

Deterrence or Displacement? Evidence from Insider Trading Activity after SEC Enforcement Actions

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Abstract

We examine whether SEC enforcement actions against insider trading deter opportunistic insider trading of non-targeted insiders at peer firms (i.e., firms in the same industry as the target insiders). Consistent with prior research suggesting the SEC deters opportunistic trading, we find an overall decrease in the value (level) of shares traded by non-targeted insiders after the announcement of insider trading enforcement actions. However, a more careful examination reveals that non-targeted insiders trade more during more opportunistic trading windows (i.e., between the fiscal quarter end and the earnings announcement) after SEC enforcement actions targeting insider trading. We more directly link the increased trading during more opportunistic windows to the news released in the subsequent earnings announcement in two ways. First, we find that non-targeted insiders trade more during opportunistic trading windows when the next earnings announcements contain more information. Second, we find that non-targeted insiders are more likely to sell (purchase) during opportunistic windows prior to earnings announcements that reveal negative (positive) news. This evidence is inconsistent with the deterrence of SEC enforcement actions, but instead is consistent with an increase in non-targeted insiders exploiting private information obtained just before the earnings announcement. In additional cross-sectional tests, we find that non-targeted insiders are more likely to trade opportunistically when the SEC is more resource constrained, the non-targeted firm is less likely to be scrutinized by the SEC (e.g., smaller firms), and non-targeted insider trades are less likely to attract SEC attention (e.g., lower rank employees). Overall, we provide evidence that questions the effectiveness of the SEC in deterring opportunistic insider trading.

JEL classifications: G14, G38, K22

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1. Introduction

The Securities and Exchange Commission (SEC) attempts to deter illegal insider trading of non-targeted firms through enforcement actions. In its 2015 annual report, the SEC stated that the number of insider trading charges brought in 2015 sent “a strong message of deterrence to would-be violators.” Prior research provides evidence that SEC enforcement actions deter questionable insider trading activity (e.g., Del Guercio et al., 2017; Cline and Posylnaya, 2019; Davidson and Pirinsky, 2022). We provide countervailing evidence that suggests SEC enforcement actions do not deter opportunistic insider trading. We document an *increase* in insider trading activity during more opportunistic periods (i.e., between the fiscal quarter close and the earnings announcement). We link the increased opportunistic trading after an SEC enforcement action to news released in the subsequent earnings announcement. We provide evidence that non-targeted insiders trade more just prior to earnings announcements that reveal more information to investors and sell (purchase) more shares just prior to earnings announcements that reveal negative (positive) news after an SEC enforcement action within the industry. Overall, our evidence suggests that non-targeted insiders are more likely to exploit private information through insider trades after an SEC enforcement action, which shows that the SEC may *not* be as effective at deterring opportunistic insider trading as previously suggested by prior research. SEC enforcement can lead to unforeseen and adverse effects among non-targeted insiders.

The United States Congress specifically requires the SEC “to achieve an appropriate level of deterrence and thereby maximize the remedial effects of its enforcement actions” (H.R. Rep. No. 101-616, at 13, 1990). Since high-profile insider trading enforcement actions raise questions on the fairness and integrity of the capital markets, the SEC treats the detection and prosecution of insider trading violations as one of its enforcement priorities (SEC, 2016). The United States

devotes more resources to insider trading enforcement than any other country (Del Guercio et al., 2017). Firms also implement internal control systems to reduce illegal insider trading (Jagolinzer, Larcker, and Taylor, 2011). Despite the best efforts of regulators, high-profile insider trading cases have not ceased. For example, prior studies find evidence of illegal insider trading prior to SEC comment letters on revenue recognition (Dechow, Lawrence, and Ryans, 2016), around non-public SEC investigations (Blackburne, Kepler, Quinn, and Taylor, 2021), and audit report dates (Arif, Kepler, Schroeder, and Taylor, 2021). In addition, Patel and Putnins (2022) estimate that about 80% of illegal insider trading is undetected by regulatory authorities. The profusion of illegal insider trading evidence has caused the media to question whether the SEC and other government agencies can effectively detect and deter illegal insider trading (e.g., Gustin, 2012; Bobelian, 2012).¹

Becker (1968) provides an economic model of crime that suggests criminals commit crimes when the expected benefits from committing the crime outweigh the expected costs. Therefore, opportunistic insider trading is likely a function of the expected costs and benefits. Ex-ante, it is unclear how observing an SEC enforcement action impacts the expected costs and benefits of opportunistic insider trading. On the one hand, non-targeted insiders may believe that the SEC closely scrutinizes all trades in their industry after observing an enforcement action, which increases the likelihood of detection and enforcement. Therefore, non-targeted insiders may believe that the expected costs of executing an opportunistic trade increase after observing an enforcement action (Seyhun, 1992; Kedia and Rajgopal, 2011). On the other hand, non-targeted insiders may believe that the likelihood of the SEC detecting opportunistic trading decreases after

¹ For example, SAC Capital agreed to pay \$1.8 billion to settle charges related to insider trading spanning more than a decade (Hurtado, Voris, and Kishan, 2014). In addition, the SEC levied approximately \$165 million in monetary sanctions against Galleon-related insider trading enforcement actions.

observing an enforcement action in the industry, because the SEC is resource constrained and may not be able to target all insiders suspected of opportunistic trading (Kedia and Rajgopal, 2011; Bonsall, Holzman, and Miller, 2021).

Prior empirical research provides evidence consistent with SEC enforcement actions deterring illegal insider trading. For example, Cohen, Malloy, and Pomorski (2012) find a significantly negative relation between the number of SEC insider trading enforcement actions and the total number of opportunistic insider trades in the following month. Davidson and Pirinsky (2022) provide evidence that SEC enforcement actions targeting insider trading behavior deter illegal insider trading among non-targeted insiders who directly witness the action. Del Guercio et al. (2017) use the SEC's budget and staff counts to proxy for enforcement intensity and find a negative relation between resource-based measures and anticipatory run-up of prices before earnings announcements.

Despite prior research documenting deterrence, theoretical and empirical studies in policing and crime prevention discuss how enforcement can create “balloon effects.” “Balloon effect” theories suggest that enforcement does not reduce illegal activities, in an absolute sense, but moves the illegal activities to different locations, times, or types (Eck, 1993; Weisburd and Green, 1995; Guerette and Bowers, 2009; Barr and Pease, 1990, Weisburd, Wyckoff, Ready, and Eck, 2006). For example, increased enforcement of illegal drug activity may not reduce total illegal drug activity but may move it to a different location, time, or type of criminal. Fang et al. (2022) provide theoretical evidence that firms subject to less regulatory scrutiny are more likely to commit fraud after observing the targets of a resource-constrained regulator. The transparent disclosure of enforcement actions could hinder their deterrence effects because revealing the regulator's enforcement preferences could invite more violations among would-be violators that do not have

similar characteristics, even for low-probability events like SEC enforcement actions (Blank, 2016; Sherman, 1990). Therefore, the announcement of an SEC enforcement action could trigger an increase in opportunistic trading among non-targeted insiders depending on the non-targeted insiders' perceived level of enforcement risk.

We examine the deterrence of opportunistic insider trading by SEC enforcement actions using the timing of trades by non-targeted insiders. Prior research suggests that insiders trade less as the earnings announcement nears due to increased enforcement risk, which increases as insiders gather more private information about the realization of earnings during the quarter (e.g., Huddart, Ke, and Shi, 2007; Billings and Cedergren 2015). Thus, market participants suspect insider trading just prior to the earnings announcement to be more opportunistic. Following this line of reasoning, Billings and Cedergren (2015) categorize the timing of trades during the quarter into three windows: green, yellow, and red windows. The green window is the two-week period following the earnings announcement in quarter t . The red window is the period between the day after quarter $t+1$ ends and the day before the issuance of the earnings announcement for quarter $t+1$. The yellow window is the period between the green and red windows. Relative to the other two windows, insider trades during the red period are more likely to contain private information and be opportunistic (Bettis, Coles, and Lemmon, 2000). Kelson and Allen (2004) suggest that insider trading during the red window could adversely affect investor confidence. We use changes in insider trading during these three windows to assess the deterrence (or lack of deterrence) of SEC enforcement actions.

Using 136 insider trading enforcement brought by the SEC fiscal year between 2001 and 2019, we examine the trading activities of non-targeted insiders at peer firms, which we define as firms in the same industry as the targeted insider. We define peer firms as firms in the same

industry because an underlying assumption in this paper is that non-targeted insiders at peer firms need to be aware of the SEC enforcement. This assumption is very likely to hold for firms within the same industry because insiders at peer firms frequently communicate with and learn from each other (e.g., Bernard, Blackburne, and Thornock, 2020; Park, Sani, Shroff, and White, 2019). Indeed, the SEC expects the deterrence effect of its enforcement to be the greatest among the peers of the targeted insiders who are in the similar or same industry (Cutler, 2004). Lastly, prior research tends to examine the spillover and deterrence of financial misconducts within the same industry (e.g., Kedia, Koh, and Rajgopal, 2015; Gleason, Jenkins, and Johnson, 2008; Beatty, Liao, and Yu, 2013).

We compare the total value of shares traded by non-targeted insiders during the 8 quarters prior to the announcement of the SEC enforcement action (i.e., pre-period) to the 8 quarters after (post-period). Consistent with prior studies, we document a decrease in the total value of shares traded by non-targeted insiders after the announcement of the enforcement action (e.g., Cohen et al., 2012; Del Guercio et al., 2017; Cline and Posynaya, 2019), which prior research interprets as SEC investigations deterring opportunistic trading among non-targeted insiders. Without a more careful examination of the trading windows, one might incorrectly conclude that the SEC effectively deters aggressive insider trading through its enforcement actions. An interesting trend is observed as we separately examine how insider trading changes from the pre- to the post-periods for each of the three windows (i.e., green, yellow, and red windows). We find that non-targeted insiders increase the total value of shares traded during the red window after the revelation of the SEC enforcement action, which suggests that opportunistic trading increases after an SEC enforcement within the industry. We note that the increase in trading value during the red window

is offset by a reduction in the number of shares traded during the green window, which suggests a shift in trading from a less opportunistic period to a more opportunistic period.

We use two tests to link the increased trading during the red period to news released in the subsequent earnings announcement, which would suggest that non-targeted insiders are more likely to exploit private information through insider trades after an SEC enforcement action. First, we find that increased trading during the red period is higher when the subsequent earnings announcement contains more information content, which we measure using the absolute value of three-day returns surrounding the earnings announcement and the change in operating income. This finding is consistent with non-targeted insiders trading more opportunistically when they possess more private information prior to the earnings announcement. Second, we find that non-targeted insiders purchase (sell) more shares during the red window when the subsequent earnings announcement contains positive (negative) news, which suggests that non-targeted insiders trade on private information that includes the sign of the news released during the earnings announcement.

Next, we estimate several cross-sectional tests to examine how the expected level of enforcement risk affects non-targeted insiders' responses to SEC enforcement actions. First, we provide evidence that the trading of non-targeted insiders is more pronounced during the red window when the SEC is more resource constrained, which suggests that non-targeted insiders perceive a decrease in the enforcement risk after the SEC expends its resources and reveals its enforcement objectives when its budget is tighter. Second, we provide evidence that the increased trading by non-targeted insiders during the red window is more pronounced among lower ranked employees (e.g., general managers, managing directors), who are less likely to have blackout periods and are less likely to be prone to scrutiny by the SEC, media, or corporate internal control

system.² Third, we provide evidence that non-targeted insiders are more likely to trade during the red window after an enforcement action when the non-targeted firm is smaller and less likely to attract attention from the SEC and investors. For non-targeted insiders at larger firms, we observe an overall decrease in trading after observing SEC enforcement during the green and yellow windows. Collectively, these results suggest that the change in insider trading by non-targeted insiders after an SEC enforcement action is a function of the insider's perceived enforcement risk.

Our paper contributes to the accounting and finance literature in several ways. First, we are the first to document that SEC enforcement actions can increase opportunistic trading among non-targeted investors. We provide countervailing evidence to the prior research that suggests the SEC effectively deters illegal insider trading through enforcement actions (e.g., Cohen et al., 2012; Davidson and Pirinsky 2022; Thevenot, 2012). While aggregate non-targeted insider trading may decrease after an SEC investigation, our evidence suggests a more nuanced response by non-targeted insiders. Non-targeted insiders increase trading just prior to earnings announcements that contain more information. These results suggest that non-targeted insiders increase trading when they are more likely to possess private information about the upcoming earnings announcement.

With respect to regulators and practitioners, our evidence suggests that the SEC may be ineffective at deterring opportunistic insider trading. Indeed, the SEC explicitly expresses that one of main objective of enforcement is to “provides a powerful incentive for companies in the *same or similar industries* to take steps to prevent and address comparable misconduct within their own

² Prior studies suggest that most firms implement blackout periods to prevent trading on non-public information such as earnings news (e.g., Bettis et al., 2000; Roulstone, 2003; Jagolinzer et al., 2011; Denis and Xu, 2013). A survey by Deloitte Consulting LLP and the National Association of Stock Plan Professionals (NASPP) finds that blackout periods tend to be applied to higher ranked employees (e.g., CEO, CFO).

walls,” according to Stephen Culter, the former director of the SEC.³ Given its resource constraints, our paper may provide insights to the SEC on developing optimal enforcement action plans.

Lastly, our paper is also related to prior studies in criminology on the displacement effect of enforcement (e.g., Repetto, 1976; Sherman, 1990), which suggests that enforcement may displace crime rather than deter it. Our results suggest that SEC enforcement actions may move the opportunistic trading from the targeted insiders to the non-targeted insiders rather than reducing total opportunistic trading. Criminology studies emphasize the importance of understanding the “benign” and “malign” effects of displacement for crime prevention policies. Furthermore, the crime and punishment literature suggest that “there is substantial evidence that increasing the visibility of the police by hiring more officers and allocating existing officers in the ways that materially higher the perceived risk of apprehension can deter crimes” (Nagin, 2013). Our evidence suggests that deterrence is not only a function of the visibility of the enforcement action but also changes to the perceived enforcement risk by would-be violators.

2. Background and Literature Review

2.1. SEC Enforcement on Insider Trading

Section 10(b) of the Security Exchange Act of 1934 and SEC Rule 10b-5 give the SEC authority to police insider trading. Illegal insider trading refers generally to buying or selling a security, in breach of a fiduciary duty or other relationship of trust and confidence, while in possession of material, nonpublic information about the security. Insider trading includes both legal and illegal conduct (SEC 2016a). Congress has mandated the SEC to achieve an appropriate level of deterrence (H.R. Rep. No. 101-616, at 13, 1990). An SEC enforcement action is one

³ https://www.compensationstandards.com/nonMember/SEC_speech.htm (emphasis added).

mechanism that the SEC can use to deter illegal insider trading. The SEC can proceed with enforcement actions through civil actions and administrative actions (Karpoff, Lee, and Martin 2008a, 2008b). Before the Dodd-Frank Act, the SEC could only rely on civil actions by filing a complaint at the federal courts if it wanted to seek monetary penalties against an insider. As the Dodd-Frank Act increased the SEC's authority to seek monetary penalties by amending Section 21B(a)(2) of the Exchange Act, the SEC can rely on administrative actions to seek monetary penalties. An administrative law judge, who is independent of the SEC, issues initial legal conclusions and sanctions on illegal insider trading activities (SEC, 2016). As the SEC only has the authority to seek civil charges, the SEC refers cases to the Justice Department for criminal prosecutions, depending on the severity of the case (Meulbroek, 1992).

The detailed information on insider trading allegations and the defendants is publicly available through litigation releases and administrative proceedings. Litigation releases (administrative proceedings) include summary information of the civil actions (administrative actions) and typically reveal the name of the defendants, the type of inside information used, and the name of the securities traded. SEC complaints (in the case of a civil action) is a document the SEC files with the courts and provides the details of the action such as the affiliated firm of the defendants, positions held by the defendants at the firm, the relationships among the defendants, the transaction dates of the trading, the channels through which defendants obtain inside information, the transactions amounts, the number of profits (losses) they made (avoided), and the details on penalties or disgorgements.

2.2. Literature Review on Deterrence and Hypothesis Development

There are two approaches dominating the literature examining the deterrent effect of enforcement on insider trading. The first stream of literature relies on a cross-country setting and

focuses on the impact of the initial enactment or enforcement insider trading laws (e.g., Bhattacharya and Daouk, 2002; DeFond, Hung, and Trezevant, 2007; Christensen, Hail, and Leuz, 2007). For example, Fernandes and Ferreira (2009) find that the first-time enforcement of a country's insider trading laws improves stock price informativeness, especially in developed markets with strong legal institutions. This cross-country evidence collectively suggests that the enforcement of insider trading laws rather than the law *per se* significantly determines the level of insider trading activities.

The second stream of literature examines SEC enforcement within the U.S. and provides evidence of deterrence. Cohen et al. (2012) use the total number of SEC enforcement actions against illegal insider trading in month t to capture the aggressiveness of SEC activities. They find that the number of SEC enforcement actions are negatively associated the amount of opportunistic insider trading in the following month. Alternatively, Del Guercio et al. (2017) use SEC budget and staff counts as proxies for enforcement intensity. They find a negative relation between SEC enforcement intensity and the run-up of prices before earnings announcements. Jagolinzer and Roulstone (2007) find that insiders shift their trading activity from before the earnings announcement to after the earnings announcement after the passage of the Insider Trading and Securities Fraud Enforcement Act of 1988. Lastly, Davidson and Pirinsky (2022) provide evidence that the total number of shares traded by non-targeted insiders decreases after witnessing the SEC targeting employees at their connected firm. In summary, prior empirical research suggests that SEC enforcement actions deter aggressive insider trading.

Despite the evidence in prior studies showing that enforcement deters insider trading, we argue that observing SEC enforcement actions in the industry may increase the amount of opportunistic insider trading among other individuals, which would suggest that SEC enforcement

actions may not be as effective at deterring aggressive insider trading as previously thought. Prior studies in policing and crime prevention provide both theoretical and empirical evidence that enforcement against one kind of crime does not always reduce crime in an absolute sense. This most often occurs because the enforcement of one type of crime leads to lax enforcement of similar crimes in other locations, similar crimes at different times, or other types of crimes (e.g., Barr and Pease, 1990; Guerette and Bowers, 2009; Weisburd et al., 2006). These crime displacement effects are also referred to as “balloon effects.” For example, Nguyen (2021) finds that the level of white-collar crime increases after 9/11, because the FBI shifted its attention to counterterrorism. The FBI, like other regulatory or enforcement agencies, operate on a limited budget. Therefore, increasing enforcement of one illegal activity typically leads a reduction of enforcement of another illegal activity. Similarly, Fang et al. (2022) provide theoretical evidence that firms with low to medium levels of expected fraud are subject to less scrutiny and increase fraudulent behavior when resource-constrained regulators target the most fraudulent firms.

The media (e.g., Gustin, 2012; Bobelian, 2012) and prior research suggests that the SEC is resource constrained and cannot target all fraudulent behavior. Kedia and Ragjopal (2011) show that the SEC is less likely to target firms located farther from the SEC’s regional offices. Similarly, Zheng (2021) find that the SEC tend to use administrative proceedings, which are cheaper and faster than civil actions to prosecute when its budget is tighter. Indeed, busyness (e.g., high case backlogs) at the SEC’s regional offices limits the SEC’s ability to investigate financial frauds, leading to lower earnings quality (Bonsall et al., 2022). Given limited resources, observing a SEC enforcement action in the industry may decrease the perceived enforcement risk to non-targeted insiders because the SEC has committed considerable resources to the enforcement actions under

way. After each public announcement, the likelihood of aggressive insider trading may increase as the allocation of the SEC's budget to existing enforcement actions becomes clearer.

In the setting of insider trading, as the perceived likelihood of enforcement decreases after observing an SEC enforcement action, SEC enforcement actions on target firms may trigger non-targeted insiders to increase opportunistic insider trading. Therefore, we expect the trading of non-targeted insiders to increase just before the earnings announcement after an enforcement action within the industry. Insiders likely possess more private information about earnings as the earnings announcement nears, which reduces uncertainty about the realization of earnings and increases the insider's trading benefits (Ke et al., 2003; Huddart et al., 2007). Trading just before an earnings announcement is considered the most prohibited and is most likely to damage investors' confidence (Kelson and Allen, 2004). We expect this relation to be strongest when the likelihood of enforcement risk is lower.

3. Sample Selection

3.1. Enforcement actions and identification of insiders at non-targeted firms

We hand-collect insider trading enforcement actions (both civil and administrative proceedings) from the "Select SEC and Market Data" report produced by the SEC. In this report, the SEC provides information on initiated insider trading charges and discloses the firm name, filing date, defendants, defendants' position at the firm, trading date, and the trading amount.⁴ We collect this enforcement action data between the SEC's fiscal year 2001 and 2019.^{5,6} We identify

⁴ If there are any updates on the initially filed cases, the SEC discloses the additional information under a different release number on their website (<http://www.sec.gov/litigation.shtml>).

⁵ The SEC's fiscal year runs from October 1 to September 30. The annual report for fiscal year 2001 includes cases filed between October 1, 2000 and September 30, 2001.

⁶ As of August 2002, Section 403 of SOX requires insider trades to be filed on a much timelier basis. Until August 2002, the requirement of filing insider trading was to file Form 4 within 10 days after the close of the calendar month in which the transaction had occurred. SOX amends Section 16(b) and requires to file Form 4 within two business

955 insider trading enforcement actions and classify them into five types of insider trading enforcement actions.⁷

For the purposes of our empirical tests, we include only insider trading enforcement actions that are brought against corporate insiders, which include officers, directors, and employees who traded the firm's securities. We include only corporate insider trading cases to facilitate our ability to test for deterrence of aggressive insider trading among non-targeted insiders at peer firms. Among these 955 insider trading cases, 267 trading cases are insider trading cases brought against corporate insiders. We further exclude insider trading enforcement actions where the target firm's (i.e., affiliated companies of those accused corporate insiders) industry (SIC 4 digit) is not identifiable. When there is more than one enforcement action announced on the same announcement date within the same industry, we then keep only one insider trading enforcement actions. This reduces the insider trading enforcement actions to 248 cases. We treat the multiple insider trading cases as one case if the enforcement actions occur within one year of each other and target the same industry.⁸ Our sample consists of all non-targeted insiders employed by the peer firm in the same industry as the firm employing the insider targeted by the SEC. We require

days after transaction occurs under insider trading disclosure in Section 403. In this study, we do not differentiate Pre-SOX and Post-SOX period.

⁷ We identify 5 types of insider trading charges brought by the SEC: 1) "corporate insiders" include officers, directors, and employees who traded their own firm's securities after learning of significant and confidential firm developments; 2) "business associates" include friends, business associates, family members, and other "tippees" of such officers, directors, and employees, who traded the securities after receiving significant and confidential firm information; 3) "employees of affiliated firms" include employees of law, banking, brokerage, and printing firms who are given significant and confidential information to provide services to the firm whose securities are traded; 4) "government employees" include individuals at government organizations who learn of significant and confidential information through their employment in the government organization; and 5) "other persons" include any other persons who took advantage of significant and confidential information from their employers. <http://www.sec.gov/answers/insider.htm>.

⁸ For example, the following four insider trading cases are related to SIC 3674 (Semiconductors and related devices). Release No. 34-81160 is announced at 07/18/2017 and illegal insider(s) is associated with Nalco Chemical Co. Release No. LR-23937 is announced at 09/20/2017 and illegal insider(s) is associated with Alliance Fiber Optic Prods. Inc. Release No. LR-24015 is announced at 12/14/2017 and illegal insider(s) is associated with International Rectifier Corp. Release No. 33-10525 is announced at 07/24/2018 and illegal insider(s) is associated with Alliance Fiber Optic Prods. Inc. We group these four insider trading cases into one. Pre-period is 8 quarters prior to the first announcement date (i.e., 07/18/2017) and post-period is 8 quarters from the last announcement date (i.e., 07/24/2018).

data from Thompson Reuters (insider trading data), CRSP, and Compustat. After requiring sufficient data to calculate our independent and dependent variables, we are left with 136 enforcement actions. The non-targeted insiders belong to 3,878 peer firms in 90 industries. Our final sample includes year-quarter observations between 1998 and 2020.

To examine whether the release of SEC enforcement deters opportunistic insider trading, we compare the changes in insider trading activity over the 16-quarter window around the announcement date of SEC enforcement actions (i.e., eight quarters for each of the pre- and post-periods).⁹ We further define three periods within a quarter following Billings and Cedegren (2015). Green window (*GR*) is the two-week window (14 days) starting from the earnings announcement day. Red window (*R*) starts one day after the fiscal quarter-end and ends one day before the next earnings announcement day. Yellow window (*Y*) is between the green and red trading window (i.e., starting from the 15th day after earnings announcement day to the fiscal period end). In our main analysis, we focus on the total share transaction value for each window in each quarter to examine changes in trading behavior. Share transaction value is defined as the number of shares traded times the transaction price for each individual transaction and then sums all individual transaction values that are executed for each of the three windows during the quarter. Then, we scale this by the market capitalization of stock at the beginning of the quarter. *TradingValueAll* is equal to the total share transaction value that take place across all three windows (i.e., green, yellow, and red window). *TradingValueGR* is equal to the total share transaction value that take place in green window. *TradingValueY* is equal to the total share transaction value that take place in yellow window. *TradingValueR* is equal to the total trading value of insider trades that take place in red window. In robustness tests, we also examine the number of shares traded (see Section 7).

⁹ If same firm-quarters belong to both pre- and post- period, we drop pre-period and keep only post-period. This allows us to avoid any duplicated firm-quarter window observations.

In Table 1, we present the summary statistics of the variables used in the main analysis. We present the summary statistics of the full sample in Panel A and separately for pre- and post-SEC enforcement in Panel B. Consistent with prior studies (e.g., Bettis et al., 2000; Huddart et al., 2007; Billings and Cedergrén, 2015), the total dollar volume of trades during the yellow (*TradingValueY*) is the highest. While the total dollar volume of trades during the red window (*TradingValueR*) is the lowest. Compared to the mean of 23.748 in the pre-period, the total dollar volume of trades across all three windows (*TradingValueAll*) is lower in the post-period; however, the difference is insignificant at conventional levels. Consistent with prior research (Cohen et al., 2012; Davidson and Pirinsky 2022), univariate evidence suggests that non-targeted insiders trade less after an enforcement action occurring in the same industry. Similarly, *TradingValueGR* and *TradingValueY* both decrease in the post-period by 4% and 3%, respectively. However, the difference is not statistically significant at conventional levels. Meanwhile, *TradingValueR* increases by 10% from 2.576 in the pre-period to 2.834 in the post-period, which is significant at the 1% level. This univariate evidence suggests that non-targeted insiders may become more aggressive in their trading by increasing their trades during more opportunistic trading periods.

Table 2 shows the correlation between each variable used in the main analysis. The total dollar volume of trades during all three windows (i.e., *TradingValueGR*, *TradingValueY*, and *TradingValueR*) is negatively correlated with firm size (*Size*) and profitability (*ROA*), consistent with prior studies (e.g., Seyhun, 1986; Cohen et al., 2012). The significantly negative correlation between the book-to-market ratio (*BM*) and trading value during all three windows indicates a positive correlation between growth opportunities and trading activities, consistent with prior research (e.g., Piotroski and Roulstone, 2005; Rozeff and Zaman, 1998).

4. Empirical models and results

4.1. Insider trades after SEC enforcement action announcements

We use the following equation to examine whether non-targeted insiders at peer firms execute more or fewer total trades after an SEC enforcement action.

$$\begin{aligned} TradingValue_{it} = & a_{it} + b_1 * Post_{it} + b_2 * Size_{it} + b_3 * ROA_{it} + b_4 * BTM_{it} + \\ & Year - Qtr FEs + Firm FEs + \varepsilon_{it} \end{aligned} \quad (1)$$

We estimate the following equation separately for the following dependent variables: *TradingValueAll*, *TradingValueGR*, *TradingValueY*, and *TradingValueR*. The pre-filing (post-filing) period is the eight quarters prior (subsequent) to the announcement date of SEC insider trading enforcement against the targeted firm in the same industry. *Post* is equal to one for the eight quarters after the announcement of the enforcement action. We only include firm-quarter observations that are in either the pre-filing or post-filing periods. *Post* allows us to compare the change in the non-targeted insider's trading behavior from the pre-filing to the post-filing periods. Following prior studies (e.g., Lakonishok and Lee, 2011), we include *Size*, *ROA*, and *BTM* as controls. We include firm fixed effects to control for firm-level characteristics and year-quarter fixed effects to control macro-economic characteristics.¹⁰

Table 3 includes the results from estimating Equation (1). In column (1), we examine whether the total value of shares traded by non-targeted insiders change after an SEC enforcement action. The negative coefficient on *Post* in column (1) is insignificant at conventional levels using two-sided p-values. However, using a one-sided p-value, the coefficient is significant at the 10%

¹⁰ Jennings, Kim, Lee, and Taylor (2022) provide evidence that high-dimensional fixed effects can bias toward accepting a false positive. Therefore, we estimate all the results without any fixed effects. All coefficient signs are the same and significance levels are similar. Therefore, we do not believe that the high-dimensional fixed effects in our model are biasing toward accepting a false positive.

level (p-value equal to 0.06), indicates an overall decrease in the total dollar value of shares traded by non-targeted insiders after SEC enforcement. This result supports the findings of deterrence found in prior studies (Davidson and Pirinsky, 2022; Del Guercio et al., 2017; Jagolinzer and Roulstone, 2007).

We now examine the green, yellow, and red windows separately to examine when the overall decrease in *TradingValueAll* occurs. In column (2), we find a decrease in trading value during the green window, as indicated by the significantly (5% level) negative coefficient on *Post* when *TradingValueGR* is the dependent variable. In column (3), the coefficient on *Post* is insignificant. However, we find a significantly (1% level) positive coefficient on *Post* when *TradingValueR* is the dependent variable, which suggests an increase in the total dollar amount of trades during the red window from non-targeted insiders after observing SEC enforcement in the same industry. Indeed, the increase in *TradingValueR* is economically significant, as the total value of trading in the red window decreases by 0.353, which is 13% of the mean *TradingValueR*. Taken together, the results suggest that SEC enforcement may not deter aggressive trading activity by non-targeted insiders as previously thought. Instead, the results suggest that non-targeted insiders experience a decrease in enforcement risk, and thus increasing their trades during more opportunistic trading windows after observing SEC enforcement actions.

5. Non-targeted Insiders use of Private Information

We estimate two tests to examine whether non-targeted insiders are more likely to trade on private information released during the subsequent earnings announcement after observing an SEC investigation. If we find evidence that non-targeted insiders are trading on information not

released until the earnings announcement, then it would support the notion that they are trading opportunistically.

5.1. *The Amount of Upcoming Earnings News*

We first examine whether non-targeted insiders trade more during the red window when the subsequent earnings announcement contains more new information to investors. We partition the sample based on the amount of news released in the subsequent earnings announcement and test whether trading increases during each of these two subsamples after an SEC enforcement action. If the trades during the red window are more opportunistic, we predict that corporate insiders are more likely to trade during the red window when more information is released during the subsequent earnings announcement. Evidence consistent with the above would suggest that non-targeted insiders are more likely to obtain and trade on private information obtained prior to the firm announcing earnings news after an SEC enforcement action.

In Table 4 Panel A, we partition the sample into high and low earnings news using the absolute value of the three-day abnormal return around the earnings announcement. We split the sample based on the sample median. From column (1) to column (3), we present results for the subsample with a higher absolute value of abnormal returns. From column (4) to column (6), we present results for the subsample with a lower absolute value of abnormal returns. Consistent with our prediction, the significantly (5% level) positive coefficient on *Post* when *TradingValueR* is the dependent variable in column (3) suggests that non-targeted insiders trade more after an SEC enforcement action when there is a greater amount of information revealed during the earnings announcement (i.e., red window).

In Table 4 Panel B, we partition the sample into high and low earnings news using the absolute value of the change in operating income.¹¹ *Chg Oper Inc* is equal to operating income in quarter t , less operating income in quarter $t-1$, and scaled by total assets. Conceptually, if the absolute value of the change in operating income is higher, then more information is revealed through operating income. We split the sample based on the sample median change in operating income. We present the results for the subsample with a higher absolute value of the change in operating income in column (1) to column (3). Similar to the results in Panel A, we find a significantly (1% level) positive coefficient on *Post* when *TradingValueR* is the dependent variable in column (3).

The results in Panel A and B are consistent with non-targeted insiders trading more on material private information after an SEC enforcement action within the industry. These tests suggest that managers are aware of news that will be revealed in the subsequent earnings announcement and take advantage that private information by trading prior to the earnings announcement.

5.2. *Good News and Bad News*

In the previous section, we test whether non-targeted insiders increase their trading when the earnings announcement contains more information. In this section, we test whether non-targeted insiders are more likely to sell (purchase) shares just prior to the release of negative (positive) news released during the subsequent earnings announcement, providing evidence that

¹¹ We use operating income rather than net income for several reasons. First, investors are more likely to be interested in operating income than net income, which is more likely to include non-recurring expenses and revenues. Investors and insiders are more likely focus on the valuation effects of recurring earnings. Second, in a subsequent section, we find that lower ranked insiders (e.g., plant managers) are responsible for the increased trading during the red window after an SEC enforcement action. Lower ranked employees are likely to be more familiar with the operations of the firm and less so with non-recurring items that are more likely to be non-operating activities. Nevertheless, our results in Table 4 are robust to different definitions of earnings such as net income (NI) and income before extraordinary item (IB).

non-targeted insiders opportunistically trade on directional private information after observing an SEC enforcement action within the industry.

Because insiders are most likely to obtain private information about earnings announcements during the red window, we expect non-targeted insiders to purchase (sell) more during the red window when the news released in earnings is positive (negative). In Panel A of Table 5, we define good (bad) news as firm-quarters with a positive (negative) change in operating income, which we define as the difference between operating income in quarter t relative to quarter $t-1$. In column (3), we find that the total dollar value of purchases is significantly higher (10% level) during the red window when the earnings announcement is positive. In column (6), we also find that the total dollar value of sales is significantly higher (1% level) during the red window when the earnings surprise is negative.

In column (1) to (3) of Panel B in Table 5, we include only those observations in the top *Chg_Oper_Inc* tercile (i.e., extreme good news) and examine purchase trading volume. We find a positive and significant (10% level) coefficient during the red window of the purchase sample in column (3), which suggests that non-targeted insiders increase purchases during the red window when the operating news released during the earnings announcement is positive. In column (4) to (6) of Panel B, we isolate the observations in the lowest *Chg_Oper_Inc* tercile (i.e., extreme bad news) and examine sales trading volume after an enforcement action. We continue to find that the total value of sales by non-targeted insiders are significantly higher (1% level) when *Chg_Oper_Inc* is in the lowest tercile, which suggests that non-targeted insiders increase sales during the red window when the operating news released during the earnings announcement is negative.¹² The greater effects in the subsample of insider sales are also consistent with prior

¹² The results for sales are robust to various definitions of earnings, such as net income (NI) and income before extraordinary item (IB). However, the results for purchases are not robust when using other definitions of earnings.

studies that insider sales carry higher enforcement and legal costs (Cheng and Lo, 2006; Chen, Martin, and Wang, 2013). Thus, insider sales are more sensitive to changes in SEC enforcement than insider purchases. Even though it is possible that insider sales may arise for liquidation purposes, those sales may be opportunistic because they carry private information about upcoming earnings announcements.

Collectively, these results suggest that non-targeted insiders more likely to purchase (sell) shares just before the earnings announcement after an enforcement action if the upcoming news is positive (negative). These results support the notion that non-targeted insiders are more likely to opportunistically trade using private information about the sign of the earning news after an SEC enforcement actions.

6. Cross-sectional tests

6.1. SEC budget constraints

We conduct several cross-sectional tests to examine how expected enforcement risk affects the relations documented in Table 3. The first cross-sectional test that we examine is whether SEC enforcement increases the trading of non-targeted insiders when the SEC has tighter budget constraints. Prior studies suggest that the SEC is resource-constrained, which limits the SEC in who the SEC can target (Kedia and Rajgopal, 2011). Consequently, when the SEC's resources decrease, we expect fewer enforcement actions and more non-targeted violations that go unexamined (Nguyen, 2021; Bonsall et al., 2021). We anticipate that non-targeted insiders are more likely to increase trading during the most opportunistic window (i.e., red window) when the SEC has tighter budget constraints, because the probability of being caught is even lower. For each year, we divide the SEC's budget by the total market capitalization of all public firms in the current

year to identify budget constraints.¹³ The higher the value, the less resource-constrained the SEC is. We partition years by the median value with the above (below) median values representing less (more) resource constrained years.

Table 6 reports the estimation results. Column (1), (2), and (3) show the estimation results of Equation (1) for the three intra-quarter windows when the SEC faces greater budget constraints. Column (4), (5), and (6) show the estimation results of Equation (1) for three intra-quarter windows when the SEC faces less budget constraints. Consistent with our prediction, the increase in trading during the red window is more prominent, as indicated by the significantly (1% level) positive coefficient of 0.593 on *Post* when *TradingValueR* is the dependent variable in column (3). In addition, trading during the yellow window (*TradingValueY*) increases when the SEC is more resource constrained, which may suggest non-targeted insiders shifting their trades from less to more opportunistic windows. Meanwhile, non-targeted insider trading decreases during yellow (*TradingValueY*) and green windows (*TradingValueGR*) when the SEC is less resource constrained, which may indicate some level of deterrence when the SEC's budget is less constrained.

6.2. Insider rank

We next examine what kind of insiders tend to increase their trading during the red window after observing SEC enforcement actions at peer firms. We expect low-rank employees to trade more because high-rank employees' trading invokes greater market attention, especially from the media (Rogers, Skinner, and Zechman, 2016). In addition, firms frequently implement blackout periods on the trading activity of high-rank employees (Bettis et al., 2000). The recent survey

¹³ We use the overall SEC budget rather than just the budget of the Division of Enforcement due to data limitations. Nevertheless, Del Guercio et al. (2017) suggest that "overall budgets and staff are reasonable proxies for variation in the intensity of detection and prosecution of illegal insider trading over time" because of the high correlation (0.96-0.98) between the budgets and staff of the Division of Enforcement and the overall SEC numbers.

conducted by Deloitte/NASPP also indicates that the majority firms require executive officers to obtain pre-clearance for individual trades. Therefore, high-rank employees are much less likely to trade inside during the red window (Huddart et al., 2007). Following Thompson Reuters insider hierarchy classification, we partition our sample into high- and low-rank insiders. High-rank insiders include board members and C-level executives, while low-rank insiders include general managers and managing directors.¹⁴

Table 7 presents the results of estimating Equation (1) for the subsample of low (high) rank employees in column (1) – (3) (in column (4) – (6)). The significantly (5% level) positive coefficient on *Post* for *TradingValueR* in column (3) indicates that low-rank employees increase the total value of shares traded during the red window after observing an SEC enforcement action. In particular, the significantly negative coefficient on *Post* for *TradingValueGR* in column (1) suggests an intra-quarter shift in trading from a less risky window (i.e., the green window) to a riskier window (i.e., the red window). Turning to the trading of high-rank employees, we find no evidence that high-rank employees trade less during the green or yellow windows nor do we find them trading more during the red window. This evidence is unsurprising given the level of scrutiny on the trades of high-rank employees. Lower ranked employees are less prone to shareholder and regulatory monitoring of questionable insider trades and are more likely to execute their trades when the underlying information gets more certain after an SEC enforcement action.

6.3. *Visibility*

Lastly, we examine how the increase in opportunistic trading after observing an SEC enforcement action varies with the visibility of the firm employing the non-targeted insiders. Kedia

¹⁴ Appendix A provides a detailed explanation of high- vs. low-rank insiders. We classify high rank employees as ‘rolecode’ variable equals CB, CEO, CO, GC, P, AC, AF, CC, CFO, CI, CT, D, DO, EC, FC, GP, or H. We classify low rank employees as ‘rolecode’ variable equals M, MC, MD, O, OB, OD, OP, OS, OT, OX, S, SC, TR, VC, AV, C, EVP, OE, GM, LP, SVP, T, VP, AI, B, BC, BT, CP, DS, F, FO, IA, R, SH, UT, VT, or X.

and Rajagopal (2011) show that the SEC is more likely to target large firms such as those on the fortune 500 list. Similarly, Agrawal and Cooper (2015) and Zheng (2021) suggest that the SEC is more likely to target violators who can generate more media coverage to showcase its enforcement achievements. Given the SEC's preference for large firms and the lack of visibility of smaller firms, we expect that the increase in trades during the red window to be more prominent in the subsample of small firms. We use the firm's market value within the industry as a proxy for visibility and partition the sample into large and small firms based on the median value.

Table 8 reports the results of estimating Equation (1) for the subsample of small and large firms. Consistent with our prediction, the coefficient on *TradingValueR* in column (3) is significantly (1% level) positive in the subsample of small firms. Meanwhile, we observe significantly (5% level) negative coefficients on *Post* for *TradingValueGR* in column (4) and *TradingValueY* in column (5) for the subsample of larger firms, suggesting that non-targeted insiders employed by larger firms trade less during the green and yellow windows.

In summary, the three cross-sectional tests included in this section provide evidence that the SEC does not uniformly deter aggressive insider trading but may inadvertently provide an environment that fosters aggressive insider trading among non-targeted insiders that face lower enforcement risk. These findings are consistent with the displacement effects of enforcement (e.g., Repetto, 1976; Sherman, 1990), which suggests that enforcement may displace crime rather than deter it.

7. Robustness Tests

7.1. Isolating Quarters with Only Earnings Announcements

The significant correlation between earnings news and insider trades during the red window is suggestive that insiders are trading on earnings-related information. However, one may argue that the increase in the total value of shares traded during the red window trading is due to changes in non-earnings-related information. Therefore, in an additional test, we exclude firm-quarter windows with major non-earnings events such as, mergers, acquisitions, SEOs, share repurchases, stock splits, or dividend declaration announcements. This test also reduces concerns that observing SEC enforcement actions changes the timing of disclosures. For example, it is possible that managers are more likely to announce dividends or share repurchases in the red window in the post-period (i.e., after observing SEC enforcement against insider trading), leading to an increase in trading before those corporate events (John and Lang, 1991; Keown and Pinkerton, 1981; Johnson, Serrano, and Thompson, 1996).

Table 9 presents the estimation results of equation (1) for 73,946 observations after removing firm-quarters with mergers, acquisitions, SEOs, share repurchases, stock splits, or dividend declaration announcements. In column (3), the coefficient on *Post* continues to be significant (1% level) and positive, indicating an increase in the total dollar value of shares traded by non-targeted insider after an SEC enforcement action during the red window. This result is consistent with non-targeted insiders engaging in more opportunistic trading after SEC enforcement actions. In column (2), we also continue to find a negative and significant coefficient at the 5% level when the total value of trades during the green window is the dependent variable. Collectively, our results are robust to excluding major corporate events.

7.2. *Alternative Measures of Trading Activities*

In Table 10, we present the estimation results using the total number of shares traded to proxy for insider trading activities rather than the total value of shares traded. We define

TradingSharesGR, *TradingSharesY*, and *TradingSharesR* as the total number of shares traded in the green, yellow, and red windows, respectively. *TradingSharesAll* is the total number of shares traded across all three windows. We continue to find results similar to Table 3. Interestingly, we continue to find an overall decrease in the total shares traded by non-targeted insiders after an SEC enforcement action, which is indicated by a negative and significant (10% level) coefficient on *Post* in column 1. The coefficient on *Post* is significantly positive at the 5% level during the red window in column 4. The coefficients on *Post* are significantly negative at the 5% and 10% levels during the green and yellow windows, respectively. This evidence continues to suggest that non-targeted insiders increase trading during more opportunistic periods (i.e., red windows) after observing SEC enforcement actions within the industry; meanwhile, the total insider trading activities appear to decrease on the aggregate.

8. Conclusion

We assess the deterrence effects of SEC enforcement actions targeting insider trading. We examine the trading values of non-targeted insiders at peer firms (i.e., firms in the same industry as the firm employing the targeted insider) before and after observing the SEC enforcement action. Consistent with prior research (e.g., Del Guercio et al., 2017; Davidson and Pirinsky, 2022), we find that the total trading value by non-targeted insiders decreases as a whole after an SEC enforcement action. After partitioning the trading windows based on the likelihood of obtaining private information about earnings announcements, we find that non-targeted insiders trade more during the most aggressive trading window (i.e., between fiscal quarter end and the earnings announcement) after observing the enforcement action. The window between the fiscal quarter end and the earnings announcement is more likely to contain opportunistic insider trades because

insiders are more likely to possess private information about the earnings announcement. Meanwhile, the value of traded shares by non-targeted insiders during the two-week period after the earnings announcement significantly decreases, which results in the overall decrease in trading value by non-targeted insiders.

We linked the increased opportunistic trading after the SEC enforcement action to the information released during the subsequent earnings announcement. We provide evidence that the increased trading during the red period after an SEC enforcement action is more likely to occur just before earnings announcements that have more information. We also provide evidence that non-targeted insiders are more likely to purchase (sell) shares just prior an earnings announcement releasing positive (negative) earnings news after observing an SEC enforcement action in the industry. These results suggest that non-targeted insiders are more likely to exploit private information when executing their trades after observing an SEC enforcement action in the industry. In additional cross-sectional tests, we find that the increase in opportunistic insider trades are more pronounced when the SEC's budget is more constrained, among low-rank employees, and when the firm of the non-targeted insider is less visible.

Recent research provides evidence that SEC enforcement action deter illegal insider trading (e.g., Davidson and Pirinsky, 2022). Collectively, our results question the effectiveness of SEC enforcement actions in deterring opportunistic insider trading. Our results support the media questioning the effectiveness of the SEC in protecting the integrity of the financial markets. Our study does not definitely provide evidence on why the SEC is ineffective at deterring opportunistic insider trading. However, our results suggest that one possible reason is the lack of resources allocated to the SEC to effectively protect the financial markets. It is also possible that the SEC is underperforming based on the resources provided. We cannot distinguish between these two

explanations. Nevertheless, we document displacement effects of SEC enforcement actions. Our results suggest that opportunistic insider trading moves from targeted insiders to non-targeted insiders after an SEC enforcement action. The SEC and other policy makers may want to beware the malign displacement effects where insiders exploit privileged information about earnings after observing SEC enforcement actions.

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Appendix A. Variable definitions

Variables	Description
<i>TradingValueGR</i>	Total trading value of insider trades that take place in green period. Green period is two-week period (i.e., 14 days) starting from the earnings announcement date. Total trading value is defined as sum of number of shares traded multiply by transaction price for individual transactions scaled by market capitalization of stock.
<i>TradingValueY</i>	Total trading value of insider trades that take place in yellow period. Yellow period is the window between the green and red trading window (i.e., starting from the 15th day after earnings announcement day to the fiscal-quarter-end). Total trading value is defined as sum of number of shares traded multiply by transaction price for individual transactions scaled by market capitalization of stock.
<i>TradingValueR</i>	Total trading value of insider trades that take place in red period. Red period starts one day after the fiscal-quarter-end and ends one day before the next earnings announcement day. Total trading value is defined as sum of number of shares traded multiply by transaction price for individual transactions scaled by market capitalization of stock.
<i>TradingValueAll</i>	Total trading value of insider trades of insider trades that take place across all three periods (i.e., Green, Yellow, and Red period). Total trading value is defined as sum of number of shares traded multiply by transaction price for individual transactions scaled by market capitalization of stock.
<i>Post</i>	An Indicator variable equals to 1 if firm-quarter window is belongs to post-announcement date of SEC enforcement action on target accused insiders
<i>Size</i>	The natural log of total assets
<i>BM</i>	Book value of equity divided by market value of equity
<i>ROA</i>	Income before extra-ordinary items divided by prior quarter total asset.

Table 1: Summary Statistics

Panel A examines the full sample of 94,910 firm-quarter observations from 1998 to 2020. Panel B separates the full sample into pre- and post-period, where the post-period is defined as the eight firm-quarter observations after the SEC enforcement announcements on target firms. Refer to Appendix A for variable definitions.

Panel A.

Variable	# of Obs	Mean	Stdev	50th
<i>TradingValueAll</i>	92451	23.211	90.430	0
<i>TradingValueGR</i>	92451	4.777	18.803	0
<i>TradingValueY</i>	92451	8.673	34.045	0
<i>TradingValueR</i>	92451	2.723	13.948	0
<i>Size</i>	92451	6.170	2.212	6.151
<i>BM</i>	92451	0.607	0.602	0.474
<i>ROA</i>	92451	-0.023	0.085	0.002

Panel B.

Variable	Pre		Post		
	# of Obs	Mean	# of Obs	Mean	Difference P-value
<i>TradingValueAll</i>	39605	23.748	52846	22.809	0.120
<i>TradingValueGR</i>	39605	4.887	52846	4.695	0.128
<i>TradingValueY</i>	39605	8.826	52846	8.558	0.237
<i>TradingValueR</i>	39605	2.576	52846	2.834	0.005
<i>Size</i>	39605	6.095	52846	6.226	<0.001
<i>BM</i>	39605	0.612	52846	0.604	0.035
<i>ROA</i>	39605	-0.024	52846	-0.023	0.245

Table 2: Correlations

This table presents Pearson correlation for the main variables. Top row represents the correlation coefficients and the bottom row represents p-value. All variables are defined in Appendix A. All continuous variables are winsorized at the 1st and 99th percentiles.

	<i>TradingValueAll</i>	<i>TradingValueGR</i>	<i>TradingValueY</i>	<i>TradingValueR</i>	<i>Post</i>	<i>Size</i>	<i>BM</i>	<i>ROA</i>
<i>TradingValueAll</i>		0.53696 <.0001	0.72859 <.0001	0.5169 <.0001	-0.00514 0.118	-0.07932 <.0001	-0.05951 <.0001	-0.00832 0.0114
<i>TradingValueGR</i>	0.53696 <.0001		0.27917 <.0001	0.15479 <.0001	-0.00504 0.1251	-0.05314 <.0001	-0.0587 <.0001	0.03669 <.0001
<i>TradingValueY</i>	0.72859 <.0001	0.27917 <.0001		0.21805 <.0001	-0.0039 0.2356	-0.0603 <.0001	-0.05753 <.0001	0.01627 <.0001
<i>TradingValueR</i>	0.5169 <.0001	0.15479 <.0001	0.21805 <.0001		0.00918 0.0053	-0.08933 <.0001	-0.04596 <.0001	-0.03566 <.0001
<i>Post</i>	-0.00514 0.118	-0.00504 0.1251	-0.0039 0.2356	0.00918 0.0053		0.02951 <.0001	-0.00692 0.0354	0.00384 0.2431
<i>Size</i>	-0.07932 <.0001	-0.05314 <.0001	-0.0603 <.0001	-0.08933 <.0001	0.02951 <.0001		0.09512 <.0001	0.42199 <.0001
<i>BM</i>	-0.05951 <.0001	-0.0587 <.0001	-0.05753 <.0001	-0.04596 <.0001	-0.00692 0.0354	0.09512 <.0001		0.11321 <.0001
<i>ROA</i>	-0.00832 0.0114	0.03669 <.0001	0.01627 <.0001	-0.03566 <.0001	0.00384 0.2431	0.42199 <.0001	0.11321 <.0001	

Table 3: Intra-quarter shifting of insider trades after SEC enforcement action announcements

This table documents that insiders in peer firms of target firms disproportionately shift their trades in the days where the insider trades are least likely to be allowed under the company trading policy and the upcoming information is more certain. Peer firms are firms that share the same 4-digit SIC industry classification in the same year as the target firms. We define three periods within a quarter following Billings and Cedegren (2015). Green period (*GR*) is the two-week period (14 days) starting from the earnings announcement day. *TradingValueGR* is the total trading value of insider trades that take place in green period. Red period (*R*) starts one day after the fiscal quarter-end and ends one day before the next earnings announcement day. *TradingValueR* is the total trading value of insider trades that take place in red period. Yellow period (*Y*) is the window between the green and red trading window (i.e., starting from the 15th day after earnings announcement day to the forecast period end). *TradingValueY* is the total trading value of insider trades that take place in yellow period. *TradingValueAll* is the total trading value of insider trades that take place across all three periods. The sample consists of firm-quarter observations from 1998 to 2020. All variables are as defined in Appendix A. All continuous variables are winsorized at the 1st and 99th percentiles. t-statistics, in parentheses, are reported below the coefficient estimates. *, **, and *** represent significance at the 10%, 5%, and 1% levels, respectively. Standard errors are clustered at the firm level.

	<i>TradingValueAll</i>	<i>TradingValueGR</i>	<i>TradingValueY</i>	<i>TradingValueR</i>
	(1)	(2)	(3)	(4)
Post	-1.382 (-1.596)	-0.351** (-2.000)	-0.512 (-1.548)	0.353*** (2.662)
Size	-10.673*** (-10.145)	-1.319*** (-7.000)	-3.056*** (-7.917)	-0.777*** (-5.104)
ROA	22.466*** (3.096)	9.467*** (7.394)	10.443*** (4.242)	0.918 (0.833)
BM	-1.636 (-1.576)	-0.513*** (-2.756)	-1.203*** (-3.515)	-0.169 (-1.005)
Year-Qtr FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Obs.	92,451	92,451	92,451	92,451
Adj. R-squared	0.114	0.097	0.099	0.096

Table 4: Upcoming earnings news and shifting of insider trades after SEC enforcement action announcements

This table documents that the shifting of insider trades in peer firms after SEC enforcement action announcements on target firms differs on the upcoming earnings news amount. Panel A defines upcoming earnings news amount using the absolute value of 3-day market-adjusted cumulative returns ($Abs(Announcement\ Return)$). Panel B defines upcoming earnings news amount using the absolute value of changes in operating income scaled by total assets ($Abs(Chg\ Oper\ Inc)$). We define three periods within a quarter following Billings and Cedegren (2015). Green period (*GR*) is the two-week period (14 days) starting from the earnings announcement day. *TradingValueGR* is the total trading value of insider trades that take place in green period. Red period (*R*) starts one day after the fiscal quarter-end and ends one day before the next earnings announcement day. *TradingValueR* is the total trading value of insider trades that take place in red period. Yellow period (*Y*) is the window between the green and red trading window (i.e., starting from the 15th day after earnings announcement day to the fiscal quarter end). *TradingValueY* is the total trading value of insider trades that take place in yellow period. The sample consists of firm-quarter observations from 1998 to 2020. All variables are as defined in Appendix A. All continuous variables are winsorized at the 1st and 99th percentiles. t-statistics, in parentheses, are reported below the coefficient estimates. *, **, and *** represent significance at the 10%, 5%, and 1% levels, respectively. Standard errors are clustered at the firm level.

Panel A.

	<i>Abs(Announcement Return) Above Median</i>			<i>Abs(Announcement Return) Below Median</i>		
	<i>TradingValue</i>	<i>TradingValue</i>	<i>TradingValue</i>	<i>TradingValue</i>	<i>TradingValue</i>	<i>TradingValue</i>
	<i>GR</i>	<i>Y</i>	<i>R</i>	<i>GR</i>	<i>Y</i>	<i>R</i>
	(1)	(2)	(3)	(4)	(5)	(6)
Post	-0.277 (-0.998)	-0.689 (-1.424)	0.477** (2.438)	-0.414* (-1.854)	-0.110 (-0.254)	0.199 (1.125)
Size	-1.339*** (-5.015)	-3.253*** (-6.813)	-0.988*** (-5.344)	-1.285*** (-5.571)	-2.774*** (-5.272)	-0.510** (-2.298)
ROA	10.374*** (5.596)	9.497*** (2.827)	-0.321 (-0.227)	8.480*** (4.431)	12.912*** (3.479)	2.778 (1.391)
BM	-0.455* (-1.809)	-1.192** (-2.576)	-0.171 (-0.847)	-0.515** (-1.976)	-1.131** (-2.250)	-0.190 (-0.778)
Year-Qtr FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	45,952	45,952	45,952	45,698	45,698	45,698
Adj. R-squared	0.089	0.095	0.086	0.120	0.114	0.118

Panel B.

	<i>Abs(Chg Oper Inc) Above Median</i>			<i>Abs(Chg Oper Inc) Below Median</i>		
	<i>TradingValue</i>	<i>TradingValue</i>	<i>TradingValue</i>	<i>TradingValue</i>	<i>TradingValue</i>	<i>TradingValue</i>
	<i>GR</i>	<i>Y</i>	<i>R</i>	<i>GR</i>	<i>Y</i>	<i>R</i>
	(1)	(2)	(3)	(4)	(5)	(6)
Post	-0.337 (-1.190)	-0.593 (-1.151)	0.655*** (3.014)	-0.321 (-1.240)	-0.660 (-1.406)	-0.068 (-0.412)
Size	-1.319*** (-5.686)	-2.863*** (-6.331)	-0.765*** (-3.907)	-1.617*** (-5.185)	-3.418*** (-4.939)	-0.868*** (-3.948)
ROA	8.854*** (6.491)	9.836*** (3.664)	1.064 (0.848)	15.746*** (3.978)	14.481* (1.849)	-3.253 (-1.059)
BM	-0.784*** (-3.013)	-1.749*** (-3.483)	-0.261 (-1.034)	-0.233 (-0.837)	-0.739 (-1.449)	-0.073 (-0.332)
Year-Qtr FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	44,658	44,658	44,658	44,629	44,629	44,629
Adj. R-squared	0.090	0.092	0.085	0.119	0.140	0.149

Table 5: Good news vs. bad news and shifting of insider trades after SEC enforcement action announcements

This table documents the shifting of insider purchase and sales samples separately matching the type of upcoming news (i.e., good or bad news). In Panel A, we define good (bad) news as an increase (decrease) in operating income in quarter t relative to quarter $t-1$. In Panel B, we define good (bad) news as the highest (lowest) quintile of changes in operating income scaled by total assets (i.e., Chg_Oper_Inc). We define three periods within a quarter following Billings and Cedegren (2015). Green period (GR) is the two-week period (14 days) starting from the earnings announcement day. $TradingValueGR$ is the total trading value of insider trades that take place in green period. Red period (R) starts one day after the fiscal quarter-end and ends one day before the next earnings announcement day. $TradingValueR$ is the total trading value of insider trades that take place in red period. Yellow period (Y) is the window between the green and red trading window (i.e., starting from the 15th day after earnings announcement day to the fiscal quarter end). $TradingValueY$ is the total trading value of insider trades that take place in yellow period. The sample consists of firm-quarter observations from 1998 to 2020. All variables are as defined in Appendix A. All continuous variables are winsorized at the 1st and 99th percentiles. t-statistics, in parentheses, are reported below the coefficient estimates. *, **, and *** represent significance at the 10%, 5%, and 1% levels, respectively. Standard errors are clustered at the firm level.

Panel A.

	<i>Purchase Sample & Chg Oper Inc > 0</i>			<i>Sales Sample & Chg Oper Inc < 0</i>		
	<i>TradingValue</i>	<i>TradingValue</i>	<i>TradingValue</i>	<i>TradingValue</i>	<i>TradingValue</i>	<i>TradingValue</i>
	<i>GR</i>	<i>Y</i>	<i>R</i>	<i>GR</i>	<i>Y</i>	<i>R</i>
	(1)	(2)	(3)	(4)	(5)	(6)
Post	-0.065 (-1.413)	-0.128 (-1.630)	0.042* (1.690)	0.008 (0.038)	0.095 (0.291)	0.314*** (2.589)
Size	-0.281*** (-5.323)	-0.323*** (-3.800)	-0.102*** (-2.954)	-0.486*** (-2.756)	-1.724*** (-5.437)	-0.242** (-2.193)
ROA	-0.341 (-0.847)	-0.758 (-1.157)	-0.277 (-1.163)	7.023*** (4.979)	12.097*** (5.375)	2.324** (2.495)
BM	0.409*** (5.423)	0.587*** (5.333)	0.020 (0.505)	-1.229*** (-6.898)	-1.713*** (-5.559)	-0.259** (-2.288)
Year-Qtr FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	48,742	48,742	48,742	40,581	40,581	40,581
Adj. R-squared	0.102	0.106	0.091	0.119	0.118	0.124

Panel B.

	<i>Purchase Sample & Top Tercile Rank</i>			<i>Sales Sample & Bottom Tercile Rank</i>		
	<i>TradingValue</i>	<i>TradingValue</i>	<i>TradingValue</i>	<i>TradingValue</i>	<i>TradingValue</i>	<i>TradingValue</i>
	<i>GR</i>	<i>Y</i>	<i>R</i>	<i>GR</i>	<i>Y</i>	<i>R</i>
	(1)	(2)	(3)	(4)	(5)	(6)
Post	-0.038 (-0.574)	-0.072 (-0.690)	0.068* (1.859)	-0.137 (-0.565)	0.054 (0.139)	0.522*** (3.493)
Size	-0.281*** (-4.326)	-0.251** (-2.500)	-0.102** (-2.397)	-0.466** (-2.441)	-1.748*** (-4.924)	-0.284** (-2.361)
ROA	-0.274 (-0.628)	-0.664 (-0.957)	-0.305 (-1.189)	6.701*** (4.611)	12.054*** (5.051)	2.556*** (2.685)
BM	0.319*** (3.559)	0.419*** (3.226)	-0.031 (-0.597)	-1.347*** (-6.150)	-2.165*** (-5.866)	-0.376*** (-2.689)
Year-Qtr FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	29,760	29,760	29,760	29,701	29,701	29,701
Adj. R-squared	0.106	0.086	0.074	0.108	0.109	0.117

Table 6: SEC Budget constraints and shifting of insider trades after SEC enforcement action announcements

This table documents that the shifting of insider trades in peer firms after SEC enforcement action announcements on target firms varies when the SEC faces resource constraints. We measure SEC resource constraints as the dollar amount of SEC annual budgets divided by the total market capitalization of listed companies. Peer firms are firms that share the same 4-digit SIC industry classification in the same year as the target firms. We define three periods within a quarter following Billings and Cedegren (2015). Green period (*GR*) is the two-week period (14 days) starting from the earnings announcement day. *TradingValueGR* is the total trading value of insider trades that take place in green period. Red period (*R*) starts one day after the fiscal quarter-end and ends one day before the next earnings announcement day. *TradingValueR* is the total trading value of insider trades that take place in red period. Yellow period (*Y*) is the window between the green and red trading window (i.e., starting from the 15th day after earnings announcement day to the fiscal quarter-end). *TradingValueY* is the total trading value of insider trades that take place in yellow period. The sample consists of firm-quarter observations from 1998 to 2020. All variables are as defined in Appendix A. All continuous variables are winsorized at the 1st and 99th percentiles. t-statistics, in parentheses, are reported below the coefficient estimates. *, **, and *** represent significance at the 10%, 5%, and 1% levels, respectively. Standard errors are clustered at the firm level.

	<i>SEC More Constraint</i>			<i>SEC Less Constraint</i>		
	<i>TradingValue GR</i>	<i>TradingValue Y</i>	<i>TradingValue R</i>	<i>TradingValue GR</i>	<i>TradingValue Y</i>	<i>TradingValue R</i>
	(1)	(2)	(3)	(1)	(2)	(3)
Post	-0.159 (-0.633)	0.872* (1.736)	0.593*** (2.861)	-0.509** (-1.986)	-1.597*** (-3.425)	0.099 (0.541)
Size	-0.881*** (-2.850)	-3.105*** (-5.346)	-0.661*** (-2.884)	-1.558*** (-6.088)	-3.167*** (-5.840)	-0.949*** (-3.971)
ROA	9.238*** (4.842)	14.054*** (3.553)	0.526 (0.330)	8.641*** (4.963)	7.324** (2.406)	1.228 (0.762)
BM	-1.369*** (-3.833)	-2.212*** (-3.397)	-0.234 (-0.808)	-0.107 (-0.458)	-0.858** (-1.987)	-0.260 (-1.420)
Year-Qtr FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	44,900	44,900	44,900	47,521	47,521	47,521
Adj. R-squared	0.108	0.111	0.106	0.101	0.108	0.106

Table 7: Insider rank and shifting of insider trades after SEC enforcement action announcements

This table documents that the shifting of insider trades in peer firms after SEC enforcement action announcements on target firms differs based on the relative rank of insiders in their firms. We group insiders as high and low rank. High-rank insiders include board members and C-level executives. Low-rank insiders include general managers and managing directors. Appendix A provides a detailed explanation of high vs. low-rank insiders following Thompson Reuters insider hierarchy classification. We define three periods within a quarter following Billings and Cedegren (2015). Green period (*GR*) is the two-week period (14 days) starting from the earnings announcement day. *TradingValueGR* is the total trading value of insider trades that take place in green period. Red period (*R*) starts one day after the fiscal quarter-end and ends one day before the next earnings announcement day. *TradingValueR* is the total trading value of insider trades that take place in red period. Yellow period (*Y*) is the window between the green and red trading window (i.e., starting from the 15th day after earnings announcement day to the fiscal quarter-end). *TradingValueY* is the total trading value of insider trades that take place in yellow period. The sample consists of firm-quarter observations from 1998 to 2020. All variables are as defined in Appendix A. All continuous variables are winsorized at the 1st and 99th percentiles. t-statistics, in parentheses, are reported below the coefficient estimates. *, **, and *** represent significance at the 10%, 5%, and 1% levels, respectively. Standard errors are clustered at the firm level.

	<i>Low-Rank Employees</i>			<i>High-Rank Employees</i>		
	<i>TradingValue</i> <i>GR</i>	<i>TradingValue</i> <i>Y</i>	<i>TradingValue</i> <i>R</i>	<i>TradingValue</i> <i>GR</i>	<i>TradingValue</i> <i>Y</i>	<i>TradingValue</i> <i>R</i>
	(1)	(2)	(3)	(4)	(5)	(6)
Post	-0.134** (-2.006)	-0.198 (-1.249)	0.167** (2.468)	-0.156 (-1.611)	-0.249 (-1.555)	0.045 (0.917)
Size	-0.479*** (-6.832)	-1.248*** (-6.667)	-0.409*** (-5.767)	-0.447*** (-4.516)	-1.172*** (-6.564)	-0.112* (-1.671)
ROA	2.657*** (5.376)	3.087** (2.531)	-0.194 (-0.324)	4.957*** (7.790)	6.452*** (5.925)	1.469*** (4.429)
BM	-0.329*** (-4.898)	-0.466*** (-2.675)	-0.076 (-1.014)	-0.129 (-1.235)	-0.558*** (-3.584)	-0.114* (-1.884)
Year-Qtr FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	92,451	92,451	92,451	92,451	92,451	92,451
Adj. R-squared	0.083	0.083	0.086	0.107	0.121	0.133

Table 8: The likelihood of being the next target and shifting of insider trades after SEC enforcement action announcements

This table shows that the shifting of insider trades in peer firms after SEC enforcement action announcements on target firms differs in the likelihood of being the next target of an investigation. We use peer firm size to capture the likelihood of being a target and separate the sample into two: above- and below-median firm size within the industry (i.e., 4-digit SIC). We define three periods within a quarter following Billings and Cedegren (2015). Green period (*GR*) is the two-week period (14 days) starting from the earnings announcement day. *TradingValueGR* is the total trading value of insider trades that take place in green period. Red period (*R*) starts one day after the fiscal quarter-end and ends one day before the next earnings announcement day. *TradingValueR* is the total trading value of insider trades that take place in red period. Yellow period (*Y*) is the window between the green and red trading window (i.e., starting from the 15th day after earnings announcement day to the fiscal quarter end). *TradingValueY* is the total trading value of insider trades that take place in yellow period. The sample consists of firm-quarter observations from 1998 to 2020. All variables are as defined in Appendix A. All continuous variables are winsorized at the 1st and 99th percentiles. t-statistics, in parentheses, are reported below the coefficient estimates. *, **, and *** represent significance at the 10%, 5%, and 1% levels, respectively. Standard errors are clustered at the firm level.

	<i>Peer Firm Size Below Median</i>			<i>Peer Firm Size Above Median</i>		
	<i>TradingValue</i>	<i>TradingValue</i>	<i>TradingValue</i>	<i>TradingValue</i>	<i>TradingValue</i>	<i>TradingValue</i>
	<i>GR</i>	<i>Y</i>	<i>R</i>	<i>GR</i>	<i>Y</i>	<i>R</i>
	(1)	(2)	(3)	(4)	(5)	(6)
Post	-0.037 (-0.143)	0.548 (1.203)	0.697*** (3.264)	-0.601** (-2.445)	-1.299*** (-2.785)	-0.068 (-0.409)
Size	-0.999*** (-3.990)	-1.654*** (-3.236)	-0.762*** (-3.253)	-2.301*** (-6.528)	-5.478*** (-8.044)	-1.172*** (-5.210)
ROA	7.132*** (4.863)	9.372*** (3.782)	1.298 (1.034)	10.811*** (4.002)	4.605 (0.775)	-0.932 (-0.401)
BM	0.125 (0.552)	-0.607 (-1.485)	-0.014 (-0.069)	-1.529*** (-3.780)	-1.970*** (-2.792)	-0.279 (-1.029)
Year-Qtr FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	46,841	46,841	46,841	45,610	45,610	45,610
Adj. R-squared	0.076	0.077	0.088	0.132	0.146	0.135

Table 9: Isolate quarters with only EA-related events

This table documents the shifting of insider trades after excluding firm-quarters with other major events. We exclude firm-quarters with merger and acquisition, SEO, share repurchase, stock splits, or dividend declaration announcements. We define three periods within a quarter following Billings and Cedegren (2015). Green period (*GR*) is the two-week period (14 days) starting from the earnings announcement day. *TradingValueGR* is the total trading value of insider trades that take place in green period. Red period (*R*) starts one day after the fiscal quarter-end and ends one day before the next earnings announcement day. *TradingValueR* is the total trading value of insider trades that take place in red period. Yellow period (*Y*) is the window between the green and red trading window (i.e., starting from the 15th day after earnings announcement day to the fiscal quarter end). *TradingValueY* is the total trading value of insider trades that take place in yellow period. *TradingValueAll* is the total trading value of insider trades that take place across all three periods. The sample consists of firm-quarter observations from 1998 to 2020. All variables are as defined in Appendix A. All continuous variables are winsorized at the 1st and 99th percentiles. t-statistics, in parentheses, are reported below the coefficient estimates. *, **, and *** represent significance at the 10%, 5%, and 1% levels, respectively. Standard errors are clustered at the firm level.

	<i>TradingValueAll</i>	<i>TradingValueGR</i>	<i>TradingValueY</i>	<i>TradingValueR</i>
	(1)	(2)	(3)	(4)
Post	-1.009 (-1.129)	-0.479** (-2.462)	-0.498 (-1.407)	0.393*** (2.640)
Size	-9.455*** (-8.649)	-1.266*** (-6.274)	-2.742*** (-6.746)	-0.666*** (-4.081)
ROA	21.867*** (3.131)	9.005*** (7.120)	10.171*** (4.202)	0.743 (0.686)
BM	-1.033 (-0.986)	-0.381** (-1.995)	-1.089*** (-3.170)	-0.169 (-1.005)
Year-Qtr FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Obs.	73,946	73,946	73,946	73,946
Adj. R-squared	0.106	0.090	0.094	0.088

Table 10: Alternative Measure for Trading Activities

This table documents that insiders in peer firms of target firms disproportionately shift their trades in the days where the insider trades are least likely to be allowed under the company trading policy and the upcoming information is more certain. Peer firms are firms that share the same 4-digit SIC industry classification in the same year as the target firms. We define three periods within a quarter following Billings and Cedegren (2015). Green period (*GR*) is the two-week period (14 days) starting from the earnings announcement day. *TradingSharesGR* is the total number of shares traded that take place in green period. Red period (*R*) starts one day after the fiscal quarter-end and ends one day before the next earnings announcement day. *TradingSharesR* is the total number of shares traded in red period. Yellow period (*Y*) is the window between the green and red trading window (i.e., starting from the 15th day after earnings announcement day to the fiscal quarter end). *TradingValueY* is the total number of shares traded in yellow period. *TradingSharesAll* is the total number of shares trades that take place across all three periods. The sample consists of firm-quarter observations from 1998 to 2020. All variables are as defined in Appendix A. All continuous variables are winsorized at the 1st and 99th percentiles. t-statistics, in parentheses, are reported below the coefficient estimates. *, **, and *** represent significance at the 10%, 5%, and 1% levels, respectively. Standard errors are clustered at the firm level.

	<i>TadingSharesAll</i>	<i>TadingSharesGR</i>	<i>TadingSharesY</i>	<i>TadingSharesR</i>
	(1)	(2)	(3)	(4)
Post	-1.444* (-1.772)	-0.369** (-2.245)	-0.555* (-1.772)	0.307** (2.482)
Size	-8.593*** (-8.815)	-1.108*** (-6.263)	-2.477*** (-6.770)	-0.590*** (-4.217)
ROA	10.396 (1.551)	7.323*** (6.106)	7.085*** (3.013)	0.158 (0.155)
BM	-2.714*** (-2.833)	-0.654*** (-3.742)	-1.463*** (-4.557)	-0.310** (-1.995)
Year-Qtr FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Obs.	92,451	92,451	92,451	92,451
Adj. R-squared	0.114	0.097	0.099	0.096