The Spillover Effect of Financial Restatements on Peer Firms' Stock Repurchases *

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Abstract

This paper documents the spillover effect of firms' financial restatements on their peer firms' stock repurchases. In a difference-in-differences setting, I find a causal relationship where one firm's financial restatement increases the propensity of its peer firms in the same product market to repurchase shares by 12.9 percent. I present evidence attributing this spillover effect to peer firms of higher accounting quality separating from the pooling equilibrium with peer firms of lower accounting quality. As a result, the former group mitigates accounting-related litigation risk. Empirical results confirm that peer firms with stock repurchases have lower accruals, lower probability of restating their own financial statements, and fewer class action lawsuits against firm accounting practices than their counterparts without stock repurchases.

Keywords: peer effect, spillover effect, repurchase, signaling, restatement, accounting quality, litigation, insider trading
JEL: G14, G32, G35, M40

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1 Introduction

This paper shows that high quality firms use stock repurchases to separate themselves from low-quality peers after investors have received adverse industry-level signals. When a firm issues a financial restatement, it sends negative signal on the accounting quality of all the firms in its industry (Gleason, Jenkins, and Johnson (2008), and Durnev and Mangen (2009)). Upon receiving such an industry-level signal, since investors do not observe firms' true accounting quality, they pool together firms of above average accounting quality with those of below average accounting quality. As low accounting quality induces unwanted repercussions such as accounting-related class action lawsuits, firms with better accounting quality want to separate themselves from the ones with lower accounting quality. One way to accomplish this objective is via stock repurchases because it is a costly action (Oded (2005)). Consequently, peer firms on average will have higher propensity to repurchase shares than unaffected non-peer firms.

This mechanism describes a spillover effect in which financial restatements issued by public firms (restating or focal firms from here on) increase the propensity of peer firms (e.g., firms in the same product market as the restating firms) to repurchase shares. The key underlying assumption is that investors cannot sufficiently recognize peer firms' true accounting quality by their accounting data alone. The accounting literature has shown that accounting quality is an obscure concept where no definitive variables can directly and saliently represent firms' accounting quality (i.e., Gleason, Jenkins, and Johnson (2008)). Instead, academic scholars construct accounting quality measures such as earnings management and earnings smoothness (e.g., Lang, Raedy, and Wilson (2006)), the level of accruals (e.g., Dechow and Dichev (2002)), timeliness and conservativeness of accounting (e.g., Lang, Raedy, and Yetman (2003)) based on reported accounting data. If it is difficult for academics

to measure firm accounting quality, it should present similar challenges for investors. This challenge in observing accounting quality provides incentives for peer firms with better accounting quality to use stock repurchases as a mechanism to reveal their superior accounting practices after being affected by focal firms' financial restatements.

To provide a credible signal, firms' stock repurchases must be costly such that those with lower accounting quality cannot simply mimic. As open market stock repurchase announcements are not a commitment, any firm can announce stock repurchases without actually paying for them. Conversely, actual stock repurchases have higher credibility and induce greater costs for the participating firms because they need to devote monetary resources to do so. Hence, the spillover effect of financial restatements on peer firms' stock repurchases analyzed in this paper pertains only to firms' actual stock repurchases.

Peer firms that repurchase shares are the ones with above average accounting quality. Thus, conditional on the stock repurchases, their superior accounting quality should be reflected in the corresponding measures. One common measure for firm accounting quality is the quality of accruals (e.g., Dechow and Dichev (2002), and Francis, LaFond, Olsson, and Schipper (2005)). Peer firms that repurchase shares should have better quality of accruals than those that do not repurchase shares. Similarly, financial restatements directly reflect the accounting quality of a firm. In the peer effect setting, peer firms with stock repurchases should have lower likelihood of restating their own financials than those without stock repurchases.

Furthermore, an important incentive for peer firms with better accounting quality to reveal their robust accounting practices is to avoid the unwanted repercussions such as accounting-related litigation risks associated with having lower accounting quality. Prior work like Hanley and Hoberg (2012) has also documented that firms actively try to mitigate

their litigation risks. If stock repurchases can separate peer firms with better accounting quality from the pooling equilibrium, within peer firms, the ones that repurchase shares should have lower accounting-related litigation risks than those that do not repurchase shares.

I apply a difference-in-differences approach to identify the peer (spillover) effect of financial restatements on peer firms' stock repurchases. I define firms that release financial restatements as the focal or restating firms. These financial restatements are the triggering events for the treatment effect on peer firms' stock repurchases. Peer firms refer to firms in the same product market as the restating firms because sharing a product market captures more operating similarity between firms than alternative industry measures such as the SIC code (Hoberg and Philips (2010), (2016)). All the other firms not in the same product market as the focal firms are the non-peer firms. I extract data on actual repurchases for all firms in the Compustat/CRSP Merged Database from 2003 to 2020 via their 10-K and 10-Q filings on the SEC EDGAR database (Dittmar and Field (2015)).

To evaluate the association between firm accounting quality and stock repurchases, I compare peer firms' ex post accounting quality conditional on the stock repurchase action. I use the same measure of accruals quality developed by Francis, LaFond, Olsson, and Schipper (2005) as a proxy for firm accounting quality. I also investigate peer firms' likelihood in restating their own financial statements conditional on their actual stock repurchases. Finally, to establish the relationship between peer firms' stock repurchases and their strategy in mitigating accounting-related litigation risk, I obtain all class action lawsuits filed against the accounting practices of U.S. public firms from the Stanford Law School's *Securities Class Action Clearinghouse* (Hanley and Hoberg (2012)).

With this data, I identify the spillover effect of financial restatements on peer firms' stock repurchases. Peer firms have a higher propensity to repurchase shares and will repurchase

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more shares (and in more dollars) than non-peer firms after they are affected by focal firms' financial restatements. Peer firms increase their propensity to repurchase shares by 12.9% from the unconditional mean in the post-focal firms' financial restatement period. The economic significance increases to 17% in the intensive margin. By decomposing the reasons cited for the financial restatements, those issued for aggressive accounting drive this spillover effect. The spillover effect originated from financial restatements ascribed to aggressive accounting dominates over that from the restatements attributed to other reasons such as fraud or clerical errors. Conditional on being a peer firm, announcement returns around the release of the focal firm's financial restatement do not drive the results. Thus, market timing incentives do not appear to contribute to the spillover effect (Baker and Wurgler (2002), and Dittmar and Field (2015)).

Next, I test whether higher accounting quality peer firms repurchase shares to separate themselves from the pooling equilibrium with lower accounting quality peer firms as a mechanism to mitigate accounting-related litigation risk. Focusing on the quality of accruals, I find results consistent with this hypothesis. Peer firms with stock repurchases have higher accruals (earnings) quality than peer firms without stock repurchases. The former are also less likely (33% decrease from the unconditional mean) to restate their own financials than the latter. Importantly, peer firms who repurchase shares have lower accounting-related litigation risk than those who do not repurchase shares. The economic significance is large such that peer firms with stock repurchases have 89% lower likelihood in receiving accounting-related litigation in the next 6 months than their counterparts. Collectively, these results support that the spillover effect of focal firms' financial restatements on peer firms' subsequent stock repurchases is due to peer firms with greater accounting quality trying to separate from those with lower accounting quality. As a result, repurchasing peer firms

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reduce accounting-related litigation risk.

Finally, I conduct an additional set of tests to study the relation between peer firms' insider trading and the spillover effect. Existing literature shows that insiders trade in line with firms' stock repurchases (Ben-Rephael, Oded, and Wohl (2014)). Thus, if insiders of the higher accounting quality peer firms know their firms will repurchase shares due to the spillover effect, they know that their firms' stock prices will rise upon the stock repurchases. Naturally, insiders will want to hold more shares before the repurchases. However, as the spillover effect only exists for two quarters (i.e., 6 months), buying more shares within this short window before the firm's stock repurchase poses high legal risks for insiders. Conversely, canceling pre-registered sell orders (i.e., holding on to the shares they have) is perfectly legal for insiders. The triple differences regression results support this reasoning. If a peer firm reacts to the spillover effect (it repurchases shares within two quarters after exposure to a focal firm's financial restatement), its insiders will have more net buy orders (44% greater from the unconditional mean) in the current period. More importantly, the greater net buys are not driven by insiders purchasing more shares but by insiders holding onto the shares they already have. Insiders significantly reduce their sell orders, with a magnitude of 9.4% fewer shares sold from the unconditional mean.

In summary, I find, for the first time in the literature, the spillover effect of financial restatements on peer firms' stock repurchases. I also provide evidence attributing this spillover effect to peer firms of greater accounting quality using stock repurchases to separate from those of lower accounting quality. Consequently, the former mitigate accounting-related litigation risks. The rest of the paper is organized as follows: Section 2 describes the related literature and contribution. Section 3 provides the theory and hypotheses development. Section 4 details the data and summary statistics. Section 5 presents the identification strategy

and the main results. Section 6 delivers the regression results regarding the accounting quality and accounting-related litigation risk. Section 7 provides the additional tests on insider trading and Section 8 concludes.

2   Relation to the Existing Literature and Contribution

This paper is related to several strands of literature. The first strand of related literature focuses on financial restatements. The accounting literature has established that restatements (e.g., financial restatements, accounting restatements, and cash-flow restatements etc.) have negative implications on the restating firm's accounting quality (e.g., Kravet and Shevlin (2010), Srinivasan, Wahid, and Yu (2015)). Other papers like Gleason, Jenkins, and Johnson (2008) and Durnev and Mangen (2009) find the contagion effect of one firm's financial restatement on other firms' stock prices, real investments, and their accounting quality. This paper's contribution rests on finding the spillover effect of focal firms' financial restatements on peer firms' subsequent stock repurchases, which has not been explored in the literature. I also contribute to the restatement literature with novel findings that this financial restatement-induced spillover effect on peer firms' stock repurchases is associated with lower accounting accruals, lower likelihood of subsequent self-restatement, lower litigation risk, and fewer insider sells among repurchasing peer firms, all of which have not been documented in the literature in a peer effect setting.

The second strand of literature related to this study is on open market repurchase programs, especially in terms of firms' actual repurchases. This literature has argued that firms repurchase shares to adjust undervaluation (e.g., Vermaelen (1981), Baker, Powell, and Veit (2003), and Babenko, Tserlukevich, and Vedrashko (2012)), signal promising firm

prospects (e.g., Grullon and Michaely (2004), and Chemmanur, Li, Xie, and Zhu (2016)), fund employee stock options (Kahle (2002)), reduce disagreement between firm insiders and outsiders (Huang and Thakor (2013), and Chemmanur, Nandy, and Wu (2021)), for market timing (Baker and Wurgler (2002), and Dittmar and Field (2015)), or to distribute cash in a flexible and efficient manner (e.g., Jagannathan, Stephens, and Weisbach (2000), and Brav, Graham, Harvey, and Michaely (2005)). This paper distinguishes from the existing literature in that the spillover effect on stock repurchases is for peer firms with greater accounting quality to separate from those with lower accounting quality as a mechanism to mitigate accounting-related litigation risk. This is the first paper in the literature that documents the relationship between stock repurchases and accounting-related litigation.

This paper also stands out from the market timing literature, which argues that firms conduct stock repurchases when their shares are cheaper than other times (e.g., Baker and Wurgler (2002), and Dittmar and Field (2015)). These papers find that when firms repurchase shares to time the market, their stock returns before the repurchases will be lower than the returns surrounding the repurchases. On the contrary, I do not find such patterns. I also do not find evidence suggesting peer firms' announcement returns around the dates of focal firms' financial restatements drive their stock repurchases under the spillover effect.

Another related paper is Badertscher, Hribar, and Jenkins (2011), who find that prior stock repurchases alleviate the negative consequences of a later restatement. However, my paper is different from theirs in that I study *peer firms'* subsequent stock repurchases *after* focal firms' financial restatements. Thus, I focus on the spillover effect of focal firms' financial restatements on peer firms' stock repurchases, not the repurchases of the restating firms.

This article also adds to the study of peer effects of adverse accounting events. Previous papers have looked into the peer effect of auditing quality (Francis and Michas (2013)),

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earnings management under boards' common ownership (Chiu, Teoh, and Tian (2013)), and the peer effect of financial reporting frauds on investments (Beatty, Liao, and Yu (2013)). Notwithstanding, none of these papers investigate the peer effect with respect to firms' stock repurchases. Further, I find supporting evidence that attributes this peer effect to higher accounting quality peer firms trying to separate from the pooling equilibrium with the lower accounting quality peers, as reflected in numerous measures of accounting quality.

In sum, this paper contributes to the literature in three aspects. First, I establish a causal relationship between focal firms' financial restatements and their peer firms' subsequent stock repurchases, i.e, the spillover effect of focal firms' financial restatements on peer firms' stock repurchases. This is the first paper that documents such a spillover effect and studies the intersection of financial restatements and peer firms' stock repurchases. Second, I add onto the literature studying the signaling power of open market repurchase programs. Importantly, in a difference-in-differences setting, I present evidence that the spillover effect on peer firms' stock repurchases is ascribed to the higher accounting quality peer firms trying to separate themselves from a pooling equilibrium with the lower accounting quality peer firms. I also present evidence distinguishing this spillover effect from the market timing story. More importantly, peer firms with better accounting quality conduct stock repurchases to mitigate litigation risks against accounting practices. Hence, this paper is the first that connects the spillover effect of financial restatements on peer firms' stock repurchases with accounting-related litigation. Third, the finding of greater insider net buys before firms' stock repurchases being driven by insiders holding onto the shares they already have is also novel to the literature.

3 Theory and Hypothesis Development

The accounting literature documents that financial restatements have detrimental consequences for the restating firms (e.g., Palmrose, Richardson, and Scholz (2004), Desai, Hogan, and Wilkins (2006), and Kravet and Shevlin (2010)). A few additional papers look into the negative externalities of financial restatements on other firms in the same industry as the restating firms (e.g., Gleason, Jenkins, and Johnson (2008), and Durnev and Mangen (2009)). Thus, when one firm issues a financial restatement, it not only impacts itself but also its peers operating in the same market.

Importantly, financial restatements directly reflect firms' accounting quality (e.g., Gleason, Jenkins, and Hribar (2008), Badertscher, Hribar, and Jenkins (2011), Srinivasan, Wahid, and Yu (2015)). Regardless of the information content of a restatement, its occurrence represents questionable accounting quality.[1] In turn, when investors in the equity market observe a firm issuing a financial restatement, they revise the expected accounting quality of peer firms operating in the same product market since those firms likely adopt similar accounting practices. The investors infer that peer firms in the same product market have lower average accounting quality than firms not in the same product market.

Investors in the equity market do not observe the true accounting quality of each peer firm. Hence, they pool the higher accounting quality peer firms (the ones with above average accounting quality) with lower accounting quality peers (the ones with below average accounting quality) together. This creates a pooling equilibrium among the peer firms after a

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[1]Positive or negative adjustments on the restated items refer to the information content of the financial restatements. Similarly, the announcement returns on the restating firms when they release the financial restatements also represent information content (Durnev and Mange (2009)). Accounting quality, however, does not solely rely on the information content. If a firm has good accounting quality, it should not have needed to restate at all (even if the restatement embeds upward revision on the restated item). Good accounting practices should truthfully and timely reflect a firm's accounting information without any restatement.

focal firm's financial restatement. As lower accounting quality has undesirable repercussions such as receiving class action lawsuits against a firm's accounting standards, the pooling equilibrium increases the likelihood of peer firms being targeted by investors, regulators, and watchdog groups. Given that peer firms know their own true accounting quality, those with greater accounting quality would want to separate themselves from the rest. One way to accomplish this objective is through open market stock repurchases, which is a costly action (Oded (2005)). In other words, higher accounting quality peer firms will likely repurchase shares to reveal their accounting quality to their investors and separate from lower accounting quality peer firms upon exposure to focal firms' financial restatements. In the pooling equilibrium, hence, peer firms jointly will have a greater propensity to repurchase shares than non-peer firms after being affected by focal firms' financial restatements. This describes a spillover effect from focal firms' financial restatements on peer firms' subsequent stock repurchases, generating my first hypothesis:

H1: *Focal firms' financial restatements will increase the propensity of subsequent stock repurchases among their peer firms.*

If focal firms' financial restatements motivate investors in the equity market to question the accounting quality of peer firms, the financial restatements occurred due to aggressive accounting should be more important than those occurred for other reasons that are not directly related to one's accounting practices. When a focal firm issues a financial restatement due to aggressive accounting, it is even more obvious for the investors to question the accounting quality of the peer firms, creating the pooling equilibrium mentioned above. Thus, peer firms with greater accounting quality will be more likely to repurchase shares to signal their accounting superiority and separate from those with lower accounting quality, driving

the spillover effect. Formally, I hypothesize that:

H2: *Focal firms' financial restatements occurred because of aggressive accounting drive the spillover effect on peer firms' subsequent propensity to repurchase shares.*

When the higher accounting quality peer firms repurchase shares to reveal their superior accounting quality to their investors, they separate from the pooling equilibrium with the low accounting quality peer firms. This should transpire in relevant measures of accounting quality. One common proxy for accounting quality is a firm's accruals quality where lower accruals correspond to higher accounting quality (e.g, Dechow and Dichev (2002), and Francis, LaFond, Olsson, and Schipper (2005)). Thus, peer firms' accruals quality should be higher for those that repurchase shares than for those that do not repurchase shares. This intuition leads to my next hypothesis:

H3: *Peer firms with stock repurchases have higher accruals quality than the peer firms without stock repurchases.*

Given that financial restatements directly reflect firms' accounting quality, it is reasonable to assume that higher accounting quality firms are less likely to restate their own financial reports. Applying to the peer effect setting, higher accounting quality peer firms should have lower likelihood of restating their own financials in the future and vice versa. Stock repurchases should then reflect peer firms' subsequent likelihood of restating their own financial reports. Hence, I present the following hypothesis:

H4: *Peer firms with stock repurchases have lower likelihood in restating their own financial statements subsequently than the peer firms without stock repurchases.*

Peer firms with better accounting quality want to convey that information to market

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participants (e.g., equity investors, regulators, and watchdog groups) to avoid litigation against their accounting practices.[2] Thus, the mechanism of higher accounting quality peer firms separating from the pooling equilibrium with lower accounting quality peers via stock repurchases should be related to their subsequent litigation risks. Hanley and Hoberg (2012) find that IPO firms use robust disclosure to mitigate litigation risks. Arguably, higher accounting quality peer firms would want to use stock repurchases to inform their good accounting standards and thus reduce accounting-related litigation risks. This implies that after exposure to focal firms' financial restatements, peer firms with stock repurchases, i.e., the higher accounting quality peers, are less likely to be sued for accounting malpractices and thus incur lower litigation risks than the peer firms without stock repurchases. This intuition formulates my hypothesis:

H5: *Peer firms with stock repurchases have lower accounting-related litigation risk than the peer firms without stock repurchases.*

In addition, Ben-Rephael, Oded, and Wohl (2014) find a positive correlation between insider net buys and firms' stock repurchases. In this paper, their finding implies that peer firms' insiders are likely to have more net buys before their firms' stock repurchases. One caveat, however, is that peer firms do not foresee the shock of focal firms' financial restatements. They need to act swiftly to separate from the peer firms with lower accounting quality through stock repurchases upon the shock. Meanwhile, securities law requires insiders to pre-register with the SEC under Rule 10b-5 for any transactions on their own firms.[3] And

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[2]Other papers like Bardos, Golec, and Harding (2013), and Hogan, Lambert, and Schmidt (2013) have also documented the relationship between firms' restatements and accounting litigation. However, none of these papers study the litigation on other firms after one firm's restatement.

[3]U.S. Securities and Exchange Commission, 2000. Final Rule 10b5-1. Selective Disclosure and Insider Trading. https://www.sec.gov/rules/final/33-7881.htm.

they can only trade legally if they do not possess material information when they register the trades. Thus, urgently filing buy-orders shortly before peer firms' corporate actions of stock repurchases imposes significant risks on insiders for possessing material information.[4] In contrast, canceling pre-registered sell orders does not induce such risks because cancellations of 10b5-1 plans are always allowed. As a result, once a higher accounting quality peer firm's insiders observe the pooling equilibrium and decide to direct the firm to repurchase shares, they will reduce selling their shares before the repurchase action. This intuition leads to the final hypothesis:

H6: *After experiencing the shock of focal firms' financial restatements, insiders of peer firms have greater net buys if their firms repurchase shares in the open market subsequently. The greater net buys will originate from insiders reducing their sell orders but not increasing their purchase orders.*

4   Data and Summary Statistics

4.1   Data Construction

4.1.1   Financial Restatements and Peer Firms

The financial restatement data comes from the Audit Analytics Database for the period between 2003 and 2020, yielding a set of 16,230 financial restatements. Audit Analytics use the CIK code to identify firms. I merge the firms that issue financial restatements with firms in the CRSP/COMPUSTAT Merged Database by firm CIK and only retain those that can be identified by GVKEY in the CRSP/COMPUSTAT Merged Database. This step narrows

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[4]The material information, under this circumstance, is that the insiders know they will direct their firms to repurchase shares in the near future.

to 7,038 financial restatements whose restating firms belong to the CRSP/COMPUSTAT Merged Database. Panel A of Table 1 presents the summary statistics for the characteristics of all restatements.

Upon extracting the financial restatements and the firms issuing them, I aggregate the data at the firm-quarter level to construct a panel for the universe of all firms in the CRSP/COMPUSTAT Merged Database. I call firms releasing financial restatements as *restating* or *focal firms*, which will be used interchangeably. Firms in the same product market as the restating firm in the year of the restatement are referred to as *peer firms*. Firms not in the same product market as the restating firm are the *non-peer firms*. The definition of product market and firm pairs in each product market follow Hoberg and Philips (2010, 2016). I use product market to identify peer firms because traditional industry classifications like SIC, NAICS, and GIC codes do not necessarily capture firms that operate in the same space (Hoberg and Philips (2010, 2016)) and they incur more noise. Table 1 Panel B presents the summary statistics on the number of peer firms for a given restatement.

I aggregate the peer firms at the firm-quarter level such that even if a peer firm is affected by multiple financial restatement in a given quarter, it only appears once for that quarter as a peer firm. I create an indicator variable *Peer 2 Quarters* that equals one for a firm in the same product market as a restating firm in the quarter of the restating firm's financial restatement and stays as one for another quarter (i.e., a total of two quarters), and zero otherwise.[5], [6] To control for the impact of a financial restatement itself on firms' subsequent stock repurchases, I create a similar indicator variable *Restate 2 Quarters* that

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[5]I also use other windows for the peer indicator. For instance, *Peer 1 Quarter* equals one for the same definition of peer firms but only in the quarter when the focal firm's financial restatement occurs. This methodology applies to all windows from 1, 2, to 3 and 4 quarters. The results are consistent.

[6]One can think of *Peer 2 Quarters* as the interaction term between a treatment dummy and a post dummy, where treatment is a firm in the same product market as a restating firm and post dummy is one for the two periods after restating firm's release of its financial restatement.

equals one for a focal firm that issues a financial restatement in a given quarter and stays as one for another quarter (i.e., a total of two quarters), but zero otherwise.[7] Hence, the key independent variable of interest throughout the paper focuses on *Peer 2 Quarters*, which compares between peer firms and non-peer firms in the periods after focal firms' financial restatements with the periods before – i.e., a difference-in-differences setting.[8]

An important feature of *Peer 2 Quarters* deserves more explanation: it can overlap in multiple periods. Specifically, *Peer 2 Quarters* can be one for more than two consecutive quarters if a given firm is a peer firm to a series of financial restatements issued by different restating firms in consecutive quarters. Consider a setting with four firms – firm A, B, C, and D for eight quarters from t to $t+7$. Firm B issues a financial restatement at time $t+1$, firm C does so at time $t+2$, and firm D restates at $t+4$. Firm A is a peer firm to all the three financial restatements. Thus, *Peer 2 Quarters* is zero for firm A at time t but turns on to be one at $t+1$ and should continue till $t+2$. However, as C issues a financial restatement at $t+2$, firm A's *Peer 2 Quarters* stays on from $t+2$ to $t+3$. At $t+4$, firm D restates, making firm A's *Peer 2 Quarters* continue as one in $t+4$ and $t+5$ before it turns back to zero at $t+6$. In other words, *Peer 2 Quarters* starts with zero at t, but is one from $t+1$ to $t+5$, and turns back to zero for $t+6$ and $t+7$. This overlapping feature extends to both indicator variables on peer firms and restating firms.

4.1.2 Firm-Quarter Panel Sample

All the indicator variables described in Section 4.1.1 are embedded in the firm-quarter panel structure. Utilizing this panel sample for all firms in the CRSP/COMPUSTAT Merged

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[7]This is the same methodology for *Peer 2 Quarters*, but only applies to firms with financial restatements. Importantly, this restating firm indicator also extends to other windows as described in the previous footnote.

[8]Section 5.2 and Table 4 will explain the choice of two quarters as the treatment window.

Database with their associated indicator variables on financial restatements and peer firms, I match the firm-quarter data with annual control variables to the previous fiscal year-end. Further, I merge the sample with next quarter's repurchase data. The repurchase data refers to firms' actual repurchase amounts, which I collect from their 10-K and 10-Q filings. In 2003, the SEC updated their Safe Harbor rule (Rule 10B-18) regarding the legal procedures for public firms to trade their own shares in the open market. The update mandates all publicly listed firms to disclose their open market repurchase activities in their quarterly (10-Q) and annual filings (10-K) at the monthly level. This provides the most accurate source of information regarding firms' actual stock repurchases in the open market (Dittmar and Field (2015)). Hence, I use Python to scrape this information from all the 10-K and 10-Q filings from 2003 to 2020 in the SEC EDGAR database, and aggregate them at the firm-quarter level. This constitutes the full sample of 412,582 firm-quarter observations with stock repurchases leading by one quarter.

I extract insider trading information from Thomson/Refinitiv Insiders Database and aggregate it at the firm-quarter level. Net number of shares transacted by all insiders of a firm in a given quarter is the total number of shares purchased by the insiders minus the total number of shares sold by the insiders in the same quarter. Stanford Law School's *Securities Class Action Clearinghouse* provides the data on class action lawsuits against firms' accounting practices (Hanley and Hoberg (2012)). The accounting lawsuits pertain to Rule 10b-5, Section 11, and Section 12(a), as classified by the database.[9] I exclude privately held firms and firms with missing ticker symbols (the firm identifier in the database). The litigation data is also aggregated at the firm-quarter level and together with the insider data, are merged with the full sample contemporaneously.

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[9]For details, please see https://securities.stanford.edu/research-reports/1996-2020/Accounting-Class-Action-Filings-and-Settlements-2020-Review.pdf

4.2 Summary Statistics

Table 1 Panel A presents the characteristics of different financial restatements. There is a total of 7,038 financial restatements. Among them, 6,714 (95.40%) occur due to aggressive accounting, corroborating that restatements directly reflect firms' accounting quality. 126 (1.79%) of them have fraud, while 299 (4.25%) of them occur because of clerical errors. 411 (5.84%) financial restatements involve investigations from the SEC, and 2,410 of them (34.24%) have the company's board of directors involved in the process.[10] And 5,663 (80.46%) of the restatements have negative revisions on the restated item in the original financial reports.[11] I do not differentiate between restatements with positive or negative revisions nor between restatement with positive and negative announcement returns because these features represent the information content of the financial restatements (e.g., Durven and Mangen (2009)), which is not of my interest. This study attempts to drill down on firms' accounting quality, and regardless of the information content of a financial restatement, its occurrence represents lower accounting quality, especially for those that cite aggressive accounting as the reason for restating. Table 1 Panel B presents the summary statistics on the number of peer firms corresponding to each restatement. On average, there are 167 peer firms for a given financial restatement. The median value is 118, while the maximum is 773.

Table 2 displays the firm-level summary statistics for the full sample. It is a panel of 412,582 firm-quarter observations with 12,385 different firms from 2003 to 2020. Panel A

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[10]Board of directors involvement include board issuing press releases, board certifying the restated financial statements, and board participating in the SEC investigation if there is any, among many other forms of participation.

[11]Importantly, these characteristics are *not* mutually exclusive such that one focal firm's financial restatement can have multiple characteristics simultaneously. An illustrative example would be the financial restatement issued by American International Group (Ticker: AIG) in the second quarter of 2005. The restatement resulted in a negative revision of its earnings and was due to aggressive accounting which was also fraudulent. It incurred investigation by the SEC and involved the board of directors during the investigation and restating process. The majority of the financial restatements have at least two characteristics.

describes the variables measured at the quarterly frequency, whereas Panel B describes the annual control variables matched to the previous fiscal year-end for a given firm-quarter.

An average firm in the sample has a propensity of 9.76% to repurchase shares in a given quarter with a standard deviation of 29.68%. An average firm buys back 69.4 thousand shares in a given quarter in the sample. In terms of the dollar amount, the average quarterly dollar amount spent on stock repurchases by a firm in the sample is about $2.5 million dollars with a maximum of $125 million. As the number of shares and dollar amount repurchased can be driven by firm size, I scale them by total number of shares outstanding and market capitalization in the previous fiscal year-end, respectively. The corresponding variables are *Scaled Shares Repurchased* and *Scaled Dollar Repurchased*, with unconditional means at 0.0008 and 0.0007. The unconditional mean for a firm's accruals to be higher than its product market median in a given quarter is 50.4%. An average firm in the sample has an unconditional probability of 1.42% to issue a financial restatement. The unconditional probability for an average firm to receive an accounting-related class action lawsuit is 0.45%. Both of them are rare events.

5 Main Results

5.1 Identification of the Spillover Effect

Financial restatements directly reflect firms' accounting quality (e.g., Srinivasan, Wahid, and Yu (2015)) and impose negative externalities on non-restating firms in the same industry (e.g., Gleason, Jenkins, and Johnson (2008), and Durnev and Mangen (2009)). Observing a focal firm's financial restatement, investors in the equity market adjust their opinions on the accounting quality of not only the restating firm but also other firms in the same

product market (i.e., the peer firms). The focus is on peer firms because after a focal firm's financial restatement, the equity investors assume other firms in the same product market likely adopt similar accounting practices. Thus, without observing their true accounting quality, they pool higher accounting quality peer firms with lower accounting quality peer firms in a pooling equilibrium. It benefits the higher accounting quality peer firms if they can separate themselves from the pooling equilibrium and they can do so by signaling their accounting quality to the market via stock repurchases (H1). To test this hypothesis, I run the following difference-in-differences regression model:

$$Firm\ Repurchase_{i,t+1} = \beta_1 Peer2Quarters_{i,t} + \beta_2 Restate2Quarters_{i,t}$$
$$+ \beta_3 X_{i,t} + \gamma_i + \delta_t + \epsilon_{i,t+1}$$

(1)

where $Peer2Quarters_{i,t}$ refers to the variable *Peer 2 Quarters* described in Section 4.1.1 for firm i in year-quarter (time) t. Similarly, $Restate2Quarters_{i,t}$ corresponds to *Restate 2 Quarters* described in Section 4.1.1. The dependent variable $Firm\ Repurchase_{i,t+1}$ takes three forms. When $Firm\ Repurchase_{i,t+1}$ is *Repurchase*, it is an indicator that equals one if firm i repurchases shares in the open market at time $t+1$ and zero otherwise. The other two forms of $Firm\ Repurchase_{i,t+1}$ are *Scaled Shares Repurchased* and *Scaled Dollar Repurchased* defined in Section 4.2. They measure the size of firm i's stock repurchases in the open market at time $t+1$. The coefficient of interest is β_1, which estimates the treatment effect of the spillover on peer firms' stock repurchases after exposure to focal firms' financial restatements relative to non-peer firms in that same period. β_2 is a control variable on the restatements. $X_{i,t}$ is a vector of control variables at the previous fiscal year-end to time t. I include firm fixed effect (γ_i) and time fixed effect (δ_t), which is at the year-quarter level for all regressions. I also double cluster standard errors by firm and year.

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The regression results for Equation (1) are reported in Table 3. Column (1) and (2) use the *Repurchase* indicator as the dependent variable. They show the treatment effect regarding peer firms' propensity to repurchase, i.e., the extensive margin. The positive and significant coefficients on *Peer 2 Quarters* suggest that peer firms have higher propensity to repurchase shares in the open market after being affected by focal firms' financial restatements than non-peer firms, consistent with H1. Importantly, peer firms subject to the spillover effect of a focal firm's financial restatement, increase their propensity to repurchase shares in the subsequent quarter by 12.9% from the unconditional mean.[12] Thus, there are both statistical and economic significance on the spillover effect of focal firms' financial restatements on peer firms' subsequent stock repurchases.[13]

The coefficients on the control variable related to the financial restatements are also worth noting. *Restate 2 Quarters* have negative but mostly insignificant coefficients in all columns, implying that if a firm issues a financial restatement, its propensity to repurchase shares in the post-restatement period does not differ from all the other firms in the sample. Seemingly, this result presents opposing evidence to Charkravarthy, deHaan, and Rajgopal (2014). However, their paper finds a positive correlation between restatement and post-restatement *announcement* of open market repurchase programs of the same firm, whereas I focus on the actual stock repurchases in the post-restatement periods. Thus, this finding where restating firms' financial restatements are unrelated to their subsequent repurchases is interesting in itself. It makes sense because financial restatements are generally detrimental to the restating firms. Thus, these restating firms will channel most of their resources

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[12] Taking the coefficient on *Peer 2 Quarters* in column (2) with the full set of control variables, the increase from the unconditional mean is $\frac{0.01256}{0.0976} = 0.129$, or 12.9%.

[13] In unreported results, I change the definition of peer firms from sharing the same product market to sharing the same two-digit SIC, three-digit SIC, four-digit NAICS, and eight-digit GICS industries (Gleason, Jenkins, and Johnson (2008)). The results on the spillover effect persist.

to recuperate from the damage associated with the financial restatements (Desai, Hogan, and Wilkins (2006)), and repurchasing shares is not their priority. Further, its presence should bias against the coefficient on β_1. Hence, the fact that the spillover effect of financial restatements on peer firms' stock repurchases still stands among these control variables provides compelling evidence of its robustness.

Upon establishing the spillover effect of focal firms' financial restatements on peer firms' propensity to repurchase shares subsequently, I investigate whether this spillover effect extends to the size of peer firms' repurchases, i.e., the intensive margin. I proxy for the size of share repurchases by two variables *Scaled Shares Repurchased* and *Scaled Dollar Repurchased*, which are the dependent variables in columns (3) and (4), and columns (5) and (6) of Table 3, respectively.[14] The positive and significant coefficients on *Peer 2 Quarters* from column (3) through column (6) suggest that the spillover effect applies to how much peer firms repurchase as well. In other words, peer firms affected by focal firms' financial restatements will repurchase more shares both in terms of the number of shares repurchased and the dollar amount spent on buying these shares in the post-restatement period, as compared to non-peer firms. The economic significance is in the magnitude of 17.5% and 17.1% higher from the unconditional means for *Scaled Shares Repurchased* and *Scaled Dollar Repurchased*, respectively.[15] The economic significance on the intensive margin of the spillover effect is slightly higher than that on the extensive margin.[16]

Next, I conduct tests to rule out the market timing story (Baker and Wurgler (2002)). First, in the main regression of Equation (1) and the results in Table (3), I control for

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[14]Please see Section 4.2 for the definition of *Scaled Shares Repurchased* and *Scaled Dollar Repurchased*.

[15]For *Scaled Shares Repurchased*, the increase from its unconditional mean is $\frac{0.00014}{0.0008} = 0.175$ or 17.5%. For *Scaled Dollar Repurchased*, the increase from its unconditional mean is $\frac{0.00012}{0.0007} = 0.171$ or 17.1%.

[16]Converting to the raw number of shares (dollar amount), a peer firm will repurchase additional $0.00014 \times 130.90 = 0.0183$ $(0.00012 \times 4,179.21 = 0.50)$, i.e., 18,300 shares ($500,000 dollars) in the subsequent quarter.

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Previous 6 Months' Return (Dittmar and Field (2015)). It has statistically insignificant coefficients in columns (2) and (4), and significantly *positive* in column (6), the opposite direction than the market timing story suggests. Second, I embed announcement returns for peer firms and non-peer firms around the release dates of focal firms' financial restatements in Equation (1). I estimate announcement returns on *peer* and *non-peer* firms for each financial restatement using cumulative abnormal returns (CARs) with the market model, and aggregate it at the quarterly level by averaging across all the CARs within a firm in a given quarter. I include the quarterly CAR in the regression and interact it with the *Peer 2 Quarters* indicator. The results are presented in Table A1 of the Appendix. Conspicuously, all the interaction terms have statistically insignificant coefficients.[17] Hence, among peer firms, announcement returns on their stocks following focal firms' financial restatements do not drive their subsequent stock repurchases, helping alleviate the concern that the market timing incentives are driving the spillover effect. Instead, it is more likely that the peer firms of higher accounting quality repurchase shares to signal their better accounting practices and separate from the pooling equilibrium with peer firms of lower accounting quality.

5.2 Choice of a Two-Period Window for the Spillover Effect

This section provides supporting evidence on the choice of using two quarters as the treatment window throughout the paper. I run similar regressions as in Equation (1) but only look at each individual quarter after a peer firm incurs the shock of a focal firm's financial restatement. Table 4 displays the results. In particular, I use *Peer First Quarter* to replace *Peer 2 Quarters* in Table 4 column (1). *Peer First Quarter* is defined as one if a firm belongs to the same product market as a focal firm in the quarter of the focal firm's

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[17]Except for column (5). However, as it is only marginally significant at the 10% level and is the one interaction term with such a significance, it does not affect the general interpretation of the results.

financial restatement and zero otherwise. Similar procedures apply to *Restate First Quarter*, which replaces the control indicator *Restate 2 Quarters.* In column (2), instead of looking at the quarter of the restatement, I define these indicator variables for the second quarter after the restatement. The logic goes on for column (3) and (4). I include all individual windows in the same model for column (5).

The estimated coefficients for peer firms' stock repurchases are positive and significant for the first and second quarter in both the univariate and multivariate setting, the treatment effect stays statistically significant for the first two quarters (Table 4 column (1), (2), and (5)). *Peer Third Quarter* and *Peer Fourth Quarter* are statistically insignificant in both the univariate and multivariate tests, suggesting that the treatment effect only persists for two quarters. Thus, two quarters after peer firms' exposure to focal firms' financial restatements is the ideal window for the remaining analyses. To test the robustness of this choice of the treatment window, I also run similar tests by changing the dependent variable to *Scaled Shares Repurchased* and *Scaled Dollar Repurchased* with their results reported in Appendix A.2 and A.3. Both of these additional tests confirm the choice of two quarters as the treatment window.

5.3   Validation for the Identification: Pre-trend

The identification in this paper takes a focal firm's financial restatement as an exogenous shock to the other firms in the same product market at the time of the restatement. It adopts a difference-in-differences approach that compares between peer firms and non-peer firms in the post-restatement period with the pre-restatement period. One natural question that follows is whether the treatment effect already exists before focal firms' financial restatements. There might be an unobservable underlying common factor that drives the peer

effect of interest (Manski (1993)). To alleviate this concern on the reflection problem, I run tests to rule out the presence of pre-trends. However, as described in Section 4.1.2, the panel sample for this paper constitutes an overlapping feature for the *Peer 2 Quarters* indicator variable. In turn, a given quarter can have multiple values of one for different time dummies relative to the treatment time. Hence, to circumvent this convolution, I create two indicator variables for the periods prior to *any* financial restatements and embed them in the baseline regression model.

I create an indicator variable *Previous One Quarter* that equals one if *Peer 2 Quarters* is zero in a given quarter but is one in the next quarter for a given firm, and zero otherwise. *Previous Two Quarters* equals one if *Peer 2 Quarters* is zero in the given quarter and the next quarter, but is one in the quarter after the next, and zero otherwise. These two variables restrict the definition of "pre-treatment" period to those firm-quarters prior to any exposure to a financial restatement. I test the pre-trends as follows:

$$
\begin{aligned}
Repurchase_{i,t+1} = {} & \beta_1 Peer2Quarters_{i,t} + \beta_2 Previous\,One\,Quarter_{i,t} \\
& + \beta_3 Previous\,Two\,Quarters_{i,t} + \beta_4 Restate2Quarters_{i,t} \\
& + \gamma_i + \delta_t + \epsilon_{i,t+1}
\end{aligned}
\tag{2}
$$

The regression results are reported in Table 5, where column (1) retains the baseline model that is identical to column (1) of Table 3 as the reference for comparison. Column (2) only adds the one period pre-treatment indicator *Previous One Quarter* to the baseline model, whereas column (3) only adds the two period pre-treatment indicator *Previous Two Quarters*. Table 5 column (4) incorporates both pre-treatment indicators in the baseline model. The coefficients on the treatment effect, *Peer 2 Quarters*, are rather stable both in magnitude as well as in statistical significance. Further, the coefficients on *Previous One*

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Quarter and *Previous Two Quarters* are statistically insignificant in all models, suggesting that there exists no treatment effect prior to any financial restatement. In other words, there are no pre-trends for the identification strategy. This finding helps validate that there is no unobservable underlying factor that drives the peer (spillover) effect on stock repurchases. Instead, it is focal firms' financial restatements that drive the spillover effect.

5.4 Impact of Restatement Characteristics

Financial restatements can occur for various reasons. The common ones include aggressive accounting on the original financial reports, fraudulent financial reporting, or it could simply be clerical errors. Additionally, a restatement can also trigger investigations by the SEC, especially in fraudulent and aggressive accounting cases; and some financial restatements have the board of directors participated in the process. If the spillover effect of focal firms' restatements on peer firms' subsequent stock repurchases concentrates on the peer firms with higher accounting quality separating from the pooling equilibrium, it should then be driven by restatements that are directly related to aggressive accounting (H2). I adopt the following regression specification for the analysis:

$$Firm\ Repurchase_{i,t+1} = \beta_1 Restatement\_Char\_forPeer2Quarters_{i,t} + \beta_2 Restate2Quarters_{i,t}$$
$$+ \beta_3 X_{i,t} + \gamma_i + \delta_t + \epsilon_{i,t+1}$$

$$(3)$$

where $Restatement\_Char\_forPeer2Quarters_{i,t}$ is an indicator variable that applies to the various characteristics of a financial restatement, namely *Aggressive Accounting*, *Fraud*, *Clerical Error*, *SEC Investigation*, and *Board Involvement* on a peer firm for two quarters. Thus, each of these five indicator variables are defined similarly to *Peer 2 Quarters* but with at

least one focal firm's financial restatement bearing the given characteristic.[18] For instance, *Aggressive Accounting* equals one for a peer firm to a focal firm's financial restatement that is initiated due to aggressive accounting on the original financial report, and zero otherwise. *Aggressive Accounting* stays as one for two quarters. The other four characteristics-related indicator variables follow the same methodology.

Table 6 presents the regression results. From column (1) to (5), each column corresponds to a particular characteristic of the focal firm's financial restatement, while column (6) embeds all the characteristics in the same regression. Conspicuously, financial restatements attributed to focal firms' aggressive accounting positively and significantly increase their peer firms' propensity to repurchase shares in the next quarter. In other words, financial restatements due to aggressive accounting drive peer firms' propensity for stock repurchases, consistent with hypothesis H2.

An interesting note is that restatements occurring due to fraudulent practices in the original reports negatively affect peer firms' propensity to repurchase shares subsequently.[19] One plausible explanation is that investors view aggressive accounting as more widely adopted by firms in the same product market, while fraudulent accounting is idiosyncratic to the restating firm. Hence, if the focal firms' financial restatements are due to aggressive accounting, investors in the equity market have an downward revision on the accounting quality of peer firms. This increases peer firms' average propensity to repurchase shares. But if the focal firms' restatements are ascribed to frauds, these investors view them as firm-specific, and do not infer peer firms' accounting quality based on that, reducing peer firms' average

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[18]It is equivalent to a triple interaction term between the treatment dummy on peer firms, post dummy on post-restatement periods, and a dummy on the reason cited for the focal firm's restatement.

[19]Fraud can extend beyond accounting fraud. And the fraud category reported by Audit Analytics is back-filled and may not fully report all firms' frauds, as documented by Karpoff, Koester, Lee, and Martin (2017).

propensity to repurchase shares.

To further corroborate this explanation, I embed all the characteristics in one regression (i.e., column (6) of Table 6) and sum the coefficients on *Aggressive Accounting* and *Fraud*. By testing the joint coefficient, which has a value (*F*-stats and *p*-value) of 0.0093 (2.30 and 0.15), I confirm that these two characteristics have distinct effects on peer firms' propensity to repurchase shares subsequently.

The other characteristics alone do not largely affect peer firms' propensity for subsequent stock repurchases. Adding *Clerical Error*, *SEC Investigation*, and *Board Involvement* to the coefficient of *Aggressive Accounting* in column (6) produces coefficients (*p*-value) of 0.0111 (0.07), 0.0129 (0.01), and 0.0088 (0.02), respectively. The statistical significance implies that if restatements are issued due to a combination of aggressive accounting with clerical error, or aggressive accounting with SEC investigation, or aggressive accounting with board involvement, they will increase peer firms' propensity for share repurchases. Hence, it needs to be focal firms' financial restatements directly ascribed to their accounting standards that drive the spillover effect on peer firms' subsequent stock repurchases.

6 Peer Firms' Stock Repurchases for the Separating Equilibrium

6.1 Peer Firms' Accounting Quality in Accruals

Upon stock repurchases, peer firms of higher accounting quality separate themselves from the pooling equilibrium with those of lower accounting quality. Hence, their superior accounting quality should be reflected accordingly conditional on stock repurchases. Once

some peer firms repurchase shares, the ones that do not repurchase shares will be deemed by the investors in the equity market as the lower accounting quality peers. Consequently, peer firms with stock repurchase have higher accounting quality than the peer firms without stock repurchases (H3).

One common proxy for accounting quality is firm accruals quality (e.g., Dechow and Dichev (2002), and Francis, LaFond, Olsson, and Schipper (2005)). I adopt the exact measure for accruals quality developed by Francis, LaFond, Olsson, and Schipper (2005). I regress current period's total accruals on previous, current, and next period's operating cash flow, change in revenue, and gross property, plant, and equipment (PPE). The residuals of the regression are the accruals that cannot be explained by the accounting variables. The standard deviation of the residuals in the past 5 periods (from $t-4$ to t) represent the level of accruals. Thus, the lower the accruals, the higher the accounting quality. I then compare a firm's accruals value in that quarter with the median accruals value of its product market in the same period. Specifically, I define $High\_Accounting\_Quality_{i,t}$ as an indicator variable that equals one if firm i's accruals in quarter t is lower than its industry median accruals and zero otherwise. With this proxy for firm accounting quality, I run the following regression for the subsample of peer firms:

$$High\_Accounting\_Quality_{i,t+n} = \beta_1 Repurchase_{i,t} + \beta_2 X_{i,t} + \gamma_i + \delta_t + \epsilon_{i,t+n} \qquad (4)$$

where $n \in \{1, 2, 3, 4\}$ in quarters. As the subsample only contains peer firms, and thus $Peer2Quarters_{i,j,t-1}$ equals one for all the observations in this test. $Repurchase_{i,t}$ equals one if firm i repurchases shares in quarter t in the open market, and zero otherwise. The remaining variables follow the definitions in Equation (1). Table 7 displays the results.

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The coefficient on *Repurchase* are positive and statistically significant at the one percent level in all four columns. It suggests that within peer firms, those that repurchase shares have higher accruals quality than those that do not repurchase shares. This set of results is consistent with hypothesis H3 for higher accounting quality peer firms use stock repurchases to reveal their true accounting quality. Peer firms that repurchase shares after being affected by focal firms' financial restatements are 2.9% more likely than the unconditional mean to have higher than industry median accruals quality in the next quarter, as compared to peer firms who do not repurchase shares.[20]

Further, I employ an alternative measure for a firm's accounting quality to test the robustness of the results. In the appendix, I proxy for a firm's accounting quality by its likelihood of managing earnings to narrowly beat the target value (Lang, Raedy, and Wilson (2006) and Barth, Landsman, and Lang (2008)). I define this threshold above the target as 2 cents such that a firm actively adopts earnings management if its actual earnings is less than 2 cents higher than the target.[21] The $High\_Earnings\_Quality_{i,t+n}$ indicator here is one if firm i does NOT manage its earnings to be slightly above the target in quarter $t + n$ and zero otherwise. Following the same regression as Equation (4), Table A6 shows that peer firms who repurchase shares have higher accounting quality represented by the likelihood of earnings management than peer firms who do not repurchase shares.

Collectively with Table 7, I provide the first step in evidencing that the spillover effect originates from higher accounting quality peer firms repurchase shares to separate from the pooling equilibrium with the lower accounting quality peer firms.

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[20]The unconditional mean of *High Accruals Quality* is 0.5040. Using the coefficient on *Repurchase* from column (1), the difference from the unconditional mean is $\frac{0.01438}{0.5040} = 0.029$, i.e., 2.9% higher probability of its accruals quality to be better than the product market median.

[21]In unreported results, I test robustness by changing the threshold from 2 cents to 1 cent, 3 cents, and 5 cents slightly above the target. All results still hold.

6.2 Peer Firms' Subsequent Restatements

Financial restatements directly reflect firms' accounting quality. It means that peer firms who restate their own financial reports are the ones with lower accounting quality and vice versa. Peer firms with higher accounting quality can use stock repurchases to separate from the rest. Thus, peer firms who repurchase shares should have lower likelihood in restating their own financial reports subsequently than peer firms who do not repurchase shares (H4). By restricting to the subsample of peer firms, I run the following regression model to test this hypothesis:

$$Subsequent\_Fin\_Res_{i,t+n} = \beta_1 Repurchase_{i,t} + \beta_2 X_{i,t} + \gamma_i + \delta_t + \epsilon_{i,t+n} \tag{5}$$

where $n \in \{1, 2, 3, 4\}$ in quarters. The subsample is identical to that in Section 6.1. $Subsequent\_Fin\_Res_{i,t+n}$ is an indicator variable that measures whether firm i issues any restatement in the next n quarters. The remaining variables follow the same definitions as in Equation (1). Table 8 exhibits the results.

The independent variable *Repurchase* has negative coefficients in all four columns, with statistical significance at the 10% level in columns (1) and (2). It implies that peer firms who repurchase shares have lower likelihood in restating their own financial reports in the next two quarters than their counterparts who do not repurchase shares. The effect correspond to 33% and 47.5% less likely to issue financial restatements from the unconditional mean among peer firms with stock repurchases. These magnitudes are relative to peer firms without stock repurchases in the first and second quarter after the focal firms' financial restatements.[22] The results are not statistically significant in columns (3) and (4) likely because it is rare for firms

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[22]Taking Column (1) and (2) for comparison. In column (1), the decrease from the unconditional mean is $\frac{0.00467}{0.0142} = 0.329$ or 33%. In column (2), the decrease from the unconditional mean is $\frac{0.00675}{0.0142} = 0.475$.

to restate their financial reports many periods after they occur. Nevertheless, Table 8 provide consistent results that peer firms with stock repurchases are less likely to restate their own financial statements subsequently than peer firms without stock repurchases.

6.3 Peer Firms' Subsequent Litigation Risk

Peer firms with better accounting quality want to reveal that information to the participants in the equity market. They do so to separate from the ones with lower accounting quality because the latter often incur legal actions by investors, regulators, and watchdog groups. Hanley and Hoberg (2012) have also documented that firms apply numerous strategies to mitigate litigation risks during IPOs. Presumably, peer firms with higher accounting quality want to signal their accounting superiority to mitigate the litigation risk of class action lawsuits against their accounting practices. By the logic similar to that in Section 6.1 and 6.2, peer firms with stock repurchases are the ones with better accounting quality. Thus, ex post, they should have lower accounting-related litigation risk than peer firms without stock repurchases (H5). Within the subsample of peer firms, the following specification tests for this hypothesis:

$$Subsequent\_Litigation\_Risk_{i,t+n} = \beta_1 Repurchase_{i,t} + \beta_2 X_{i,t} + \gamma_i + \delta_t + \epsilon_{i,t+n} \qquad (6)$$

where $Subsequent\_Litigation\_Risk_{i,t+n}$ is an indicator variable that measures whether firm i faces any class action lawsuits against its accounting practices in the next six months, one, two, and three years after quarter t. The class action lawsuits against firms' accounting practices pertain to Rule 10b-5 of the Securities Exchange Act of 1934, Section 11, and Section 12(a) of the Securities Act of 1933, as described in Section 4.1.2. I measure litigation

risk over a longer horizon because it takes time to file a class action lawsuit against a public firm in the U.S.. The subsample used in this analysis follows the one in Section 6.1 and 6.2.

Table 9 exhibits the empirical results. The coefficients on *Repurchase* are negative and statistically significant at the 1% level, suggesting that peer firms with stock repurchases have lower litigation risks against their accounting practices than peer firms without stock repurchases, consistent with H5. This finding supports the argument that peer firms of higher accounting quality avoid repercussions associated with low accounting quality by separating from the pooling equilibrium via stock repurchases. Without stock repurchases, peer firms attract attention from watchdog groups, regulators, and other market participants to their accounting quality. In turn, they are more likely to incur accounting-related class action lawsuits filed by these entities. With stock repurchases, higher accounting quality peer firms separate themselves from the pooling equilibrium. They have revealed their accounting superiority to the relevant parties in the equity market and do not experience greater accounting litigation risk than their counterparts that do not repurchase shares.

The accounting-related litigation risk in the six months following peer firms' exposure to focal firms' financial restatements reduces by 89% from the unconditional mean for peer firms who repurchase shares relative to those who do not repurchase shares.[23] This represents a much larger economic magnitude than the previous results. It confirms the rationale for peer firms with greater accounting quality using stock repurchases to separate from the rest. Consequently, they manage to mitigate accounting-related litigation risks.

This set of results completes the argument on peer firms using stock repurchases to separate themselves from a pooling equilibrium. Specifically, peer firms with better accounting

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[23]For the six months period, it corresponds to column (1) of Table 9. *Repurchase* in column (1) has a coefficient of -0.00402, while the unconditional mean for an accounting-related litigation is 0.0045 as shown in Table 2. Thus, the economic magnitude is $\frac{-0.00402}{0.0045} = -0.893$ or -89%.

quality repurchase shares to distinguish from the peer firms with lower accounting quality after exposure to focal firms' financial restatements. This spillover effect manifests itself in repurchasing firms showing greater accounting quality in higher quality of accruals and lower likelihood of subsequent self-restatement. In turn, the repurchasing peer firms, i.e., the peer firms with higher accounting quality, reduce accounting-related litigation risks.

7   Insider Trading

Prior literature has documented that firm insiders trade in line with the firm's actual repurchases (e.g., Ben-Rephael, Oded, and Wohl (2014)). In the context of this paper, for peer firms with greater accounting quality, their managers (i.e., firm insiders) know that the firms will soon repurchase sharess, which will lead to price increase. To benefit from future higher prices, the insiders should have more net buys in their own trading accounts before the firms' stock repurchase actions (H6). Given that the spillover effect persists only for two quarters (6 months), insiders of peer firms subject to the spillover effect have a relatively short window to react. However, as explicated in Section 3, sudden surge in insider buying can be risky to the insiders because all of their trades need to be pre-registered with the SEC as non-material trades. On the other hand, cancelling pre-registered sale trades, i.e., holding on to their current shares, is perfectly legal. Hence, I conjecture that peer firms subjects to the spillover effect have greater prior net insider buys and they should originate from insiders retaining their current holdings (reducing insider sell orders). I test H6 with

the following specification:

$$Insider\ Trades_{i,t} = \beta_1 Repurchase\_in\_2Quarters_{i,t+1} + \beta_2 Peer2Quarters_{i,t}$$
$$+ \beta_3 Repurchase\_in\_2Quarters_{i,t+1} \times Peer2Quarters_{i,t} \qquad (7)$$
$$+ \beta_4 Restate2Quarters_{i,t} + \beta_5 X_{i,t} + \gamma_i + \delta_t + \epsilon_{i,t}$$

where $Repurchase\_in\_2Quarters_{i,t}$ is a dummy variable that equals one if firm i repurchases shares within the next two quarters after quarter t, i.e., in quarter $t+1$ or quarter $t+2$, and zero otherwise. I also change this indicator variable to repurchase size variables $Scaled\_Shares\_in\_2Quarters_{i,t}$ and $Scaled\_Dollar\_in\_2Quarters_{i,t}$, which is the sum of $Scaled\ Shares$ and $Scaled\ Dollar$ of firm i within the next two quarters, respectively. The dependent variable regarding $Insider\ Trades_{i,t}$ takes three forms: $Net\ Shares$ transacted by insiders of firm i in quarter t, $Shares\ Purchased$ by insiders of firm i in quarter t, and $Shares\ Sold$ by insiders of firm i in quarter t. $Shares\ Purchased$ is the total number of shares bought by all insiders of firm i in quarter t scaled by its total shares outstanding in the previous fiscal year-end, while $Shares\ Sold$ is the total number of shares disposed by all insiders of firm i in quarter t scaled by its total shares outstanding in the previous fiscal year-end. As a result, $Net\ Shares$ is defined as $Shares\ Purchased$ minus $Shares\ Sold$.

Table 10 presents the regression results. The first column pertains to $Net\ Shares$ as the dependent variable, whereas the middle column pertains to $Shares\ Purchased$, and the last column pertains to $Shares\ Sold$ as the dependent variable. To conserve space, only regressions using $Repurchase\_in\_2Quarters_{i,t}$ as the independent variable are presented in Table 10. The results using $Scaled\_Shares\_in\_2Quarters_{i,t}$ and $Scaled\_Dollar\_in\_2Quarters_{i,t}$ as the independent variables are reported in Appendix Table A7.

The positive and significant coefficient of β_3 in Table 10 column (1) suggests that peer

firms that repurchase shares within the next two quarters after being affected by a focal firm's financial restatement will have more net insider buys in the current quarter, consistent with hypothesis H6. Particularly, if a peer firm repurchases shares in the open market within two quarters after being affected by a focal firm's financial restatement, its insiders will increase their net shares transacted by 0.00040, which is 44% in the opposite direction from the unconditional mean.[24] Columns (2) and (3) decompose the net shares transacted by firm insiders in a given quarter to shares bought and shares sold by the insiders. The interaction term produces statistically insignificant coefficient in column (2) but negative and significant coefficient in column (3), implying that the result is driven by peer firms' insiders selling fewer of their shares if they know their firms will repurchase shares in the next two quarters due to the spillover effect, consistent with the explanation for H6. Economically, peer firm insiders sell 9.4% less from the unconditional mean.[25] This makes sense because for insiders to buy more shares, they have to pre-register with the SEC, making it risky to buy more shares shortly before a stock repurchase. It is less risky for them to withhold the shares they currently have and not sell them in anticipation of higher prices from the firms' stock repurchases in the near future.

Further, using the size of peer firms' stock repurchases produces consistent results, as shown in Table A7. Column (1) and (4) have positive and significant coefficients on the interaction term, suggesting that peer firms' insiders will have greater net shares transacted if their firms have larger sized stock repurchases in the next two quarters. Once decomposed by transaction types, it is again that reduced sells by insiders drive the results (columns (3) and (6)).

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[24]The unconditional mean for *Net Shares* is -0.0009. The economic magnitude is $\frac{0.00040}{-0.0009} = 0.44$ or 44%, but in the opposite direction from the unconditional mean.

[25]The coefficient is -0.00047, and the unconditional mean for *Scaled Shares Sold* is 0.0050. The economic magnitude is $\frac{-0.00047}{0.0050} = -0.094$ or 9.4% less from the unconditional mean.

8   Conclusion

This paper uses focal firms' financial restatements as a shock for peer firms in the same product market. I find, in a difference-in-differences framework, the spillover effect of focal firms' financial restatements on peer firms' subsequent stock repurchases. Peer firms increase their propensity to repurchase shares by 12.9% from the unconditional mean as compared to non-peer firms in the quarter after focal firms' financial restatements. The magnitude increases to 17% in the intensive margin.

I provide evidence corroborating that this spillover effect is constituted of the peer firms with better accounting quality using stock repurchases to separate from the pooling equilibrium with those with lower accounting quality. This explanation is supported by the results where peer firms that repurchase shares have lower accruals, lower probability in subsequent financial restatement, and lower subsequent accounting litigation risks than peer firms without stock repurchases. Further, I find that peer firms subject to this spillover effect have greater prior net insider buys, and they primarily stem from insiders reducing sell orders before their firms' stock repurchases in the near future.

This is the first paper that studies the spillover effect of one firm's financial restatement on peer firms' stock repurchases. It also adds to the literature on firms using stock repurchases to separate from pooling equilibria, but through the accounting quality channel.

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Tables

Table 1: Restatement Summary Statistics

This table presents the summary statistics on the financial restatements used to generate the sample. The sample period spans from 2003 to 2020 and includes all the financial restatements occurred in this period that can be matched to the CRSP/Compustat Merged Database. There are a total of 7,038 financial restatements. Panel A describes the characteristics of the restatements. Panel B presents the statistics on the number of peer firms matched to each restatement.

Panel A: Characteristics of Restatements		
Restatement Types	Number	Percentage of Total
Accounting	6,714	95.40
Fraud	126	1.79
Clerical Error	299	4.25
Negative Revision	5,663	80.46
SEC Investigation	411	5.84
Board Involvement	2,410	34.24
Total Restatement	7,038	100.00

Panel B: Number of Peer Firms to Restatements								
	Mean	St. Dev.	Min	25%	Median	75%	Max	Observation
Number of Peer Firms	167	153	1	42	118	259	773	612,259

Table 2: Firm Level Summary Statistics

This table presents the summary statistics on the full sample. The sample period spans from 2003 to 2020 and includes all firms in the CRSP/Compustat Merged Database. Variables presented are at the firm-quarter level. All variables related to share repurchase are matched to the next calendar quarter, while all annual variables are controls matched to the previous fiscal year-end. *Scaled Shares Repurchased* is calculated as the raw number of shares repurchased by a firm in a given quarter divided by the firm's number of shares outstanding in the previous fiscal year-end. Similarly, *Scaled Dollar Repurchased* is computed as the dollar amount spent by a firm on repurchasing shares in the open market in a given quarter divided by its market capitalization in the previous fiscal year-end. *Previous 6 Months' Return* refers to the six months (calendar month) return prior to the first day of a given quarter for a given firm in the sample, presented in decimals. Cumulative abnormal returns (CAR) refer to the abnormal returns for both peer and non-peer firms around the day that a focal firm releases its financial restatement.They are calculated as the mean CARs to all the financial restatements in a given quarter for each peer and non-peer firm. Each CAR is estimated using the market model. Panel A refers to all variables measured at the quarterly frequency, while Panel B refers to variables at the annual frequency.

	Mean	St. Dev.	Median	Min	Max	Observation
Panel A: Quarterly Measures						
Repurchase	0.0976	0.2968	0.0000	0.0000	1.0000	412,582
Repurchase Dollar ($)	2,474,962.7599	14,852,240.1128	0.0000	0.0000	125,050,000.0000	412,582
Repurchase Shares	69,418.3426	383,738.9608	0.0000	0.0000	3,137,473.0000	412,582
Scaled Shares Repurchased	0.0008	0.0037	0.0000	0.0000	0.0272	397,465
Scaled Dollar Repurchased	0.0007	0.0033	0.0000	0.0000	0.0242	397,316
Insider Net Shares Transacted	-48,725.2877	954,237.5699	1,500.0000	-6,759,092.0000	3,966,794.0000	237,677
Insider Total Shares Purchased	227,539.6814	826,756.6782	23,775.0000	0.0000	6,872,557.0000	237,677
Insider Total Shares Sold	279,885.6930	1,162,555.8168	12,000.0000	0.0000	9,496,460.0000	237,677
Scaled Net Shares	-0.0009	0.0171	0.0000	-0.1201	0.0608	230,437
Scaled Shares Purchased	0.0040	0.0122	0.0006	0.0000	0.0954	230,437
Scaled Shares Sold	0.0050	0.0193	0.0003	0.0000	0.1508	230,437
Previous 6 Months' Return	0.0722	0.4210	0.0407	-0.7767	1.9034	356,063
CAR[-1, 3]	0.00831	1.27392	-0.00026	-0.55054	667.99902	396,220
CAR[-1, 5]	0.00771	0.76219	-0.00051	-0.66550	257.80344	396,220
CAR[-1, 7]	0.00852	1.30423	-0.00106	-0.77598	699.00470	396,214
ROA	0.0071	0.0652	0.0190	-0.3239	0.1292	337,700
Quarterly Asset ($ billion)	8.0232	29.1000	0.7204	0.0061	232.1030	368,151
High Accrual (> industry median)	0.5040	0.5000	1.0000	0.0000	1.0000	279,310
Peer Firm	0.3755	0.4843	0.0000	0.0000	1.0000	412,582
Restatement	0.0142	0.1183	0.0000	0.0000	1.0000	412,582
Litigation	0.0045	0.0671	0.0000	0.0000	1.0000	412,582
Panel B: Annual Controls						
Total Assets ($ million)	8,504.1337	31,329.9970	716.9360	6.2520	249,758.9910	358,777
Cash ($ billion)	0.4039	1.3442	0.0418	0.0001	10.2198	352,822
Shares Outstanding (millions)	130.9069	332.6756	35.2740	1.7620	2,434.0000	397,465
EPS (diluted)	0.7681	2.3376	0.5400	-7.4700	10.0000	357,952
Retained Earnings ($ billion)	1.0354	4.4046	0.0221	-3.9229	32.3140	350,660
Market Cap. ($ million)	4,179.2077	12,607.8068	442.6497	5.9661	90,390.5234	397,316
Size	6.6075	2.2373	6.5764	1.9813	12.4283	358,777
Market-to-Book	1.3600	1.6476	0.8337	0.0321	9.7486	358,332
Price-Earnings Ratio	12.4957	50.8987	13.2374	-219.0000	268.6667	356,514
Quarter Panel Sample Firms					12,385	412,582

Table 3: Baseline Results on Peer Firms' Share Repurchases

This table presents the difference-in-differences regression results on peer firms' share repurchases. The dependent variables in the first two columns are *Repurchase*, which equals one if a firm spends a non-zero amount repurchasing its shares in the open market in a given quarter, and zero otherwise. The dependent variables in the middle two columns are *Scaled Shares*, which is the number of shares repurchased by a firm in a given quarter scaled by its shares outstanding in the previous fiscal year-end. The dependent variables in columns (5) and (6) are *Scaled Dollar*, which is the dollar amount of shares repurchased by a firm in a given quarter scaled by its market capitalization in the previous fiscal year-end. *Peer 2 Quarters* equals one if a given firm is in the same product market as the restating firm for 2 quarters starting from the quarter in which the restatement occurs. *Restate 2 Quarters* equals one if a given firm issues a restatement in a given quarter and stays as one from the restating quarter for 2 quarters, and zero otherwise. All regressions include firm and time fixed effects and robust standard errors are clustered by firm and year. t-statistics are presented in parentheses. *, **, *** represents statistical significance at the 10%, 5%, and 1% level.

VARIABLES	(1) Repurchase_{t+1}	(2) Repurchase_{t+1}	(3) $\text{Scaled Shares}_{t+1}$	(4) $\text{Scaled Shares}_{t+1}$	(5) $\text{Scaled Dollar}_{t+1}$	(6) $\text{Scaled Dollar}_{t+1}$
Peer 2 Quarters	0.01474***	0.01256***	0.00016***	0.00014***	0.00014***	0.00012***
	(3.08)	(3.94)	(3.95)	(4.94)	(3.79)	(4.76)
Restate 2 Quarters	-0.00660	-0.00880*	-0.00006	-0.00005	-0.00005	-0.00004
	(-1.46)	(-2.04)	(-1.06)	(-0.89)	(-0.97)	(-0.78)
Size		0.02180***		0.00016***		0.00011***
		(5.77)		(5.15)		(4.15)
Previous 6 Months' Return		0.00278		-0.00000		0.00009***
		(0.94)		(-0.09)		(3.97)
Cash		0.00324		0.00002		0.00003
		(1.20)		(0.85)		(0.97)
EPS		0.00654***		0.00010***		0.00008***
		(5.09)		(5.96)		(5.63)
Retained Earnings		-0.00222		-0.00002		-0.00002
		(-1.36)		(-1.11)		(-1.26)
PE Ratio		0.00003		0.00000		0.00000
		(1.63)		(0.98)		(0.94)
MTB		0.00138		-0.00001		-0.00003*
		(0.75)		(-0.35)		(-1.92)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	412,298	307,772	397,284	307,772	397,136	307,772
Adjusted R-squared	0.328	0.329	0.179	0.179	0.193	0.192

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Table 4: Different Windows for Peer Firms' Repurchase Propensity

This table presents the difference-in-differences results with different windows. The dependent variables are all *Repurchase*, which equals one if a firm spends a non-zero amount repurchasing its shares in the open market in a given quarter, and zero otherwise. *Peer First Quarter* equals one if a given firm is in the same product market as the restating firm for the quarter in which the restatement occurs and zero otherwise. *Peer Second Quarter* equals one if a given firm is in the same product market as the restating firm for the second quarter after the restatement and zero otherwise. Similar definitions extends to the other windows. All regressions include firm and time fixed effects and robust standard errors are clustered by firm and year. *t*-statistics are presented in parentheses. *, **, *** represents statistical significance at the 10%, 5%, and 1% level.

VARIABLES	(1) Repurchase_{t+1}	(2) Repurchase_{t+1}	(3) Repurchase_{t+1}	(4) Repurchase_{t+1}	(5) Repurchase_{t+1}
Peer First Quarter	0.00719***				0.01549***
	(3.11)				(3.48)
Peer Second Quarter		0.00593**			0.01583***
		(2.21)			(3.09)
Peer Third Quarter			-0.00232		0.00747
			(-0.72)		(1.57)
Peer Fourth Quarter				-0.00437*	0.00446
				(-1.86)	(1.20)
Restate First Quarter	-0.00638				-0.00749
	(-1.42)				(-1.53)
Restate Second Quarter		-0.00949**			-0.01077**
		(-2.27)			(-2.36)
Restate Third Quarter			-0.00184		-0.00347
			(-0.46)		(-0.81)
Restate Fourth Quarter				0.00100	-0.00050
				(0.36)	(-0.16)
Size	0.02186***	0.02197***	0.02195***	0.02195***	0.02176***
	(5.79)	(5.76)	(5.77)	(5.77)	(5.74)
Previous 6 Months' Return	0.00286	0.00283	0.00288	0.00289	0.00273
	(0.96)	(0.95)	(0.96)	(0.97)	(0.93)
Cash	0.00326	0.00330	0.00330	0.00329	0.00322
	(1.21)	(1.22)	(1.22)	(1.22)	(1.19)
EPS	0.00654***	0.00652***	0.00653***	0.00653***	0.00653***
	(5.07)	(5.04)	(5.04)	(5.05)	(5.10)
Retained Earnings	-0.00222	-0.00221	-0.00221	-0.00221	-0.00221
	(-1.36)	(-1.36)	(-1.36)	(-1.36)	(-1.36)
PE Ratio	0.00003	0.00003	0.00003	0.00003	0.00003
	(1.62)	(1.63)	(1.63)	(1.63)	(1.63)
MTB	0.00142	0.00150	0.00149	0.00149	0.00138
	(0.77)	(0.81)	(0.81)	(0.81)	(0.75)
Firm FE	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes
Observations	307,772	307,772	307,772	307,772	307,772
Adjusted R-squared	0.328	0.328	0.328	0.328	0.329

Table 5: Pre-trend Test on the Baseline Results

This table tests on the pre-trend of the baseline regressions. *Previous One Quarter* equals one if *Peer 2 Quarters* is zero in a given quarter but is one in the immediate next quarter, and zero otherwise. *Previous Two Quarters* equals one if *Peer 2 Quarters* is zero in a given quarter and the next quarter but is one two quarters from now, and zero otherwise. The dependent variables are *Repurchase*, which equals one if a firm spends a non-zero amount repurchasing its shares in the open market in a given quarter, and zero otherwise. *Peer 2 Quarters* equals one if a given firm is in the same product market as the restating firm for 2 quarters starting from the quarter in which the restatement occurs. *Restate 2 Quarters* equals one if a given firm issues a restatement in a given quarter and stays as one from the restating quarter for 2 quarters, and zero otherwise. All regressions include firm and time fixed effects and robust standard errors are clustered by firm and year. *t*-statistics are presented in parentheses. *, **, *** represents statistical significance at the 10%, 5%, and 1% level.

VARIABLES	(1) Repurchase_{t+1}	(2) Repurchase_{t+1}	(3) Repurchase_{t+1}	(4) Repurchase_{t+1}
Peer 2 Quarters	0.01474***	0.01474***	0.01539***	0.01539***
	(3.08)	(3.08)	(3.03)	(3.03)
Previous One Quarter		0.01275		0.01360
		(0.17)		(0.18)
Previous Two Quarters			0.00798	0.00798
			(1.52)	(1.52)
Restate 2 Quarters	-0.00660	-0.00660	-0.00662	-0.00662
	(-1.46)	(-1.46)	(-1.46)	(-1.46)
Other Controls	No	No	No	No
Firm FE	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes
Observations	412,298	412,298	412,298	412,298
Adjusted R-squared	0.328	0.328	0.328	0.328

Table 6: Restatement Characteristics for the Spillover Effect

This table presents the difference-in-differences regression results regarding the different characteristics of focal firms' financial restatements. The dependent variables in all columns are *Repurchase*, which equals one if a firm spends a non-zero amount repurchasing its shares in the open market in a given quarter, and zero otherwise. The independent variables are *Aggressive Accounting, Fraud, Clerical Error, SEC Investigation, and Board Involvement*, each of which equals one for a peer firm exposed to at least one focal firm's financial restatement that has the corresponding characteristics (e.g., the restatement was due to aggressive accounting) starting in the quarter that the restatement occurs for 2 quarters. All regressions include firm and time fixed effects and robust standard errors are clustered by firm and year. *t*-statistics are presented in parentheses. *, **, *** represents statistical significance at the 10%, 5%, and 1% level.

VARIABLES	(1) Repurchase	(2) Repurchase	(3) Repurchase	(4) Repurchase	(5) Repurchase	(6) Repurchase
Aggressive Accounting	0.01284***					0.01603***
	(4.07)					(4.49)
Fraud		-0.00990**				-0.00671
		(-2.47)				(-1.63)
Clerical Error			-0.00585			-0.00491
			(-1.21)			(-1.07)
SEC Investigation				-0.00447*		-0.00312
				(-1.79)		(-1.35)
Board Involvement					-0.00273	-0.00721*
					(-0.87)	(-1.87)
Restate 2 Quarters	-0.00877*	-0.00816*	-0.00812*	-0.00813*	-0.00810*	-0.00861*
	(-2.03)	(-1.88)	(-1.87)	(-1.87)	(-1.88)	(-2.01)
Size	0.02179***	0.02203***	0.02201***	0.02202***	0.02206***	0.02188***
	(5.77)	(5.77)	(5.77)	(5.77)	(5.79)	(5.80)
Previous 6 Months' Return	0.00280	0.00292	0.00282	0.00278	0.00285	0.00275
	(0.94)	(0.98)	(0.94)	(0.93)	(0.95)	(0.92)
Cash	3.22713	3.31043	3.34573	3.31663	3.32318	3.27045
	(1.20)	(1.23)	(1.24)	(1.23)	(1.23)	(1.22)
EPS	0.00654***	0.00652***	0.00650***	0.00651***	0.00650***	0.00649***
	(5.08)	(5.04)	(5.02)	(5.04)	(5.01)	(5.01)
Retained Earnings	-2.21493	-2.21065	-2.21081	-2.20452	-2.20773	-2.21174
	(-1.36)	(-1.36)	(-1.36)	(-1.36)	(-1.36)	(-1.36)
PE Ratio	0.00003	0.00003	0.00003	0.00003	0.00003	0.00003
	(1.62)	(1.64)	(1.63)	(1.63)	(1.64)	(1.64)
MTB	0.00138	0.00151	0.00151	0.00152	0.00152	0.00148
	(0.75)	(0.82)	(0.82)	(0.82)	(0.82)	(0.80)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	307,772	307,772	307,772	307,772	307,772	307,772
Adjusted R-squared	0.329	0.328	0.328	0.328	0.328	0.329

Table 7: Post-Repurchase Accounting Quality in Accruals

This table presents the subsample analysis on the accruals quality within peer firms. The dependent variables for accruals quality are the *High Accruals Quality* of a firm, defined as one if the firm's *accounting accruals* are lower than the median accounting accruals of the product market in a given quarter, and zero otherwise. Accounting accruals are calculated as Francis, LaFond, Olsson, and Schipper (2005). The higher the accounting accruals, the lower the accounting quality. Independent variable of interest is *Repurchase*, which equals one if a firm spends a non-zero amount repurchasing its shares in the open market in a given quarter, and zero otherwise. The regressions compare the accruals quality between peer firms with share repurchases and peer firms without share repurchases. All regressions include firm and time fixed effects and robust standard errors are clustered by firm and year. *t*-statistics are presented in parentheses. *, **, *** represents statistical significance at the 10%, 5%, and 1% level.

VARIABLES	(1) t+1	(2) t+2	(3) t+3	(4) t+4
	High Accruals Quality for Peer 2 Quarters = 1			
Repurchase	0.01438***	0.01485***	0.01678***	0.01902***
	(3.00)	(3.32)	(3.48)	(3.74)
Size	-0.07960***	-0.06433***	-0.04862***	-0.03861***
	(-9.70)	(-6.14)	(-4.12)	(-3.48)
Previous 6 Months' Return	0.00738**	0.01206***	0.01146***	0.01150***
	(2.54)	(4.79)	(3.75)	(3.33)
Cash	0.00848	0.01112**	0.00967*	0.01131*
	(1.69)	(2.18)	(1.78)	(2.07)
EPS	0.00234	0.00244	0.00227	0.00202
	(1.65)	(1.55)	(1.51)	(1.45)
Retained Earnings	0.00391***	0.00467***	0.00568***	0.00620***
	(3.13)	(3.45)	(3.89)	(4.23)
PE Ratio	-0.00001	-0.00002	-0.00001	0.00001
	(-0.52)	(-0.80)	(-0.24)	(0.30)
MTB	0.00308	0.00378	0.00402	0.00504*
	(1.43)	(1.55)	(1.58)	(1.94)
Firm FE	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes
Observations	163,242	163,242	163,242	163,242
Adjusted R-squared	0.445	0.435	0.432	0.429

Table 8: Post-Repurchase Likelihood of Restatement

This table presents the subsample analysis on the subsequent likelihood in issuing financial restatements within peer firms. The dependent variables are the *Likelihood of Restatement* of a firm, defined as one if the firm issues a financial restatement in the corresponding quarter, and zero otherwise. Independent variable of interest is *Repurchase*, which equals one if a firm spends a non-zero amount repurchasing its shares in the open market in a given quarter, and zero otherwise. The regressions compare the subsequent likelihood of issuing financial restatements between peer firms with share repurchases and peer firms without share repurchases. All regressions include firm and time fixed effects and robust standard errors are clustered by firm and year. *t*-statistics are presented in parentheses. *, **, *** represents statistical significance at the 10%, 5%, and 1% level.

	(1)	(2)	(3)	(4)
	Likelihood of Restatement for Peer 2 Quarters = 1			
VARIABLES	t+1	t+2	t+3	t+4
Repurchase	-0.00467*	-0.00675*	-0.00703	-0.00790
	(-2.04)	(-1.97)	(-1.67)	(-1.69)
Size	0.01082***	0.01528***	0.01779***	0.02084***
	(6.14)	(5.95)	(5.47)	(5.69)
Previous 6 Months' Return	-0.00258	-0.00373*	-0.00432	-0.00447
	(-1.71)	(-1.79)	(-1.70)	(-1.55)
Cash	0.00209	0.00284	0.00468*	0.00478*
	(1.38)	(1.56)	(2.07)	(1.76)
EPS	-0.00248***	-0.00338***	-0.00401***	-0.00409***
	(-4.49)	(-4.45)	(-4.22)	(-3.86)
Retained Earnings	0.00065	0.00103	0.00140	0.00167
	(1.18)	(1.33)	(1.41)	(1.39)
PE Ratio	0.00000	0.00001	0.00002	0.00002
	(0.00)	(0.45)	(0.76)	(0.64)
MTB	-0.00062	-0.00051	-0.00072	-0.00043
	(-0.86)	(-0.49)	(-0.59)	(-0.29)
Firm FE	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes
Observations	163,242	163,242	163,242	163,242
Adjusted R-squared	0.081	0.119	0.154	0.186

Table 9: Post-Repurchase Likelihood of Litigation

This table presents the subsample analysis on the subsequent accounting-related litigation risk within peer firms. The dependent variables are the *Litigation Risk* of a firm, defined as one if the firm receives a class action lawsuit against its accounting practices in the corresponding quarter, and zero otherwise. Independent variable of interest is *Repurchase*, which equals one if a firm spends a non-zero amount repurchasing its shares in the open market in a given quarter, and zero otherwise. The regressions compare the subsequent accounting-related litigation risk between peer firms with share repurchases and peer firms without share repurchases. All regressions include firm and time fixed effects and robust standard errors are clustered by firm and year. *t*-statistics are presented in parentheses. *, **, *** represents statistical significance at the 10%, 5%, and 1% level.

VARIABLES	(1) 6 Months	(2) 1 Year	(3) 2 Years	(4) 3 Years
	Litigation Risk for Peer 2 Quarters = 1			
Repurchase	-0.00402***	-0.00654***	-0.01122***	-0.01289***
	(-3.02)	(-3.65)	(-3.60)	(-3.57)
Size	0.01204***	0.01563***	0.01946***	0.01995***
	(8.64)	(6.56)	(4.75)	(4.50)
Previous 6 Months' Return	-0.00857***	-0.00736***	-0.00212	-0.00043
	(-5.22)	(-3.79)	(-1.05)	(-0.19)
Cash	-0.00002	0.00099	0.00328	0.00150
	(-0.01)	(0.39)	(0.80)	(0.28)
EPS	-0.00024	-0.00048	-0.00065	-0.00043
	(-0.72)	(-1.03)	(-0.84)	(-0.44)
Retained Earnings	0.00090*	0.00097	0.00096	0.00056
	(1.77)	(1.08)	(0.65)	(0.26)
PE Ratio	0.00000	-0.00000	-0.00000	-0.00000
	(0.31)	(-0.18)	(-0.10)	(-0.08)
MTB	0.00319***	0.00369**	0.00465***	0.00548***
	(3.59)	(2.85)	(3.00)	(3.08)
Firm FE	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes
Observations	163,242	163,242	163,242	163,242
Adjusted R-squared	0.079	0.138	0.232	0.303

Table 10: Insider Trading for Peer Firms

This table presents the triple differences regression results on peer firms' insider trading. The dependent variables are *Net Shares* for column (1), *Shares Purchased* for column (2), and *Shares Sold* for column (3). *Shares Purchased* is the total number of shares bought by all insiders of a firm in a given quarter scaled by the firm's total shares outstanding in the previous fiscal year-end. *Shares Sold* is the total number of shares disposed by all insiders of a firm in a given quarter scaled by the firm's total shares outstanding in the previous fiscal year-end. *Net Shares* is *Shares Purchased* minus *Shares Sold*. *Repurchase in 2 Quarters* equals one if a firm repurchases its own shares in the open market within two quarters starting from a given quarter and zero otherwise. All regressions include firm and time fixed effects and robust standard errors are clustered by firm and year. *t*-statistics are presented in parentheses. *, **, *** represents statistical significance at the 10%, 5%, and 1% level.

VARIABLES	(1) Scaled Net Shares	(2) Scaled Shares Purchased	(3) Scaled Shares Sold
Peer 2 Quarters	-0.00035**	0.00006	0.00040***
	(-2.77)	(0.70)	(3.14)
Repurchase in 2 Quarters	-0.00015	0.00001	0.00015
	(-1.01)	(0.09)	(0.90)
Peer 2 Quarters × Repurchase in 2 Quarters	0.00040**	-0.00009	-0.00047***
	(2.57)	(-0.90)	(-2.96)
Restate 2 Quarters	0.00040*	0.00028*	-0.00022
	(1.83)	(1.81)	(-0.86)
Size	0.00036*	-0.00172***	-0.00209***
	(1.82)	(-13.09)	(-8.45)
Previous 6 Months' Return	-0.00292***	0.00029	0.00339***
	(-12.65)	(1.47)	(11.35)
Cash	-0.00007	0.00011**	0.00018**
	(-1.35)	(2.64)	(2.16)
EPS	-0.00011**	-0.00011***	0.00002
	(-2.77)	(-4.78)	(0.43)
Retained Earnings	-0.00004*	0.00006***	0.00010***
	(-1.83)	(4.76)	(4.32)
PE Ratio	-0.00000	0.00000	0.00000
	(-1.02)	(0.09)	(1.11)
MTB	-0.00022***	-0.00026***	-0.00004
	(-3.65)	(-5.31)	(-0.56)
Firm FE	Yes	Yes	Yes
Time FE	Yes	Yes	Yes
Observations	202,914	202,914	202,914
Adjusted R-squared	0.087	0.133	0.112

Table A1: Market Timing

This table presents the marginal effect of stock returns on peer firms' subsequent stock repurchase. The dependent variables in the first three columns are *Repurchase* indicators. The dependent variables in the middle three columns are *Scaled Shares*, while those in columns (7) through (9) are *Scaled Dollar* amount. All dependent variables lead the independent variables by one quarter. *Peer 2 Quarters* equals one if a given firm is in the same product market as the restating firm for 2 quarters starting from the quarter in which the restatement occurs. CAR for a given firm at the quarterly level is the mean value of its CARs to all the financial restatements in that quarter. All regressions include firm and time fixed effects and robust standard errors are clustered by firm and year. *t*-statistics are presented in parentheses. *, **, *** represents statistical significance at the 10%, 5%, and 1% level.

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	$Repurchase_{t+1}$			$Scaled\ Shares_{t+1}$			$Scaled\ Dollar_{t+1}$		
Peer 2 Quarters	0.01210***	0.01210***	0.01210***	0.00014***	0.00014***	0.00014***	0.00012***	0.00012***	0.00012***
	(3.55)	(3.55)	(3.54)	(4.72)	(4.72)	(4.70)	(4.50)	(4.50)	(4.50)
CAR[-1, 3]	-0.00244			-0.00000			0.00001		
	(-0.63)			(-0.11)			(1.15)		
Peer 2 Quarters × CAR[-1, 3]	-0.00346			-0.00013			-0.00002		
	(-0.45)			(-1.46)			(-0.50)		
CAR[-1, 5]		-0.00201			-0.00000			0.00002	
		(-0.57)			(-0.18)			(1.39)	
Peer 2 Quarters × CAR[-1, 5]		-0.00239			-0.00011*			-0.00002	
		(-0.49)			(-1.93)			(-0.47)	
CAR[-1, 7]			-0.00715***			-0.00003*			-0.00001
			(-3.10)			(-1.91)			(-1.41)
Peer 2 Quarters × CAR[-1, 7]			-0.00356			-0.00008			-0.00005
			(-0.45)			(-1.18)			(-1.19)
Restate 2 Quarters	-0.00820*	-0.00820*	-0.00821*	-0.00005	-0.00005	-0.00005	-0.00005	-0.00005	-0.00005
	(-1.93)	(-1.93)	(-1.93)	(-0.94)	(-0.94)	(-0.94)	(-0.87)	(-0.87)	(-0.87)
Size	0.02189***	0.02188***	0.02186***	0.00016***	0.00016***	0.00016***	0.00011***	0.00011***	0.00011***
	(6.75)	(6.75)	(6.72)	(5.47)	(5.47)	(5.45)	(4.17)	(4.18)	(4.16)
Cash	0.00213	0.00213	0.00213	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
	(0.87)	(0.87)	(0.87)	(0.33)	(0.33)	(0.33)	(0.53)	(0.53)	(0.53)
EPS	0.00701***	0.00701***	0.00701***	0.00010***	0.00010***	0.00010***	0.00009***	0.00009***	0.00009***
	(8.86)	(8.85)	(8.82)	(8.64)	(8.63)	(8.62)	(8.90)	(8.90)	(8.89)
Retained Earnings	-0.00107	-0.00107	-0.00107	-0.00001	-0.00001	-0.00001	-0.00001	-0.00001	-0.00001
	(-0.86)	(-0.86)	(-0.86)	(-0.59)	(-0.59)	(-0.59)	(-0.79)	(-0.79)	(-0.80)
PE Ratio	0.00002	0.00002	0.00002	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
	(1.52)	(1.52)	(1.52)	(1.15)	(1.15)	(1.15)	(1.10)	(1.10)	(1.10)
MTB	0.00269**	0.00269**	0.00268**	0.00000	0.00000	0.00000	-0.00002	-0.00002	-0.00002
	(2.17)	(2.17)	(2.15)	(0.04)	(0.04)	(0.04)	(-1.51)	(-1.51)	(-1.52)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	329,304	329,304	329,304	329,304	329,304	329,304	329,304	329,304	329,304
Adjusted R-squared	0.338	0.338	0.338	0.184	0.184	0.184	0.198	0.198	0.198

Table A2: Different Windows for Peer Firms' Repurchase Size in Shares

This table presents the difference-in-differences regression results on peer firms' share repurchases with different windows. The dependent variables are all *Scaled Shares*, the number of shares repurchased by a firm in a quarter divided by its total shares outstanding in the previous fiscal year-end. *Peer First Quarter* equals one if a given firm is in the same product market as the restating firm for the quarter in which the restatement occurs and zero otherwise. *Peer Second Quarter* equals one if a given firm is in the same product market as the restating firm for the second quarter after the restatement and zero otherwise. Similar definitions extends to the other windows. All regressions include firm and time fixed effects and robust standard errors are clustered by firm and year. t-statistics are presented in parentheses. *, **, *** represents statistical significance at the 10%, 5%, and 1% level.

VARIABLES	(1) Scaled Shares$_{t+1}$	(2) Scaled Shares$_{t+1}$	(3) Scaled Shares$_{t+1}$	(4) Scaled Shares$_{t+1}$	(5) Scaled Shares$_{t+1}$
Peer First Quarter	0.00012***				0.00020***
	(4.87)				(4.82)
Peer Second Quarter		0.00002			0.00014***
		(0.69)			(3.17)
Peer Third Quarter			-0.00002		0.00010*
			(-0.49)		(2.04)
Peer Fourth Quarter				-0.00007	0.00004
				(-1.63)	(0.75)
Restate First Quarter	-0.00007				-0.00008
	(-1.20)				(-1.30)
Restate Second Quarter		-0.00001			-0.00003
		(-0.11)			(-0.36)
Restate Third Quarter			-0.00006		-0.00007
			(-1.14)		(-1.30)
Restate Fourth Quarter				-0.00004	-0.00005
				(-0.66)	(-0.89)
Size	0.00016***	0.00016***	0.00016***	0.00016***	0.00016***
	(5.17)	(5.16)	(5.18)	(5.17)	(5.13)
Previous 6 Months' Return	-0.00000	-0.00000	-0.00000	-0.00000	-0.00000
	(-0.07)	(-0.06)	(-0.06)	(-0.06)	(-0.11)
Cash	0.00002	0.00003	0.00003	0.00003	0.00002
	(0.85)	(0.88)	(0.88)	(0.88)	(0.84)
EPS	0.00010***	0.00010***	0.00010***	0.00010***	0.00010***
	(5.95)	(5.92)	(5.92)	(5.92)	(5.97)
Retained Earnings	-0.00002	-0.00002	-0.00002	-0.00002	-0.00002
	(-1.12)	(-1.11)	(-1.11)	(-1.11)	(-1.11)
PE Ratio	0.00000	0.00000	0.00000	0.00000	0.00000
	(0.98)	(1.00)	(1.00)	(1.00)	(0.98)
MTB	-0.00001	-0.00000	-0.00000	-0.00000	-0.00001
	(-0.34)	(-0.28)	(-0.28)	(-0.28)	(-0.37)
Firm FE	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes
Observations	307,772	307,772	307,772	307,772	307,772
Adjusted R-squared	0.179	0.179	0.179	0.179	0.179

Table A3: Different Windows for Peer Firms' Repurchase Size in Dollars

This table presents the difference-in-differences regression results on peer firms' share repurchases with different windows. The dependent variables are all *Scaled Dollar*, the dollar amount repurchased by a firm in a quarter divided by its market value in the previous fiscal year-end. *Peer First Quarter* equals one if a given firm is in the same product market as the restating firm for the quarter in which the restatement occurs and zero otherwise. *Peer Second Quarter* equals one if a given firm is in the same product market as the restating firm for the second quarter after the restatement and zero otherwise. Similar definitions extends to the other windows. All regressions include firm and time fixed effects and robust standard errors are clustered by firm and year. *t*-statistics are presented in parentheses. *, **, *** represents statistical significance at the 10%, 5%, and 1% level.

VARIABLES	(1) Scaled Dollar$_{t+1}$	(2) Scaled Dollar$_{t+1}$	(3) Scaled Dollar$_{t+1}$	(4) Scaled Dollar$_{t+1}$	(5) Scaled Dollar$_{t+1}$
Peer First Quarter	0.00010***				0.00018***
	(4.25)				(4.64)
Peer Second Quarter		0.00002			0.00014***
		(1.06)			(3.54)
Peer Third Quarter			-0.00000		0.00010**
			(-0.10)		(2.25)
Peer Fourth Quarter				-0.00004	0.00006
				(-1.26)	(1.30)
Restate First Quarter	-0.00007				-0.00008
	(-1.35)				(-1.36)
Restate Second Quarter		0.00000			-0.00001
		(0.07)			(-0.14)
Restate Third Quarter			-0.00002		-0.00004
			(-0.50)		(-0.68)
Restate Fourth Quarter				-0.00002	-0.00003
				(-0.51)	(-0.73)
Size	0.00011***	0.00012***	0.00012***	0.00012***	0.00011***
	(4.17)	(4.19)	(4.20)	(4.19)	(4.12)
Previous 6 Months' Return	0.00009***	0.00009***	0.00009***	0.00009***	0.00009***
	(4.00)	(3.99)	(4.00)	(4.00)	(3.97)
Cash	0.00003	0.00003	0.00003	0.00003	0.00003
	(0.98)	(0.99)	(0.99)	(0.99)	(0.96)
EPS	0.00008***	0.00008***	0.00008***	0.00008***	0.00008***
	(5.61)	(5.59)	(5.59)	(5.58)	(5.64)
Retained Earnings	-0.00002	-0.00002	-0.00002	-0.00002	-0.00002
	(-1.27)	(-1.26)	(-1.26)	(-1.26)	(-1.27)
PE Ratio	0.00000	0.00000	0.00000	0.00000	0.00000
	(0.95)	(0.96)	(0.96)	(0.96)	(0.94)
MTB	-0.00003*	-0.00003*	-0.00003*	-0.00003*	-0.00003*
	(-1.91)	(-1.85)	(-1.85)	(-1.85)	(-1.94)
Firm FE	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes
Observations	307,772	307,772	307,772	307,772	307,772
Adjusted R-squared	0.192	0.192	0.192	0.192	0.192

Table A4: Restatement Characteristics in the Intensive Margin (Scaled Shares)

This table presents the difference-in-differences regression results regarding the different characteristics of focal firms' financial restatements. The dependent variables in all columns are *Scaled Shares*, the number of shares repurchased by a firm in a quarter divided by its total shares outstanding in the previous fiscal year-end. The independent variables are *Aggressive Accounting, Fraud, Clerical Error, SEC Investigation, and Board Involvement*, each of which equals one for a peer firm exposed to at least one focal firm's financial restatement that has the corresponding characteristics (e.g., the restatement was due to aggressive accounting) starting in the quarter that the restatement occurs for 2 quarters. All regressions include firm and time fixed effects and robust standard errors are clustered by firm and year. t-statistics are presented in parentheses. *, **, *** represents statistical significance at the 10%, 5%, and 1% level.

VARIABLES	(1) Scaled Shares	(2) Scaled Shares	(3) Scaled Shares	(4) Scaled Shares	(5) Scaled Shares	(6) Scaled Shares
Aggressive Accounting	0.00014***					0.00016***
	(4.68)					(4.31)
Fraud		-0.00006*				-0.00004
		(-1.89)				(-1.11)
Clerical Error			-0.00008			-0.00008
			(-1.46)			(-1.43)
SEC Investigation				-0.00003		-0.00003
				(-0.85)		(-0.85)
Board Involvement					0.00001	-0.00003
					(0.26)	(-0.59)
Restate 2 Quarters	-0.00005	-0.00004	-0.00004	-0.00004	-0.00004	-0.00005
	(-0.88)	(-0.76)	(-0.74)	(-0.76)	(-0.77)	(-0.86)
Size	0.00016***	0.00016***	0.00016***	0.00016***	0.00016***	0.00016***
	(5.15)	(5.17)	(5.17)	(5.17)	(5.19)	(5.17)
Previous 6 Months' Return	-0.00000	-0.00000	-0.00000	-0.00000	-0.00000	-0.00000
	(-0.09)	(-0.05)	(-0.08)	(-0.08)	(-0.06)	(-0.11)
Cash	0.02463	0.02554	0.02599	0.02557	0.02549	0.02513
	(0.85)	(0.88)	(0.89)	(0.88)	(0.88)	(0.87)
EPS	0.00010***	0.00010***	0.00010***	0.00010***	0.00010***	0.00010***
	(5.95)	(5.92)	(5.90)	(5.92)	(5.90)	(5.89)
Retained Earnings	-0.01764	-0.01759	-0.01760	-0.01755	-0.01759	-0.01763
	(-1.11)	(-1.11)	(-1.11)	(-1.11)	(-1.11)	(-1.11)
PE Ratio	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
	(0.98)	(1.00)	(1.00)	(1.00)	(1.00)	(0.99)
MTB	-0.00001	-0.00000	-0.00000	-0.00000	-0.00001	-0.00001
	(-0.35)	(-0.27)	(-0.26)	(-0.27)	(-0.29)	(-0.31)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	307,772	307,772	307,772	307,772	307,772	307,772
Adjusted R-squared	0.179	0.179	0.179	0.179	0.179	0.179

Table A5: Restatement Characteristics in the Intensive Margin (Scaled Dollar)
This table presents the difference-in-differences regression results regarding the different characteristics of focal firms' financial restatements. The dependent variables in all columns are *Scaled Dollar*, the dollar amount repurchased by a firm in a quarter divided by its market value in the previous fiscal year-end. The independent variables are *Aggressive Accounting, Fraud, Clerical Error, SEC Investigation, and Board Involvement*, each of which equals one for a peer firm exposed to at least one focal firm's financial restatement that has the corresponding characteristics (e.g., the restatement was due to aggressive accounting) starting in the quarter that the restatement occurs for 2 quarters. All regressions include firm and time fixed effects and robust standard errors are clustered by firm and year. *t*-statistics are presented in parentheses. *, **, *** represents statistical significance at the 10%, 5%, and 1% level.

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	Scaled Dollar	Scaled Dollar	Scaled Dollar	Scaled Dollar	Scaled Dollar	Scaled Dollar
Aggressive Accounting	0.00012***					0.00015***
	(4.57)					(4.56)
Fraud		-0.00004				-0.00001
		(-1.06)				(-0.20)
Clerical Error			-0.00007			-0.00007
			(-1.58)			(-1.44)
SEC Investigation				-0.00004		-0.00003
				(-1.19)		(-0.90)
Board Involvement					-0.00002	-0.00007
					(-0.62)	(-1.43)
Restate 2 Quarters	-0.00004	-0.00003	-0.00003	-0.00003	-0.00003	-0.00004
	(-0.77)	(-0.66)	(-0.65)	(-0.66)	(-0.65)	(-0.74)
Size	0.00011***	0.00012***	0.00012***	0.00012***	0.00012***	0.00011***
	(4.15)	(4.19)	(4.19)	(4.19)	(4.22)	(4.19)
Previous 6 Months' Return	0.00009***	0.00009***	0.00009***	0.00009***	0.00009***	0.00009***
	(3.97)	(4.01)	(3.96)	(3.97)	(3.98)	(3.94)
Cash	0.02664	0.02742	0.02787	0.02747	0.02753	0.02717
	(0.97)	(1.00)	(1.01)	(1.00)	(1.00)	(0.99)
EPS	0.00008***	0.00008***	0.00008***	0.00008***	0.00008***	0.00008***
	(5.62)	(5.59)	(5.57)	(5.58)	(5.56)	(5.55)
Retained Earnings	-0.01905	-0.01900	-0.01902	-0.01896	-0.01898	-0.01902
	(-1.26)	(-1.26)	(-1.26)	(-1.26)	(-1.26)	(-1.26)
PE Ratio	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
	(0.94)	(0.96)	(0.96)	(0.96)	(0.97)	(0.96)
MTB	-0.00003*	-0.00003*	-0.00003*	-0.00003*	-0.00003*	-0.00003*
	(-1.92)	(-1.85)	(-1.83)	(-1.84)	(-1.84)	(-1.87)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	307,772	307,772	307,772	307,772	307,772	307,772
Adjusted R-squared	0.192	0.192	0.192	0.192	0.192	0.192

Table A6: Accounting Quality in Likelihood of Earnings Management

This table presents the subsample analysis on the earnings quality within peer firms. The dependent variables for earnings quality are the *High Earnings Quality* of a firm, defined as one if the firm's actual EPS is *not* within 2 cents above the EPS target in a given quarter, and zero otherwise. Independent variable of interest is *Repurchase*, which equals one if a firm spends a non-zero amount repurchasing its shares in the open market in a given quarter, and zero otherwise. The regressions compare the earnings quality between peer firms with share repurchases and peer firms without share repurchases. All regressions include firm and time fixed effects and robust standard errors are clustered by firm and year. *t*-statistics are presented in parentheses. *, **, *** represents statistical significance at the 10%, 5%, and 1% level.

VARIABLES	(1) t+1	(2) t+2	(3) t+3	(4) t+4
	High Earnings Quality for Peer 2 Quarters = 1			
Repurchase	0.01847***	0.01659***	0.01661***	0.01882***
	(3.48)	(3.11)	(3.13)	(2.97)
Size	0.06452***	0.07074***	0.06666***	0.06184***
	(10.16)	(11.89)	(9.83)	(9.97)
Previous 6 Months' Return	0.01240***	0.01685***	0.01739***	0.01632***
	(3.70)	(4.37)	(3.88)	(3.74)
Cash	0.00342	0.00552	0.00520	0.00627
	(0.84)	(1.31)	(1.12)	(1.32)
EPS	0.00263**	0.00353**	0.00349**	0.00373**
	(2.22)	(2.64)	(2.33)	(2.65)
Retained Earnings	-0.00246	0.00067	0.00228	0.00247
	(-1.38)	(0.36)	(1.22)	(1.28)
PE Ratio	0.00005*	0.00004	0.00004	0.00004
	(1.82)	(1.41)	(1.10)	(1.02)
MTB	0.00828***	0.01061***	0.01144***	0.01166***
	(3.36)	(5.22)	(5.33)	(5.41)
Firm FE	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes
Observations	163,242	163,242	163,242	163,242
Adjusted R-squared	0.507	0.427	0.393	0.377

Table A7: Peer Firm Insider Trading on Repurchase Size

This table presents the triple differences regression results on peer firms' insider trading. The dependent variables are *Net Shares* for columns (1) and (4), *Shares Purchased* for columns (2) and (5),and *Shares Sold* for columns (3) and (6). *Shares Purchased* is the total number of shares bought by all insiders of a firm in a given quarter scaled by the firm's total shares outstanding in the previous fiscal year-end. *Shares Sold* is the total number of shares disposed by all insiders of a firm in a given quarter scaled by the firm's total shares outstanding in the previous fiscal year-end. *Net Shares* is *Shares Purchased* minus *Shares Sold*. *Scaled Shares (Dollar) in 2 Quarters* is the sum of *Scaled Shares (Dollar)* repurchased by a firm in two quarters starting from a given quarter. All regressions include firm and time fixed effects and robust standard errors are clustered by firm and year. *t*-statistics are presented in parentheses. *, **, *** represents statistical significance at the 10%, 5%, and 1% level.

VARIABLES	(1) Net Shares	(2) Shares Purchased	(3) Shares Sold	(4) Net Shares	(5) Shares Purchased	(6) Shares Sold
Peer 2 Quarter	-0.00031**	-0.00001	0.00030**	-0.00029**	-0.00001	0.00028**
	(-2.73)	(-0.07)	(2.64)	(-2.59)	(-0.09)	(2.48)
Scaled Shares in 2 Quarters	-0.00570	0.00076	0.00657			
	(-0.87)	(0.25)	(0.95)			
Peer 2 Quarters × Scaled Shares in 2 Quarters	0.02248***	0.00018	-0.02351***			
	(3.54)	(0.04)	(-3.71)			
Scaled Dollar in 2 Quarte				-0.00081	-0.00151	-0.00050
				(-0.13)	(-0.56)	(-0.07)
Peer 2 Quarters × Scaled Dollar in 2 Quarters				0.01944**	0.00058	-0.02057**
				(2.76)	(0.14)	(-2.84)
Restate 2 Quarters	0.00037	0.00028*	-0.00020	0.00037	0.00028*	-0.00020
	(1.62)	(1.85)	(-0.73)	(1.62)	(1.85)	(-0.72)
Size	0.00028	-0.00177***	-0.00205***	0.00028	-0.00177***	-0.00205***
	(1.29)	(-13.48)	(-7.86)	(1.29)	(-13.45)	(-7.87)
Previous 6 Months' Return	-0.00297***	0.00026	0.00341***	-0.00297***	0.00026	0.00341***
	(-12.45)	(1.34)	(10.91)	(-12.46)	(1.34)	(10.92)
Cash	-0.00006	0.00011**	0.00018*	-0.00006	0.00011**	0.00018*
	(-1.20)	(2.56)	(2.05)	(-1.20)	(2.56)	(2.05)
EPS	-0.00012**	-0.00011***	0.00003	-0.00012**	-0.00011***	0.00003
	(-2.80)	(-4.77)	(0.66)	(-2.80)	(-4.74)	(0.68)
Retained Earnings	-0.00004*	0.00007***	0.00011***	-0.00004*	0.00007***	0.00011***
	(-1.99)	(4.66)	(4.65)	(-1.97)	(4.66)	(4.60)
PE Ratio	-0.00000	0.00000	0.00000	-0.00000	0.00000	0.00000
	(-0.83)	(0.61)	(1.14)	(-0.83)	(0.61)	(1.14)
MTB	-0.00022***	-0.00026***	-0.00004	-0.00022***	-0.00026***	-0.00004
	(-3.34)	(-5.05)	(-0.59)	(-3.32)	(-5.06)	(-0.61)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	190,990	190,990	190,990	190,990	190,990	190,990
Adjusted R-squared	0.090	0.132	0.115	0.090	0.132	0.115