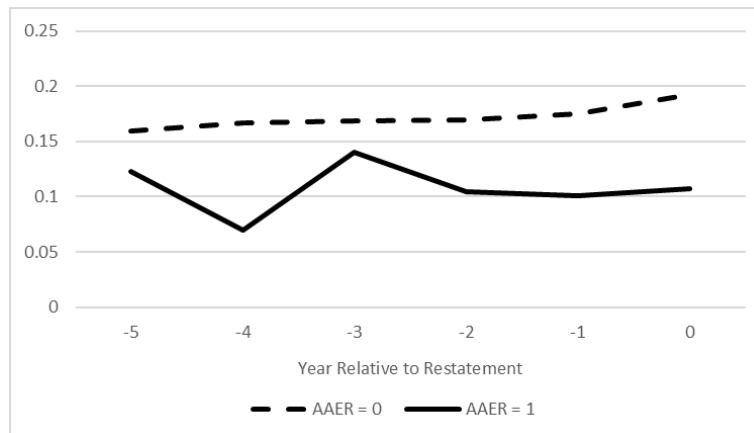
<i>Restructuring</i>	A binary variable that equals one if the firm had non-zero restructuring costs during the fiscal year.
<i>Retail %</i>	1 - Insider % - Institutional %.
<i>Retail Industry</i>	A binary variable that equals 1 if a firm is in the following Fama-French 48 industries: 1-3, 7, 9, 11, 13, 18, 23, 27-30, 32-35, and 41-46 following Chakravarthy, deHaan, and Rajgopal (2014).
<i>Review</i>	A binary variable that equals one if the firm had their 10-K reviewed by the DCF in the given year.
<i>Rounds</i>	The number of back and forth iterations between the SEC and the corporate registrant required to satisfy the SEC regarding a specific comment letter. This is measured as the number of letters from the SEC during each conversation, from the first letter to the “completion of review” letter.
<i>Sales Growth</i>	Change in sales during the year scaled by beginning sales.
<i>Share Turnover</i>	$(1 - \Pi_t (1 - \text{shares traded}_t / \text{total shares}_t))$ calculated over the (-252, -2) window relative to the restatement announcement.
<i>Size</i>	The log of common shares outstanding multiplied by price at the end of the fiscal year.
<i>Zscore</i>	Altman’s Z-Score as measured in Altman (1968)

**Figure 1: Trend in retail ownership prior to a restatement**

**Panel A: Trends for firms subject to and firms not subject to an SEC investigation**



**Panel B: Trends for firms subject to and firms not subject to an AAER**



Notes: This figure shows the trend in retail ownership percentage separately for firms subject to an investigation by the DOE vs those that are not in Panel A and those that receive an AAER versus those that do not in Panel B. The Y-axis in both panels is the average retail ownership and the X-axis is the year relative to the year of the financial statement restatement which triggers entry into the enforcement sample.

**Table 1: Sample selection**

	Monitoring Sample	Enforcement Sample
Audit Analytics restatements (2001-2014)		14,199
Compustat universe (2005-2014)	112,309	
Less:		
restatement period ends after restatement date	-	(287)
require Compustat data	-	(5,102)
observations with non-positive assets	(21,989)	(369)
keep only one restatement per year	-	(747)
require CRSP data	(38,761)	(2,491)
require institutional holdings data	(11,241)	(744)
require insider holdings data	(22,537)	(2,630)
eliminate financial firms (SIC 6000 - 6999)	(2,624)	(246)
missing control variables	(2,559)	(226)
Final monitoring/ enforcement samples	<b>12,598</b>	<b>1,357</b>
Missing SEC downloads from 2008-2013	(7,696)	
Final SEC-initiated downloads sample	<b>4,902</b>	

	<i>High Retail = 1</i>	<i>High Retail = 0</i>	
<u>Propensity Score Matched Samples</u>	observations	observations	Full Sample
Downloads analysis	2,440	2,440	4,880
Comment letter analysis	6,280	6,280	12,560
Rounds analysis	2,728	2,728	5,456
Investigations analysis	656	656	1,312
AAER analysis	477	477	954



**Table 2: Propensity Score Matching - Monitoring**

	(1)	(2)	(3)
	Downloads	Reviews and	Rounds
	Sample	Comment Letters	Sample
VARIABLES	High Retail	High Retail	High Retail
Insider%	-1.790*** (0.424)	-1.941*** (0.368)	-2.115*** (0.460)
Restate	-0.155* (0.091)	-0.113 (0.069)	-0.078 (0.105)
Lag Restate	-0.139 (0.107)	-0.030 (0.072)	-0.017 (0.113)
Size	0.001 (0.046)	-0.021 (0.041)	0.142*** (0.046)
MTB	0.016 (0.010)	0.013 (0.009)	0.012 (0.011)
Firm Age	0.029*** (0.003)	0.024*** (0.003)	0.021*** (0.003)
Loss	0.174 (0.119)	0.094 (0.082)	0.042 (0.110)
Low MTB	-0.071 (0.167)	-0.191* (0.102)	-0.089 (0.131)
ZScore	-0.016 (0.012)	-0.013 (0.011)	-0.018 (0.014)
Sales Growth	-0.404** (0.203)	0.039 (0.117)	0.051 (0.159)
M&A	-0.140 (0.092)	-0.154** (0.070)	-0.128 (0.090)
Restructuring	-0.171** (0.083)	-0.185*** (0.068)	-0.175** (0.080)
External Financing	0.474 (0.292)	0.368* (0.223)	0.096 (0.329)
Lit Industry	0.222** (0.105)	0.094 (0.096)	0.025 (0.111)
BIG4	-0.599*** (0.171)	-0.686*** (0.156)	-0.719*** (0.184)
High Volatility	0.322*** (0.090)	0.256*** (0.063)	0.232*** (0.088)
CEO Chair	-0.127	-0.062	-0.006

	(0.088)	(0.078)	(0.092)
CEO Tenure	-0.003	-0.012**	-0.017**
	(0.006)	(0.006)	(0.007)
Retail Industry	-0.234**	-0.230**	-0.254**
	(0.098)	(0.090)	(0.102)
Fortune 500	0.501***	0.604***	0.412***
	(0.136)	(0.129)	(0.138)
Advertising	-1.397	-1.419	-3.593**
	(1.193)	(1.114)	(1.539)
Filings			0.002
			(0.028)
Issues			0.002
			(0.013)
Constant	0.050	0.694**	-0.307
	(0.341)	(0.307)	(0.376)
Observations	4,902	12,598	5,532
YEAR FE	YES	YES	YES

Notes: This table presents the first-stage logit model used for estimating propensity scores in our Monitoring samples, where the dependent variable an indicator that equals one if the firm-year observation of *Retail%* is above the sample median. Downloads Sample refers to our sample of SEC downloads. Reviews and Comment Letters Sample refers to our sample of SEC comment letters and SEC reviews. Rounds Sample refers to our sample of the number of rounds involved in an SEC comment letter conversation with a given firm. See Appendix B for variable definitions. \*, \*\*, and \*\*\* Indicate significance at the 10, 5, and 1% levels. Standard errors in parentheses.

**Table 3: Covariate Balance - Monitoring****Panel A: Downloads Sample**

	Full Sample		High Retail		Low Retail			Normalized
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Difference	Difference
Observations	4,880		2,440		2,440			
Downloads	4.172	2.145						
10K Downloads	2.852	2.161						
10K Downloads CY	2.598	2.248						
Retail%	0.226	0.161						
Insider%	0.031	0.068	0.029	0.059	0.032	0.076	-0.003	-0.031
Restate	0.115	0.319	0.115	0.319	0.115	0.319	0.000	0.000
Lag Restate	0.096	0.294	0.095	0.293	0.097	0.296	-0.002	-0.005
Size	7.927	1.560	7.978	1.852	7.876	1.198	0.102	0.046
MTB	3.361	4.156	3.460	4.074	3.262	4.235	0.198	0.034
Firm Age	34.258	18.159	34.08	18.286	34.436	18.033	-0.356	-0.014
Loss	0.145	0.352	0.148	0.356	0.141	0.348	0.007	0.014
Low MTB	0.071	0.257	0.068	0.251	0.074	0.262	-0.006	-0.017
ZScore	4.133	4.069	4.149	4.429	4.117	3.676	0.032	0.006
Sales Growth	0.090	0.178	0.090	0.179	0.089	0.176	0.001	0.004
M&A	0.225	0.417	0.227	0.419	0.223	0.416	0.004	0.007
Restructuring	0.428	0.495	0.416	0.493	0.441	0.497	-0.025	-0.036
External Financing	-0.024	0.116	-0.023	0.119	-0.026	0.113	0.003	0.018
Lit Industry	0.298	0.457	0.299	0.458	0.297	0.457	0.002	0.003
BIG4	0.920	0.272	0.919	0.273	0.920	0.271	-0.001	-0.003
High Volatility	0.250	0.433	0.248	0.432	0.252	0.434	-0.004	-0.007
CEO Chair	0.522	0.500	0.528	0.499	0.516	0.500	0.012	0.017
CEO Tenure	6.466	7.018	6.484	7.132	6.447	6.903	0.037	0.004
Retail Industry	0.501	0.500	0.495	0.500	0.507	0.500	-0.012	-0.017
Fortune 500	0.344	0.475	0.341	0.474	0.348	0.477	-0.007	-0.01
Advertising	0.011	0.027	0.011	0.027	0.010	0.028	0.001	0.026

**Panel B: Reviews and Comment Letters Sample**

	Full Sample		High Retail		Low Retail			Normalized
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Difference	Difference
Observations	12,560		6,280		6,280			
Review	0.317	0.465						
Comment Letter	0.444	0.497						
Retail%	0.204	0.163						
Insider%	0.035	0.070	0.034	0.063	0.036	0.076	-0.002	-0.02
Restate	0.081	0.273	0.083	0.275	0.080	0.271	0.003	0.008
Lag Restate	0.079	0.270	0.080	0.272	0.077	0.267	0.003	0.008
Size	7.721	1.625	7.785	1.898	7.657	1.294	0.128	0.056
MTB	2.917	3.626	2.984	3.452	2.850	3.792	0.134	0.026
Firm Age	33.220	18.395	33.127	18.604	33.313	18.183	-0.186	-0.007
Loss	0.170	0.376	0.161	0.368	0.179	0.384	-0.018	-0.034
Low MTB	0.114	0.318	0.104	0.306	0.125	0.330	-0.021	-0.047
ZScore	3.878	3.710	3.924	4.052	3.832	3.333	0.092	0.018
Sales Growth	0.085	0.202	0.084	0.203	0.085	0.200	-0.001	-0.004
M&A	0.231	0.422	0.229	0.421	0.233	0.423	-0.004	-0.007
Restructuring	0.440	0.496	0.416	0.493	0.465	0.499	-0.049	-0.07
External Financing	-0.020	0.103	-0.020	0.108	-0.020	0.099	0.000	0.000
Lit Industry	0.286	0.452	0.290	0.454	0.281	0.450	0.009	0.014
BIG4	0.910	0.286	0.911	0.285	0.910	0.287	0.001	0.002
High Volatility	0.260	0.439	0.247	0.431	0.273	0.445	-0.026	-0.042
CEO Chair	0.523	0.499	0.528	0.499	0.519	0.500	0.009	0.013
CEO Tenure	6.373	6.707	6.374	6.706	6.371	6.708	0.003	0.000
Retail Industry	0.516	0.500	0.505	0.500	0.527	0.499	-0.022	-0.031
Fortune 500	0.343	0.475	0.338	0.473	0.349	0.477	-0.011	-0.016
Advertising	0.012	0.028	0.011	0.029	0.012	0.028	-0.001	-0.025

**Panel C: Rounds Sample**

	Full Sample		High Retail		Low Retail			Normalized
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Difference	Difference
Observations	5,456		2,728		2,728			
Rounds	1.629	0.952						
Retail%	0.198	0.157						
Insider%	0.031	0.066	0.028	0.054	0.034	0.076	-0.006	-0.064
Restate	0.082	0.274	0.079	0.269	0.085	0.279	-0.006	-0.015
Lag Restate	0.076	0.265	0.073	0.261	0.078	0.269	-0.005	-0.013
Size	8.082	1.554	8.184	1.815	7.981	1.231	0.203	0.093
MTB	2.955	3.870	3.008	3.473	2.901	4.230	0.107	0.020
Firm Age	34.942	19.217	34.341	19.041	35.543	19.377	-1.202	-0.044
Loss	0.147	0.354	0.138	0.345	0.157	0.364	-0.019	-0.038
Low MTB	0.114	0.318	0.096	0.295	0.132	0.339	-0.036	-0.080
ZScore	3.758	3.506	3.777	3.684	3.739	3.319	0.038	0.008
Sales Growth	0.086	0.208	0.085	0.205	0.086	0.210	-0.001	-0.003
M&A	0.237	0.425	0.233	0.423	0.240	0.427	-0.007	-0.012
Restructuring	0.450	0.498	0.441	0.497	0.459	0.498	-0.018	-0.026
External Financing	-0.024	0.098	-0.023	0.101	-0.025	0.094	0.002	0.014
Lit Industry	0.278	0.448	0.282	0.450	0.273	0.446	0.009	0.014
BIG4	0.924	0.265	0.931	0.253	0.917	0.276	0.014	0.037
High Volatility	0.255	0.436	0.231	0.422	0.279	0.448	-0.048	-0.078
CEO Chair	0.559	0.497	0.558	0.497	0.560	0.496	-0.002	-0.003
CEO Tenure	6.309	6.866	6.144	6.467	6.473	7.240	-0.329	-0.034
Retail Industry	0.506	0.500	0.512	0.500	0.499	0.500	0.013	0.018
Fortune 500	0.424	0.494	0.417	0.493	0.430	0.495	-0.013	-0.019
Advertising	0.011	0.026	0.011	0.025	0.012	0.028	-0.001	-0.027
Filings	1.938	1.204	1.934	1.164	1.943	1.244	-0.009	-0.005
Issues	6.519	2.758	6.499	2.764	6.540	2.753	-0.041	-0.011

Notes: This table presents descriptive statistics of the variables from the propensity-score matched samples used in the Monitoring analyses. Panel A presents descriptives from the Downloads sample. Panel B presents descriptives from the Reviews and Comment Letters sample. Panel C presents descriptives from the Rounds sample. In each panel, the first two columns present the means and standard deviations for the entire matched sample. The next four columns present the means and standard deviations separately for High Retail and Low Retail firms. The final two columns present the difference in means across these two subsamples and the normalized differences. Normalized differences are calculated as:  $\frac{\bar{X}_a - \bar{X}_b}{\sqrt{s_a^2 + s_b^2}}$  where  $\bar{X}$  and  $s^2$  are the subsample mean and subsample variance, respectively.

See Appendix B for variable definitions.

**Table 4: Correlations - Monitoring**

Variables	Downloads	10K Downloads	10K Downloads CY	Retail% <sub>DL</sub>	Review	Comment Letter	Retail% <sub>RCL</sub>	Rounds	Retail% <sub>R</sub>
Retail%	<b>-0.034</b>	<b>-0.026</b>	-0.023	1	<b>-0.046</b>	<b>-0.028</b>	1	<b>-0.039</b>	1
Insider%	-0.005	0.005	0.003	<b>-0.139</b>	-0.012	<b>-0.042</b>	<b>-0.146</b>	<b>0.023</b>	<b>-0.169</b>
Restate	-0.016	-0.005	<b>-0.039</b>	<b>-0.052</b>	<b>-0.016</b>	-0.005	<b>-0.021</b>	0.004	-0.015
Lag Restate	-0.008	0.014	-0.010	<b>-0.047</b>	-0.014	<b>-0.016</b>	<b>-0.016</b>	0.000	-0.017
Size	<b>0.222</b>	<b>0.194</b>	<b>0.183</b>	0.022	<b>0.076</b>	<b>0.157</b>	<b>0.037</b>	0.000	<b>0.141</b>
MTB	<b>0.079</b>	<b>0.106</b>	<b>0.106</b>	<b>0.028</b>	<b>-0.019</b>	0.007	<b>0.026</b>	<b>-0.033</b>	<b>0.043</b>
Firm Age	<b>0.080</b>	<b>0.057</b>	<b>0.064</b>	<b>0.219</b>	<b>0.015</b>	<b>0.052</b>	<b>0.192</b>	-0.014	<b>0.220</b>
Loss	-0.012	-0.01	-0.012	<b>0.059</b>	-0.001	<b>-0.032</b>	<b>0.022</b>	<b>0.030</b>	-0.017
Low MTB	0.003	0.0200	0.017	0.001	0.005	<b>-0.016</b>	<b>-0.029</b>	0.021	<b>-0.057</b>
ZScore	-0.02	-0.005	0.002	<b>-0.092</b>	<b>-0.052</b>	<b>-0.038</b>	<b>-0.072</b>	<b>-0.037</b>	<b>-0.076</b>
Sales Growth	<b>-0.112</b>	<b>-0.114</b>	<b>-0.108</b>	<b>-0.054</b>	-0.009	-0.002	0.010	<b>0.024</b>	0.011
M&A	<b>0.302</b>	<b>0.329</b>	<b>0.336</b>	<b>-0.065</b>	0.014	0.003	<b>-0.05</b>	0.009	<b>-0.040</b>
Restructuring	<b>0.105</b>	<b>0.102</b>	<b>0.099</b>	<b>-0.031</b>	<b>0.025</b>	<b>0.04</b>	<b>-0.046</b>	0.010	<b>-0.043</b>
External Financing	0.016	0.007	0.004	<b>0.043</b>	-0.002	-0.01	<b>0.038</b>	<b>0.029</b>	0.014
Lit Industry	<b>0.037</b>	<b>0.039</b>	0.022	-0.006	0.004	-0.003	<b>-0.026</b>	<b>0.030</b>	<b>-0.059</b>
BIG4	-0.009	<b>-0.032</b>	<b>-0.029</b>	<b>-0.112</b>	<b>0.018</b>	<b>0.04</b>	<b>-0.116</b>	-0.015	<b>-0.061</b>
High Volatility	<b>-0.026</b>	-0.012	-0.019	<b>0.035</b>	<b>-0.040</b>	<b>-0.059</b>	<b>0.042</b>	<b>0.034</b>	-0.010
CEO Chair	<b>-0.043</b>	<b>-0.062</b>	<b>-0.059</b>	0.005	<b>0.021</b>	<b>0.033</b>	-0.006	0.019	<b>0.024</b>
CEO Tenure	0.008	0.022	<b>0.031</b>	<b>-0.066</b>	-0.004	-0.014	<b>-0.083</b>	-0.005	<b>-0.106</b>
Retail Industry	<b>0.054</b>	<b>0.077</b>	<b>0.060</b>	<b>-0.081</b>	<b>0.016</b>	0.013	<b>-0.071</b>	<b>0.054</b>	<b>-0.082</b>
Fortune 500	<b>0.122</b>	<b>0.087</b>	<b>0.076</b>	<b>0.098</b>	<b>0.064</b>	<b>0.124</b>	<b>0.100</b>	<b>0.038</b>	<b>0.156</b>
Advertising	0.022	<b>0.027</b>	0.018	<b>-0.029</b>	0.001	0.006	<b>-0.030</b>	0.016	<b>-0.045</b>
Filings								<b>0.322</b>	<b>-0.040</b>
Issues								<b>0.392</b>	<b>-0.023</b>

Notes: This table presents correlations of variables from the propensity-score matched samples used in the Monitoring analyses. The first four columns present correlations from the Downloads sample. The next three columns present correlations from the Reviews and Comment Letters sample. The final two columns present correlations from the Rounds sample. See Appendix B for variable definitions. Bolded cells indicate significance at the 10% level or lower.

**Table 5: The association between retail ownership and SEC-initiated EDGAR downloads**

VARIABLES	(1) Downloads	(2) Downloads	(3) 10K Downloads	(4) 10K Downloads	(5) 10K Downloads CY	(6) 10K Downloads CY
Retail%	-0.663*** (0.170)	-0.684*** (0.174)	-0.670*** (0.174)	-0.598*** (0.175)	-0.669*** (0.174)	-0.592*** (0.177)
Insider%	-0.016 (0.371)	-0.046 (0.381)	0.144 (0.450)	0.146 (0.478)	0.058 (0.472)	0.085 (0.504)
Restate	0.135 (0.083)	0.140* (0.084)	0.188** (0.076)	0.211*** (0.078)	0.040 (0.075)	0.064 (0.077)
Lag Restate	0.131 (0.086)	0.133 (0.087)	0.163** (0.082)	0.187** (0.083)	0.014 (0.085)	0.044 (0.086)
Size	0.214*** (0.030)	0.211*** (0.030)	0.158*** (0.027)	0.152*** (0.027)	0.129*** (0.027)	0.121*** (0.026)
MTB	0.002 (0.006)	0.001 (0.006)	0.011* (0.006)	0.009 (0.006)	0.012* (0.007)	0.010 (0.007)
Firm Age	0.002 (0.002)	0.002 (0.002)	0.000 (0.002)	0.001 (0.002)	0.001 (0.002)	0.002 (0.002)
Loss	0.016 (0.084)	0.031 (0.085)	0.015 (0.086)	0.024 (0.089)	-0.002 (0.086)	0.006 (0.090)
Low MTB	-0.015 (0.136)	-0.031 (0.134)	0.116 (0.146)	0.093 (0.146)	0.105 (0.153)	0.081 (0.154)
ZScore	0.000 (0.007)	0.003 (0.007)	0.007 (0.006)	0.008 (0.006)	0.013** (0.006)	0.014** (0.006)
Sales Growth	-0.079 (0.151)	-0.064 (0.149)	-0.087 (0.160)	-0.081 (0.155)	0.021 (0.156)	0.019 (0.153)
M&A	0.076 (0.068)	0.055 (0.067)	0.091 (0.074)	0.069 (0.072)	0.084 (0.075)	0.059 (0.073)
Restructuring	0.193*** (0.058)	0.169*** (0.056)	0.174*** (0.061)	0.113** (0.056)	0.184*** (0.061)	0.112** (0.056)
External Financing	0.254 (0.250)	0.289 (0.249)	0.032 (0.262)	0.078 (0.260)	-0.026 (0.265)	0.010 (0.262)
Lit Industry	0.168** (0.077)	0.093 (0.087)	0.097 (0.067)	0.126* (0.076)	0.018 (0.067)	0.066 (0.076)
BIG4	-0.213** (0.106)	-0.210* (0.107)	-0.183* (0.094)	-0.156 (0.096)	-0.108 (0.096)	-0.081 (0.098)
High Volatility	0.154** (0.068)	0.162** (0.068)	0.079 (0.068)	0.068 (0.070)	0.065 (0.071)	0.048 (0.073)
CEO Chair	-0.135** (0.062)	-0.127** (0.061)	-0.071 (0.054)	-0.064 (0.053)	-0.084 (0.054)	-0.078 (0.053)

CEO Tenure	-0.006 (0.005)	-0.005 (0.005)	-0.006 (0.004)	-0.006 (0.004)	-0.004 (0.004)	-0.004 (0.004)
Retail Industry	0.041 (0.055)	0.006 (0.068)	0.095* (0.053)	0.066 (0.066)	0.079 (0.053)	0.047 (0.065)
Fortune 500	0.131 (0.090)	0.155* (0.088)	0.089 (0.087)	0.137* (0.081)	0.083 (0.087)	0.137* (0.081)
Advertising	0.822 (0.760)	0.766 (0.776)	0.770 (0.884)	0.774 (0.882)	0.341 (0.887)	0.469 (0.889)
Constant	2.590*** (0.258)	2.631*** (0.263)	1.647*** (0.222)	1.657*** (0.226)	1.547*** (0.221)	1.563*** (0.225)
Observations	4,880	4,880	4,880	4,880	4,880	4,880
R-squared	0.605	0.608	0.643	0.648	0.666	0.671
YEAR FE	YES	YES	YES	YES	YES	YES
OFFICE FE	NO	YES	NO	YES	NO	YES

Notes: This table presents the results from a propensity-score matched regression where the dependent variable is the log of one plus the number of filing downloads by the SEC in a year. *Downloads* is the log of one plus the total number of downloads by the SEC in the year. *10K Downloads* is the log of one plus the number of 10-K downloads by the SEC in the year. *10K Downloads CY* is the log of one plus the number of the current fiscal year's 10-K downloads by the SEC in the year. *Insider%* is the total shares owned by firm insiders during the prior year scaled by total shares outstanding. *Retail%* is the percentage of shares owned by retail investors during the prior year. See Appendix B for all other variable definitions. \*, \*\*, and \*\*\* Indicate significance at the 10, 5, and 1% levels. Standard errors in parentheses. Standard errors are clustered by firm.



**Table 6: The association between retail ownership and the likelihood of a DCF review**

VARIABLES	(1) Review	(2) Review
Retail%	-0.199** (0.093)	-0.201** (0.094)
Insider%	0.008 (0.242)	-0.048 (0.252)
Restate	0.074 (0.065)	0.067 (0.065)
Lag Restate	-0.049 (0.070)	-0.056 (0.070)
Size	0.126*** (0.017)	0.137*** (0.017)
MTB	0.001 (0.007)	0.001 (0.007)
Firm Age	0.001 (0.001)	-0.000 (0.001)
Loss	0.088 (0.058)	0.115** (0.058)
Low MTB	0.096 (0.066)	0.092 (0.065)
ZScore	-0.016*** (0.005)	-0.013** (0.005)
Sales Growth	0.073 (0.096)	0.110 (0.097)
M&A	0.007 (0.050)	0.030 (0.050)
Restructuring	0.012 (0.038)	0.037 (0.039)
External Financing	0.213 (0.176)	0.275 (0.181)
Lit Industry	0.042 (0.042)	0.069 (0.052)
BIG4	-0.033 (0.064)	-0.049 (0.063)
High Volatility	-0.023 (0.051)	-0.015 (0.052)
CEO Chair	-0.011 (0.038)	-0.028 (0.039)

CEO Tenure	0.000 (0.003)	0.001 (0.003)
Retail Industry	0.009 (0.037)	0.020 (0.045)
Fortune 500	-0.062 (0.053)	-0.088* (0.052)
Advertising	0.591 (0.625)	0.287 (0.611)
Constant	-1.759*** (0.151)	-2.087*** (0.175)
Observations	12,560	12,560
YEAR FE	YES	YES
OFFICE FE	NO	YES

Notes: This table presents the results from a propensity-score matched probit regression where the dependent variable is, *Review*, a binary variable that equals one if the firm had their 10-K reviewed by the DCF in the given year and zero otherwise. *Insider%* is the total shares owned by firm insiders during the prior year scaled by total shares outstanding. *Retail%* is the percentage of shares owned by retail investors during the prior year. See Appendix B for all other variable definitions. \*, \*\*, and \*\*\* Indicate significance at the 10, 5, and 1% levels. Standard errors in parentheses. Standard errors are clustered by firm.

**Table 7: The association between retail ownership and SEC comment letter activity****Panel A: The association between retail ownership and the likelihood of a comment letter**

VARIABLES	(1) 10K Comment	(2) 10K Comment
Retail%	-0.227** (0.093)	-0.241*** (0.093)
Insider%	-0.565** (0.242)	-0.565** (0.249)
Restate	0.096 (0.063)	0.095 (0.063)
Lag Restate	-0.075 (0.061)	-0.075 (0.062)
Size	0.145*** (0.017)	0.152*** (0.017)
MTB	0.002 (0.006)	0.001 (0.006)
Firm Age	0.002 (0.001)	0.002 (0.001)
Loss	0.001 (0.055)	0.016 (0.056)
Low MTB	0.107 (0.067)	0.114* (0.067)
ZScore	-0.010** (0.005)	-0.008* (0.005)
Sales Growth	0.103 (0.089)	0.127 (0.090)
M&A	-0.016 (0.045)	-0.009 (0.046)
Restructuring	0.071* (0.037)	0.071* (0.038)
External Financing	0.266 (0.163)	0.302* (0.168)
Lit Industry	-0.003 (0.042)	0.008 (0.052)
BIG4	-0.014 (0.058)	-0.013 (0.060)
High Volatility	0.026 (0.046)	0.032 (0.046)

CEO Chair	-0.041 (0.038)	-0.053 (0.038)
CEO Tenure	0.004 (0.003)	0.005* (0.003)
Retail Industry	0.034 (0.040)	0.019 (0.047)
Fortune 500	0.011 (0.054)	0.009 (0.054)
Advertising	0.431 (0.581)	0.351 (0.595)
Constant	-1.341*** (0.143)	-1.484*** (0.173)
Observations	12,560	12,560
YEAR FE	YES	YES
OFFICE FE	NO	YES

Notes: This table presents the results from a propensity-score matched probit regression where the dependent variable is one if the firm received a comment letter related to a 10-K within the next year. *Insider%* is the total shares owned by firm insiders during the prior year scaled by total shares outstanding. *Retail%* is the percentage of shares owned by retail investors during the prior year. See Appendix B for all other variable definitions. \*, \*\*, and \*\*\* Indicate significance at the 10, 5, and 1% levels. Standard errors in parentheses. Standard errors are clustered by firm.

**Panel B: The association between retail ownership and the number of rounds in a comment letter conversation**

VARIABLES	(1) Rounds	(2) Rounds
Retail%	-0.213** (0.105)	-0.208** (0.106)
Insider%	0.310 (0.229)	0.359 (0.230)
Restate	-0.033 (0.057)	-0.023 (0.057)
Lag Restate	-0.055 (0.088)	-0.049 (0.087)
Size	0.013 (0.018)	0.009 (0.018)
MTB	-0.002 (0.005)	-0.002 (0.005)
Firm Age	-0.000 (0.001)	-0.000 (0.001)
Loss	-0.017 (0.060)	-0.020 (0.059)
Low MTB	0.033 (0.072)	0.044 (0.069)
ZScore	-0.005 (0.005)	-0.007 (0.005)
Sales Growth	0.042 (0.100)	0.025 (0.099)
M&A	0.011 (0.041)	0.013 (0.042)
Restructuring	-0.036 (0.041)	-0.039 (0.039)
External Financing	-0.059 (0.167)	-0.074 (0.169)
Lit Industry	0.014 (0.050)	0.079 (0.059)
BIG4	-0.017 (0.079)	-0.015 (0.077)
High Volatility	0.020 (0.052)	0.016 (0.052)

CEO Chair	-0.001 (0.037)	-0.004 (0.037)
CEO Tenure	-0.001 (0.002)	-0.001 (0.002)
Retail Industry	0.077* (0.040)	0.053 (0.050)
Fortune 500	0.137** (0.057)	0.140** (0.056)
Advertising	0.441 (0.679)	0.655 (0.659)
Filings	0.132*** (0.026)	0.132*** (0.026)
Issues	0.126*** (0.008)	0.127*** (0.008)
Constant	0.441*** (0.155)	0.456*** (0.155)
Observations	5,456	5,456
R-squared	0.210	0.216
YEAR FE	YES	YES
OFFICE FE	NO	YES

Notes: This table presents the results from a propensity-score matched regression where the dependent variable is the number of rounds in the comment letter review. *Rounds* is the number of letters from the SEC, from the first letter to the “completion of review” letter. *Insider%* is the total shares owned by firm insiders during the prior year scaled by total shares outstanding. *Retail%* is the percentage of shares owned by retail investors during the prior year. See Appendix B for all other variable definitions. \*, \*\*, and \*\*\* Indicate significance at the 10, 5, and 1% levels. Standard errors in parentheses. Standard errors are clustered by firm.

**Table 8: Propensity Score Matching - Enforcement**

VARIABLES	(1) Enforcement Sample
	High Retail
Insider%	-3.909*** (0.745)
Restate Magnitude	-3.653*** (1.151)
Restate Revenue	0.037 (0.170)
Restate Count	-0.033 (0.041)
Restate Years	-0.059** (0.029)
CAR	-0.725 (0.919)
Previous Return	0.412*** (0.101)
Share Turnover	-4.684*** (0.583)
Size	-0.054 (0.083)
Sales Growth	0.074 (0.233)
CEO Tenure	-0.008 (0.008)
CEO Chair	-0.247 (0.170)
Retail Industry	-0.125 (0.130)
Fortune 500	0.784*** (0.237)
Advertising	2.638* (1.391)
Constant	6.089*** (0.627)
Observations	1,357
YEAR FE	YES

Notes: This table presents the first-stage logit model used for estimating propensity scores in our Enforcement samples, where the dependent variable an indicator that equals one if the firm-year observation of *Retail%* is above the sample median. *Enforcement Sample* refers to our sample of SEC enforcement actions and investigations. See Appendix B for all other variable definitions. \*, \*\*, and \*\*\* Indicate significance at the 10, 5, and 1% levels. Standard errors in parentheses.



**Table 9: Covariate Balance - Enforcement****Panel A: Investigation Sample**

	Full Sample		High Retail		Low Retail		Difference	Normalized Difference
	Mean	S.D.	Mean	S.D.	Mean	S.D.		
Observations	1,312		656		656			
Investigation	0.143	0.350						
Retail%	0.215	0.167						
Insider%	0.040	0.090	0.039	0.074	0.041	0.104	-0.002	-0.016
Restate Magnitude	-0.010	0.041	-0.012	0.046	-0.009	0.037	-0.003	-0.051
Restate Revenue	0.167	0.373	0.178	0.383	0.155	0.363	0.023	0.044
Restate Count	2.539	1.886	2.585	1.816	2.492	1.953	0.093	0.035
Restate Years	2.224	1.834	2.279	1.884	2.169	1.781	0.110	0.042
CAR	-0.011	0.067	-0.009	0.065	-0.012	0.068	0.003	0.032
Previous Return	0.025	0.545	-0.005	0.500	0.054	0.586	-0.059	-0.077
Share Turnover	0.778	0.193	0.782	0.191	0.773	0.194	0.009	0.033
Size	6.998	1.523	7.052	1.721	6.945	1.295	0.107	0.050
Sales Growth	0.098	0.259	0.091	0.282	0.104	0.234	-0.013	-0.035
CEO Tenure	6.918	7.720	6.707	7.698	7.128	7.742	-0.421	-0.039
CEO Chair	0.514	0.500	0.529	0.500	0.498	0.500	0.031	0.044
Retail Industry	0.578	0.494	0.555	0.497	0.601	0.490	-0.046	-0.066
Fortune 500	0.267	0.442	0.259	0.439	0.274	0.447	-0.015	-0.024
Advertising	0.014	0.034	0.013	0.037	0.014	0.031	-0.001	-0.021

**Panel B: AAER Sample**

	Full Sample		High Retail		Low Retail		Difference	Normalized Difference
	Mean	S.D.	Mean	S.D.	Mean	S.D.		
Observations	954		477		477			
AAER	0.050	0.219						
Retail%	0.226	0.177						
Insider%	0.039	0.097	0.038	0.070	0.041	0.118	-0.003	-0.022
Restate Magnitude	-0.011	0.040	-0.015	0.054	-0.006	0.018	-0.009	-0.158
Restate Revenue	0.183	0.387	0.197	0.398	0.170	0.376	0.027	0.049
Restate Count	2.669	2.011	2.809	1.999	2.528	2.016	0.281	0.099
Restate Years	2.315	1.902	2.460	2.010	2.170	1.778	0.290	0.108
CAR	-0.012	0.070	-0.013	0.072	-0.011	0.068	-0.002	-0.020
Previous Return	0.015	0.597	-0.028	0.539	0.057	0.649	-0.085	-0.101
Share Turnover	0.766	0.197	0.774	0.197	0.759	0.197	0.015	0.054
Size	6.950	1.535	6.965	1.707	6.934	1.342	0.031	0.014
Sales Growth	0.102	0.263	0.096	0.283	0.109	0.242	-0.013	-0.035
CEO Tenure	6.442	7.459	6.541	7.931	6.344	6.962	0.197	0.019
CEO Chair	0.514	0.500	0.537	0.499	0.491	0.500	0.046	0.065
Retail Industry	0.591	0.492	0.547	0.498	0.635	0.482	-0.088	-0.127
Fortune 500	0.277	0.448	0.258	0.438	0.296	0.457	-0.038	-0.060
Advertising	0.015	0.036	0.014	0.041	0.016	0.031	-0.002	-0.039

Notes: This table presents descriptive statistics of the variables from the propensity-score matched samples used in the Enforcement analyses. Panel A presents descriptives from the *Investigation* sample. Panel B presents descriptives from the *AAER* sample. In both panels, the first two columns present the means and standard deviations for the entire matched sample. The next four columns present the means and standard deviations separately for High Retail and Low Retail firms. The final two columns present the difference in means across these two subsamples and the normalized differences. Normalized differences are calculated as:  $\frac{\bar{X}_a - \bar{X}_b}{\sqrt{s_a^2 + s_b^2}}$  where  $\bar{X}$  and  $s^2$  are the subsample mean and subsample variance, respectively. See Appendix B for variable definitions.

**Table 10: Correlations - Enforcement**

Variables	Investigation	Retail% <sub>INV</sub>	AAER	Retail% <sub>AAER</sub>
Retail%	0.039	1	<b>0.070</b>	1
Insider%	0.005	<b>-0.149</b>	-0.013	<b>-0.171</b>
Restate Magnitude	<b>-0.195</b>	<b>-0.070</b>	-0.049	<b>-0.121</b>
Restate Revenue	<b>0.098</b>	0.031	<b>0.148</b>	0.047
Restate Count	<b>0.138</b>	0.033	<b>0.096</b>	<b>0.067</b>
Restate Years	<b>0.264</b>	<b>-0.053</b>	<b>0.077</b>	-0.029
CAR	<b>-0.136</b>	0.000	<b>-0.090</b>	-0.034
Previous Return	<b>-0.06</b>	<b>0.082</b>	<b>-0.094</b>	<b>0.071</b>
Share Turnover	<b>0.073</b>	<b>-0.360</b>	0.037	<b>-0.383</b>
Size	0.044	<b>-0.121</b>	<b>0.154</b>	<b>-0.127</b>
Sales Growth	<b>0.068</b>	-0.027	0.032	-0.021
CEO Tenure	-0.022	<b>-0.078</b>	-0.031	<b>-0.085</b>
CEO Chair	-0.022	-0.007	0.036	-0.023
Retail Industry	<b>0.078</b>	<b>-0.094</b>	0.031	<b>-0.123</b>
Fortune 500	0.003	<b>0.072</b>	<b>0.144</b>	<b>0.065</b>
Advertising	0.036	-0.014	-0.008	0.002

Notes: This table presents correlations of variables from the propensity-score matched samples used in the Enforcement analyses. The first two columns present correlations from the *Investigation* sample. The final two columns present correlations from the *AAER* sample. See Appendix B for variable definitions. Bolded cells indicate significance at the 10% level or lower

**Table 11: The association between retail ownership and the likelihood of an investigation conditional on a financial statement restatement**

VARIABLES	(1) Investigation	(2) Investigation
Retail%	0.907*** (0.206)	0.885*** (0.206)
Insider%	-0.075 (0.894)	0.104 (0.922)
Restate Magnitude	-3.558*** (0.917)	-4.005*** (0.830)
Restate Revenue	0.303 (0.245)	0.318 (0.237)
Restate Count	0.026 (0.041)	-0.005 (0.044)
Restate Years	0.173*** (0.039)	0.147*** (0.038)
CAR	-2.371** (1.020)	-2.739*** (1.003)
Previous Return	-0.015 (0.158)	0.026 (0.160)
Share Turnover	0.414 (0.303)	0.628** (0.271)
Size	-0.019 (0.077)	0.014 (0.071)
Sales Growth	0.412** (0.194)	0.227 (0.227)
CEO Tenure	-0.011 (0.008)	-0.008 (0.008)
CEO Chair	0.292** (0.126)	0.189 (0.127)
Retail Industry	0.265** (0.131)	0.304** (0.130)
Fortune 500	0.183 (0.152)	0.103 (0.160)
Advertising	-0.528 (1.465)	-0.113 (1.556)
Constant	-2.486*** (0.583)	-2.456*** (0.586)

Observations	1,312	1,312
YEAR FE	NO	YES

Notes: This table presents the results from a propensity-score matched probit regression where the dependent variable is one if an investigation into the firm was opened by the DOE within 1 year following a restatement. *Insider%* is the total shares owned by firm insiders during the prior year scaled by total shares outstanding. *Retail%* is the percentage of shares owned by retail investors during the prior year. See Appendix B for all other variable definitions. \*, \*\*, and \*\*\* Indicate significance at the 10, 5, and 1% levels. Standard errors in parentheses. Standard errors are clustered by year.

**Table 12: The association between retail ownership and the likelihood of an AAER conditional on a financial statement restatement**

VARIABLES	(1) AAER	(2) AAER
Retail%	1.449*** (0.530)	1.447*** (0.534)
Insider%	0.996 (0.775)	1.236* (0.658)
Restate Magnitude	-0.407 (1.005)	0.366 (1.215)
Restate Revenue	0.733*** (0.246)	0.720*** (0.273)
Restate Count	0.088*** (0.031)	0.080*** (0.030)
Restate Years	0.079** (0.037)	0.090** (0.042)
CAR	-2.593 (1.782)	-2.528 (1.897)
Previous Return	-0.506*** (0.120)	-0.526*** (0.143)
Share Turnover	1.206** (0.489)	1.405** (0.548)
Size	0.189** (0.077)	0.217*** (0.080)
Sales Growth	-0.226 (0.316)	-0.385 (0.332)
CEO Tenure	-0.005 (0.008)	-0.004 (0.010)
CEO Chair	0.008 (0.074)	-0.050 (0.098)
Retail Industry	-0.007 (0.165)	-0.006 (0.179)
Fortune 500	0.236 (0.252)	0.326 (0.240)
Advertising	-4.229* (2.410)	-5.124* (2.867)
Constant	-5.251*** (0.904)	-5.806*** (0.937)

Observations	954	954
YEAR FE	NO	YES

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Notes: This table presents the results from a propensity-score matched probit regression where the dependent variable is one if the firm received an AAER within the 3 years following a restatement. *Insider%* is the total shares owned by firm insiders during the prior year scaled by total shares outstanding. *Retail%* is the percentage of shares owned by retail investors during the prior year. See Appendix B for all other variable definitions. \*, \*\*, and \*\*\* Indicate significance at the 10, 5, and 1% levels. Standard errors in parentheses. Standard errors are clustered by year.