ESSAY ON CAPITAL MARKET REACTIONS TO A NEW ACCOUNTING STANDARD UPDATE FOCUSING ON THE INSURANCE INDUSTRY

by

DAN YANG

(Under the Direction of James Carson)

ABSTRACT

In my dissertation, I study a new accounting standard update and its impact on U.S. public insurers' financial reporting. The Financial Accounting Standard Board (FASB) recently issued Accounting Standards Update No. 2016-01, which requires firms to report unrealized gains and losses on available-for-sale (AFS) equity securities in net income, thus reducing firms' ability to manage or smooth earnings. Previously, these gains and losses were recorded in other comprehensive income and were not recognized in net income until the investments were sold. My dissertation examines the capital market consequences associated with this reporting change. Three questions are addressed. The first question is, whether this earnings reclassification changes the informativeness of financial reporting? Using data from U.S. public insurers, we find a significant decrease in firms' earnings response coefficient (ERC) after the application of this new standard, and that the mechanism explaining this reduction in ERC is a decrease in earnings persistence. This result suggests that, after the reporting change, earnings less fully reflect the information investors use when revising their beliefs about firm value around earnings announcements. However, ERC is only a reflection of the information usefulness of earnings. My second question is, whether the decrease in ERC leads to an increase in information

asymmetry and investors' perception of firm riskiness. Our evidence indicates no significant changes in investor assessment of overall firm risk following the reporting change. This result suggests that investors appear to understand that the reduction in earnings persistence is not reflective of a change in firm risk. The third question I addressed is, whether the classification of unrealized gains/losses into net income changes financial analysts' forecast accuracy. I find evidence that there is no significant change in analysts' forecast accuracy. Overall, these results indicate that the classification of unrealized gains/losses on AFS equity securities into net income reduces the persistence of earnings and reduces the extent to which earnings reflect the information investors use to revise their beliefs about firm value around earnings announcements, and that investors appear to recognize that these reductions in persistence are not a reflection of the firm performance becoming more volatile.

INDEX WORDS: ERC, Information Content, Earnings Reclassification, Information Asymmetry, Operational Risks

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Chapter 1

Introduction

In my dissertation, I study a new accounting standard update and its impact on U.S. public insurers' financial reporting. In 2016, the Financial Accounting Standard Board (FASB) issued accounting standard update FASB No. 2016-01 (ASU 2016-01). This new standard requires firms to report unrealized gains and losses on available-for-sale (AFS) equity securities in net income[1]. Previously, these gains and losses were reported in other comprehensive income and were not recognized in net income until the investments were sold. This accounting standard update most likely impacts financial institutions, especially property and casualty insurers due to their relatively large equity holdings. The earnings reclassification required by this rule update also signals that the financial accounting standards setters moved one more step further toward the fair value accounting.

There have been significant discussions in the financial accounting field about historical cost accounting and fair value accounting. Historical cost accounting is based on an asset's original purchasing price and is considered more reliable, while fair value accounting uses the most current market price and provides more relevant information about assets valuation. For financial instruments, such as common stocks and bonds with prices that change frequently, choosing an appropriate accounting method must face the trade-off between reliability and relevancy. Accounting treatment of financial instruments has experi-

[1] Equity investments accounted for under the equity method of accounting or those that result in consolidation of the investee are exempt from this requirement.

enced three major stages. In 1993, FASB issued FAS 115 which allows firms to record certain financial assets at fair value, but the fair value changes bypass the income statements and were recognized in the equity statement. In 1997, FASB issued FAS 130 which gives firms the flexibility to recognize fair value changes on AFS securities into other comprehensive income. In 2011, FASB issued the accounting standard update ASU2011-05, which eliminates the flexibility of the financial reporting on AFS securities and requires firms to record those fair value changes into other comprehensive income statement. In 2016, FASB moved one step forward toward the full fair value accounting and require firms must recognize fair value changes on AFS equity securities into net income. It is meaningful to investigate how this movement toward full fair value accounting will affect the financial institution's financial reporting, and how the capital market will react to this new earnings reporting standard.

In my dissertation, I addressed three major questions regarding this rule update. The first and also very intuitive question is, whether this rule update provides more useful information to financial statement users? Although classifying fair value changes on AFS equity investments into net income reflects the real investment performance for the current fiscal period, considering the wild security price distribution, adding transitory unrealized capital gains and losses into net income also increases the volatility of earnings and exaggerates the divergence between earnings and cash flows. To evaluate which effect dominates, it is important to investigate whether this new accounting standard provides more useful information for financial statement users on decision making. Using a difference-in-differences approach, I find that the earnings reclassification reduced the informativeness of earnings measured by earnings response coefficient (ERC), and this decrease in ERC is caused by the decrease in earnings persistence, or increase in earnings volatility. In another way, the increased volatility in earnings provides less useful information to help the capital market participants to predict firms' future performance, and thus, they tend to respond less to the earnings announcement.

In my first question, I focus purely on the capital market reaction to the earnings announcement. It is important to understand that firms have many other ways to convey information to the capital market except earnings reports. In my second question, I extend my research to a broader scope and ask whether

this rule update increases the overall information asymmetry, and whether investors view the increased volatility in earnings as a reflection of an increase in the operational risk of firms. In my second test, I use bid-ask spread to measure the information asymmetry, and use three different variables (Beta, standard deviation of stock return, and implied volatility of options) to measure the operational risk. My results indicate that there is no significant change in information asymmetry, as well as the investors' perception of firm risk. This finding suggests that investors appear to understand that the reduction in earnings persistence caused by earnings reclassification is not reflective of a change in firms' operation, and thus a change in firm risk. The unchanged information asymmetry also indicates that managers may realize the decreased informativeness in the earnings reports and reimburse the information loss in other ways.

Considering the increased volatility in earnings, naturally, I asked in my third question whether this rule update makes it harder for financial analysts to forecast earnings. I find that this earnings reclassification does not change analysts' forecast accuracy significantly.

This study contributes primarily to the literature on the consequences of the accounting treatment for available-for-sale (AFS) securities, as well as the regulatory debate about historical accounting versus fair value accounting treatment. This paper also documents a weak relationship between financial reporting quality and the overall information asymmetry. The findings in this paper provide evidence that investors are rational and able to filter out noisy information when making their investment decisions.

Chapter 2

Literature review

2.1 Fair value accounting on financial instruments

Historical cost accounting and fair value accounting are two methods that are currently used by public firms to record the value of assets listed on a firm's financial statements. Historical cost measures the value of an asset at the original purchasing cost, which is considered more reliable and conservative compared to fair value accounting. On the other hand, fair value accounting measures the current market value of assets, which provides more timely information about the value of assets and is considered more relevant.

There were significant debates over asset valuation methods since the first day of the creation of the Financial Accounting Standard Board (FASB) (Emerson et al., 2010), but until 1993, fair value accounting was the first time formally introduced by FASB. In 1993, FASB issued the Financial Accounting Standards No. 115 (FAS 115), which allows firms to measure certain security investments at fair value, with fair value changes recognized in earnings or the statement of shareholders' equity. Specifically, if a firm classifies its investments as trading securities, then the unrealized fair value changes on these trading securities are recognized in the statement of earnings, and if the firm classifies its investments as available-for-sale (AFS) securities, then the unrealized fair value changes on the AFS securities were recognized into other comprehensive income (OCI) and reported on the statement of equity. This "intent-based" accounting model was widely exploited by managers because managers have an opportunity to declare their intent with an investment based on the accounting treatment they prefer, rather than the accounting treatment

that best reflects the underlying economics of the transaction (Barth et al., 2017; A. Beatty et al., 1995; A. L. Beatty et al., 2002; J. H. Collins et al., 1995). Managers may classify an investment as AFS to avoid the impact of its fair value changes on earnings. Indeed, following the AFS 115, a large majority of most firms' equity investments were classified as AFS rather than trading securities.

The FAS 115 allowed the unrealized fair value changes to bypass the income statements, but later, FASB moved one step forward to allow those unrealized capital gains and losses to get into the income statements. In 1997, FASB issued FAS 130, which gave firms options to include unrealized gains and losses on AFS into income statements. Compared with the FAS 115, FAS 130 introduced the opportunities for firms to choose how they want the unrealized gains and losses on AFS to affect their financial reporting. Unsurprisingly, this flexibility in financial reporting was widely used by managers to achieve their financial reporting purpose (Hunton et al., 2006; Y.-J. Lee et al., 2006b).

To improve the comparability and transparency in financial statements, in 2011, FASB issued Accounting Standard Update (ASU) 2011-05. The amendment eliminates the option to present components of other comprehensive income as part of the statement of changes in stockholders' equity, and all unrealized gains and losses on AFS must be reported in other comprehensive income statements. To future improve the information usefulness of financial reporting and reduce the complexity of accounting for financial instruments, FASB issued another accounting standard update ASU 2016-01 in 2016. The ASU 2016-01 require firms to reclassify unrealized gains and losses on AFS from OCI to Net Income, This new accounting rule update eliminates the classification categories of equity investments and their differing treatments on fair value changes. My dissertation focus on the impact of this earrings reclassification on public insurers' financial reporting.

Whether the ASU 2016-01 will improve the informativeness of financial reporting depends on how financial statements users view the net income and the other comprehensive income differently. Regulators, financial statement users, and academics have historically debated using net income versus OCI as measures of a firm's financial performance. One group of studies argues that investors tend to rely less on OCI to forecast future firm performance and, therefore, suggests that OCI has less of an impact on

stock price (e.g., Chambers et al., 2007; Cheng et al., 1993; Dhaliwal et al., 1999). Conversely, aside from measuring financial performance, prior studies also examine earnings management behavior, such as firms manipulating reported OCI, especially via unrealized gains and losses (e.g., Hirst and Hopkins, 1998; Y.-J. Lee et al., 2006b. The "cherry-picking" sale behavior documented by previous literature suggests that capital markets emphasize net income over OCI. Thus, including transitory items into net income may not increase the information content of reported earnings. Instead, rather than increasing decision-useful information content in earnings, including fair value changes into net income may add noise to the financial statements by combining more regular and predictable components of net income with less persistent and transitory fair value changes, as suggested by critics of update ASU 2016-01. Other studies, however, document that OCI is more closely associated with firm risk and future returns. These studies also suggest that investors use this information to adjust their expected return (e.g., Hodder et al., 2006; Maines and McDaniel, 2000). If investors have already captured the information reflected in these transitory items, including the fair value changes that were previously recognized through unrealized gains and losses in OCI, then the earnings reclassification required by ASU 2016-01 should not substantially change investor expected returns. In this case, the new accounting standard would not improve the information content of the firm's earnings reports.

Here, I provide a short summary of each paper discussed in this section.

2.1.1 Cheng, C. S. A., Cheung, J. K., Gopalakrishnan, V. (1993)

Cheng et al., 1993 compares the usefulness of three different earnings measurements - operating income, net income, and comprehensive income - in explaining a firm's stock return. Using public firms' data from the year 1972 to 1989, they compare the goodness-of-fit (R^2) of the stock return-earnings relationship for each measure of earnings performance. They find that operating income explains most of the stock returns and net income dominates comprehensive income in information content. Their study suggests that items included in other comprehensive income, such as unrealized gains and losses, are ignored by investors when making their investment decisions.

2.1.2 Collins, J. H., Shackelford, D. A., Wahlen, J. M. (1995)

Focusing on the bank industry, J. H. Collins et al., 1995 investigated the correlation between a firm's capital-raising decision and its financial reporting. Using 160 banks' annual data from 1989 to 1991, they find a negative relationship between banks' earnings and security gains and losses, which suggests that banks tend to time sell their securities to smooth earnings. In addition, they also find that the securities gains and losses are negatively correlated with banks' capital position, which suggests that banks also time sell their securities to reach their target capital position.

2.1.3 Beatty, A., Chamberlain, S. L., Magliolo, J. (1995)

Following J. H. Collins et al., 1995, A. Beatty et al., 1995 also uses commercial banks to investigate how banks change the timing and magnitude of transactions to achieve their capital and earnings goals. A. Beatty et al., 1995 assumes that bank managers have multiple ways to achieve their financial reporting goals or reach the target capital structure, but differentiated from previous studies, this paper assumes that those decisions are made simultaneously.

Considering that managers make discretionary transactions simultaneously, they use a two-stage and three-stage instrumental variables approach to analyze the relationship between the changes in capital ratio or earnings and investment securities gains. Using data from 1987 to 1990 and 638 bank-year observations, they find that commercial banks use securities gains to achieve capital targets and earnings goals.

2.1.4 Hirst, D. E., Hopkins, P. E. (1998)

Hirst and Hopkins, 1998 investigates how firms exploit the financial reporting flexibility imposed by FAS 130 to reach their financial reporting goals. Specifically, they compare firms that report comprehensive income in the income statements (IS) and firms that report comprehensive income in the statement of changes in equity (SEC), they find that firms actively managing their earnings are more likely to report comprehensive income in the statement of changes in equity. In their study, they find that a clear display

of CI and its components in the income statement makes earnings management through the sale of AFS more transparent, and results in equal stock price judgments for firms that manage earnings and firms that not engage in earnings management.

2.1.5 Dhaliwal, D., Subramanyam, K. R., Trezevant, R. (1999)

Dhaliwal et al., 1999 examine the explanatory and predicting power of net income and comprehensive income. They claim that net income has a stronger explanatory power on the stock price, and can better predict firms' future cash flow and earnings. But they also find that market securities adjustment reflected in other comprehensive income improves the association between comprehensive income and stock return.

Using a broad sample that contains all 1994 and 1995 public firm-years observations (11,425 firm-years), Dhaliwal et al., 1999 first tests the relationship between stock return and net income, comprehensive income, and different components of other comprehensive income. They find that comprehensive income is not a superior measure of firm performance compared with net income. Then, they examine the association between different earnings measures and future operating cash flow and stock price. Consistent with the previous finding, they find that comprehensive income is less strongly correlated with firm value and future cash flow.

2.1.6 Maines, L. A., McDaniel, L. S. (2000)

Using an experiment that enrolled 95 M.B.A. students without professional investment experience, Maines and McDaniel, 2000 examines whether and how alternative financial reporting affects nonprofessional investors' information processing with comprehensive income, specifically, the unrealized gains and losses on AFS. By presenting different financial statements to the experimenters, they find that presenting other comprehensive income items in an income statement improves both professional and nonprofessional investors' judgments.

2.1.7 Beatty, A. L., Ke, B., Petroni, K. R. (2002)

A. L. Beatty et al., 2002 investigate the earnings management behaviors in the bank industry. Using both public and private banks samples from 1986 to 1998, they find that banks use timing sales of securities and loan loss provisions to manage earnings and reach different earnings reporting goals. They argue that compared with private banks, public banks have stronger incentives to maintain a certain pattern of reported earnings. They find that public banks tend to report fewer small earnings declines, and are more likely to use security gain realization to avoid small earnings declines.

2.1.8 Hodder, L. D., Hopkins, P. E., Wahlen, J. M. (2006)

Following Cheng et al., 1993 and Dhaliwal et al., 1999, Hodder et al., 2006 also studies the explanatory power of different earnings measurements. Rather than investigating the variate explanatory powers on stock return, security price, or future earnings performance, this paper focuses on the risk relevance of three income measures: net income, comprehensive income, and a constructed measure of full-fair-value income.

Using a sample of 202 U.S. commercial banks from 1996 to 2004, Hodder et al., 2006 calculates the standard deviation of the different earnings measures and tests their relationship with the market-based measures of firms' risk, such as market-model beta, short-term/long-term interest-rate beta, the standard deviation of raw return, and derivatives exposures. Their results suggest that comprehensive income volatility reflects incremental factors of risk that are not captured by the volatility of net income.

2.1.9 Hunton, J. E., Libby, R., Mazza, C. L. (2006)

By running an experiment, Hunton et al., 2006 argues that a more transparent format for reporting comprehensive income (reporting other comprehensive income items in the income statement rather than in change in equity statement) deduces earnings management through timing sale of AFS securities. In their experiment, 62 financial executives and chief executive officers decide which AFS securities to

sell from an investment portfolio. They find that firm executives tried to manage earnings through the realization of unrealized gains and losses on AFS securities, however, they are less likely to choose to manage earnings by timing the sale of AFS securities when a more transparent earnings report format is chosen.

2.1.10 Lee, Y.-J., Petroni, K. R., Shen, M. (2006)

Y.-J. Lee et al., 2006b studies the "cherry-picking" sale behavior in the insurance industry. This paper examines the financial reporting decisions of 82 public property-liability insurance firms following FAS 130. They first demonstrate that public insurers use unrealized gains and losses to smooth earnings. They continuously find evidence that insurers that engage in "cherry-picking" sales are more likely to report the other comprehensive income items in the statement of equity. Their results are consistent with previous studies that reporting other comprehensive income in the equity statement is less transparent than reporting in the income statement.

2.1.11 Barth, M. E., Gomez-Biscarri, J., Kasznik, R., López-Espinosa, G. (2017)

Using a more recent sample of US commercial banks from 1996 to 2011, Barth et al., 2017 studies the "cherry-picking" sale in the bank industry. Similarly, they find that banks use realized gains and losses on AFS securities to smooth earnings and increase low regulatory capital.

Compared with previous studies, Barth et al., 2017 investigates different "cherry-picking" sale strategies used by firms with different earnings management goals. Specifically, banks with both positive and negative earnings smooth earnings by timing the sale of AFS securities. They find that banks with negative earnings take big baths and realize more unrealized losses, and smooth earnings to a greater extent when they have more unrealized gains.

2.2 Informativeness of financial reporting

Prior studies have defined "information" as a change in expectation about the outcome of an event. Within the context of this study, a firm's earnings report is said to have information content if it leads to a change in investors' assessments of the probability distribution of future returns or price, such that there is a change in the equilibrium value of the current market price (W. H. Beaver, 1968). Practically, we measure information by arguing that a firm's earnings report has information content if it leads to changes in investors' forecasts about future returns and stock prices. Considerable research focuses on the relationship between security returns and unexpected earnings to assess the information content of the latter. Typically, inferences regarding the information content of earnings are based on the statistical significance of the slope coefficient β and explanatory power (R^2) of the following linear model, which is estimated either cross-sectionally or over time:

$$CAR_{it} = \beta_0 + \beta_1 UE_{it} + \epsilon_{it} \tag{2.1}$$

where CAR_{it} is a measure of risk-adjusted return for security i accumulated over period t, UE_{it} is an appropriately-scaled measure of unexpected earnings (such as the difference between the realized earnings and the median of analyst earnings forecast), and it is a random disturbance term assumed to be distributed $\sim \mathcal{N}(0,\ \sigma^2)$. The slope coefficient, β, is called the earnings response coefficient (ERC) (D. W. Collins and Kothari, 1989). The ERC measures the response of stock prices to accounting earnings announcements. While early studies estimated ERCs that were the same across all firms, subsequent studies provide evidence that ERCs vary cross-sectionally (e.g., D. W. Collins and Salatka, 1993; Easton and Zmijewski, 1989; Gipper, Leuz, and Maffett, 2019). Historically, the unexpected earnings and returns relationship has generally been investigated using an event study methodology analyzing the relationship between earnings announcements and revisions made by investors in their expectations, as revealed by security price changes measured in a short time period around the earnings announcement (typically two to five days).

Prior research on earnings informativeness suggests that ERCs change in the presence of additional investor uncertainty. The direction of change depends on the type of uncertainty. New information that reduces uncertainty about a firm's future performance is typically associated with increased earnings response coefficients (e.g., Barron and Stuerke, 1998; Christensen, 2002), while new information that leads to additional noise in the earnings report typically is associated with decreased ERCs (e.g., D. W. Collins and Salatka, 1993; Ferri et al., 2018).

Previous literature also documents a smaller ERC on transitory earnings reported in the financial statement (e.g., Abarbanell and Lehavy, 2003; D. W. Collins and Salatka, 1993). One potential explanation for the weak relationship documented in these studies between transitory earnings and stock returns is that the capital markets do not expect those earnings changes to be persistent and correlated with future cash flows, thus leading to the smaller price adjustment. Based on this, we would expect the new accounting standard update to decrease investor responsiveness (via the ERC) to earnings reports.

The short summary of papers discussed in this section is as follows.

2.2.1 Easton and Zmijewski, 1989

Easton and Zmijewski, 1989 argues that previous papers studying ERC assume implicitly that ERCs are the same for all firms. This paper builds a conceptual framework and empirically tests the variation of ERCs across firms.

Easton and Zmijewski, 1989 argues stock price equals the discounted value of expected dividends, and if the information released in earnings announcements results in revisions of expected dividends, then the capital markets will react to earnings announcements and stock prices will change. The magnitude of reaction depends on the magnitude of revisions. They empirically tested the variations of revisions using data from 1960 to 1980 that are available in Moody's Handbook of Common Stocks, and concluded that ERC is positively correlated with firm's earnings persistence and firm size.

2.2.2 D. W. Collins and Salatka, 1993

D. W. Collins and Salatka, 1993 extends the literature on factors affecting earnings response coefficients. This paper compares the differences on ERC between multinational and non-multinational companies and finds that multinational companies have relatively small ERCs.

D. W. Collins and Salatka, 1993 utilizes the different foreign currency accounting treatments under FAS No.8 and FAS No. 52 to test the variations in ERC across multinational and non-multinational firms. They argue that FAS No.8 introduced artificial volatility into earnings, resulting in inconsistency among earnings and economic reality, producing noisy earnings reports which reduces the ERC. Choosing 30 multinational firms from 1977 to 1981, they tested the ERCs for those firms and fitted non-multinational firms under the framework of FAS No.8 and FAS No.52. D. W. Collins and Salatka, 1993 finds that the ERCs for multinational firms under the FAS No.8 tend to be smaller compared with non-multinational firms. This paper suggests that financial reporting standard that produces noisy earnings tend to reduce the ERCs.

2.2.3 Barron and Stuerke, 1998

Barron and Stuerke, 1998 studies how dispersion in analysts' earnings forecasts affects the earnings response coefficient. They argue that analysts' forecast dispersion reflects uncertainty about firms' future performance. The reflected uncertainty results in higher demand for more information and will affect the magnitude of price reactions around the earnings announcements. Using data from 1990 to 1994, Barron and Stuerke, 1998 finds that forecast dispersion is positively correlated with the ERC.

2.2.4 Christensen, 2002

Focusing on the property and casualty insurance industry, this paper studies whether catastrophic events may change the uncertainty about insurers' future performance and thus change the magnitude of price reaction to the earnings announcement. Christensen, 2002 differentiates the uncertainty due to

an exogenous event from the uncertainty caused by noisy financial reporting, and finds that following a catastrophic event that causes high uncertainty about firms' future prospects, investors find earnings announcements are more useful and thus react strongly to earnings announcements.

2.2.5 Gipper, Leuz, and Maffett, 2019

Gipper, Leuz, and Maffett, 2019 examines the effect of public audits on price reactions following earnings announcements. The authors argue that financial statements audited by large public auditors have higher credibility and thus strengthen the responses of investors to signals. This paper compares the ERCs of firms with auditors that are subject to the Public Company Accounting Oversight Board (PCAOB) regime to the ERCs of firms with auditors outside the PCAOB regime. They find that firms with auditors regulated by PCAOB have higher ERCs than firms audited by non-PCAOB auditors. Their results suggest that public audit oversight can increase the price reaction to earnings announcements.

2.3 Bid-ask spread

Bid-ask spread is set by the broker or dealer of the security and measured by the difference between the lowest ask price at which the dealer would like to sell the security and the highest bid price at which the dealer would like to buy the same security. Previous literature on bid-ask spread suggests (e.g., Amihud and Mendelson, 1980; Copeland and Galai, 1983; Glosten and Harris, 1988; Glosten and Milgrom, 1985; Ho and Stoll, 1981) that bid-ask spread is composed of two types of costs bear by the dealer: (1) Transitory cost, including inventory holding cost and transaction processing cost. Typically, the transitory cost's effect on security price is independent of the underlying value of the security. Inventory holding cost is the cost borne by the dealer via carrying securities in order to meet the future demand, it is affected by the holding period (Amihud and Mendelson, 1986). Transaction processing cost is associated with setting the trade and cleaning transactions (Tinic, 1972). (2) Adverse selection cost, which arises when dealer trades with unidentified investors with superior information. Adverse selection cost is caused by

the existence of asymmetric information between the security brokers and investors, those investors who have superior information about the true value of the underlying security would like to trade with the dealer only when it is beneficial for them. The first paper studying the adverse selection component of the bid-ask spread is Bagehot, 1971, the following research by Copeland and Galai, 1983; Glosten and Harris, 1988; Glosten and Milgrom, 1985 made adjustments to the original model and extended the model by adding subcomponents of asymmetric information cost.

Our paper studies the impact of a new accounting rule update on the bid-ask spread by focusing our analysis on its impact on information asymmetry. The theory of the asymmetric information component of bid-ask spread suggests that the dealer of security knows that he will suffer a loss by trading with investors with superior information, but also benefits from trading with investors who are uninformed. The dealer sets the bid-ask spread so that the expected gain is greater than the loss, and the higher the asymmetric information, the wider of the bid-ask spread.

Significant empirical studies have examined the determinants of the bid-ask spread. C. M. C. C. M. Lee and Yahn, 1997 summarized those studies and show that securities traded on an active market have a lower bid-ask spread. Specifically, spreads are lower for securities with large trading volumes and multiple competing dealers (e.g., Barnea and Logue, 1975; Branch and Freed, 1977; Demsetz, 1968; Stoll, 1978; Tinic and West, 1972). Another stream of empirical research (e.g., Brennan and Subrahmanyam, 1995; Chiang and Venkatesh, 1988) tested the impact of asymmetric information on the bid-ask spread. The monitoring role of institutional ownership has been approved by previous empirical studies (e.g., Healy and Palepu, 2001; Ramalingegowda and Yu, 2012), similarly, financial analysts have the expertise and resources to process the disclosed information and thus reduce the information asymmetry between the firm and investors. Chung et al., 1995 finds a negative relationship between analyst following and market liquidity, which is attributed to analysts following those firms with high information asymmetry. Roulstone, 2003 documents a positive relation between analyst characteristics and market liquidity, his empirical results consistent with analysts reducing information asymmetry by providing public information to market participants.

Building on the asymmetric information component of bid-ask spread, several researchers started to inquire how would financial reporting affect the information asymmetry, and thus affect the bid-ask spread, and they reached competing conclusions regarding whether accounting disclosure decreases the information asymmetry. Verrecchia, 1982 sets a mathematical model to assess the consequences of public disclosure and found that increased public disclosure reduces private incentives to acquire information. Lundholm, 1991 suggests that accounting disclosure reduces the aggregate uncertainty and thus improves the stock market efficiency, but the information asymmetry may increase between the traders having common but imperfect information and other uninformed traders. O. Kim and Verrecchia, 1994 considers the investors' information processing capability and model the information asymmetry on the earnings announcement date. Their results show that due to the diversified information processing abilities, earnings announcements may increase the information asymmetry and thus increase the bid-ask spread. Those researchers propose that although accounting disclosure reduces the searching cost, it does not necessarily reduce the information asymmetry. Whether earnings announcement reduces information asymmetry depends on whether investors are actively searching for private information and have the ability to process disseminated information. Empirically, C. M. Lee et al., 1993 uses intraday data to find an increase in spreads one day around the earnings announcement. Correspondingly, Brooks, 1994 shows that around the earnings announcement, both the bid-ask spread and its components have significant changes, indicating the earnings announcement reduces the information asymmetry. Consistent with O. Kim and Verrecchia, 1994 model which predicts an increase in spreads around earnings announcement due to investors' disparate information processing capability, Yohn, 1998 documents a gradually increase in spreads in the four days prior to earnings announcement and continues until seven to ten days after the earnings announcement.

Beyond those findings, some researchers also examined how the accounting information quality may change the information asymmetry captured by bid-ask spread, those empirical studies suggest that better accounting information quality is associated with decreased bid-ask spread. Raman and Tripathy, 1993 argues that compared with the historical cost, present-value valuation provides relevant information in the

context of firms with impaired or appreciated assets, thus providing better accounting information to investors. Their results show that present value disclosure reduces the bid-ask spread. Consistent with prior research by Baldwin, 1984; Swaminathan and Weintrop, 1991 indicating that detailed segment disclosure reduces information asymmetry, Greenstein and Sami, 1994 provides evidence that firms reporting segment data have a significant downward shift in the spread. Most importantly, evidence shows that earnings quality, specifically, earnings predictability greatly affects the bid-ask spread. Maddala and Nimalendran, 1995 finds significant effects of earnings surprises on the bid-ask spread. Comparably, Affleck-Graves et al., 2002 shows evidence that firms with more predictable earnings experience a lower bid-ask spread before the earnings announcement. Using an accruals-based measure of earnings quality, Bhattacharya et al., 2013 tests the association between earnings quality and information asymmetry. They find that poor earnings quality featured by a large divergence between earnings and cash flow is significantly and incrementally associated with higher information asymmetry.

Our study focuses on how the new rule update ASU 2016-01 may impact the information asymmetry by changing earnings quality. Here, I provide a short summary of some of the major studies on accounting quality and bid-ask spread.

2.3.1 Raman and Tripathy, 1993

Raman and Tripathy, 1993 studies the impact of the accounting rule change (Accounting Series Release (ASR) No. 253 (SEC 1978); FASB 1982) on the information asymmetry measured by the bid-ask spread in the extractive petroleum industry. They find that present value-based supplemental data on mineral reserves services better than historical cost-based accounting, and thus, reduces the bid-ask spread. They argue that historical cost-based accounting reflects the expenditures for finding and developing the reserves of hydrocarbons, but rather than the fair value of these reserves. Present value-based accounting provides more relevant information about future income, and thus reduces information asymmetry. Using a sample of 31 oil-and gas-producing firms data from 1980 to 1987, they find that the market-adjusted spreads decreased following the rule update.

2.3.2 Greenstein and Sami, 1994

Greenstein and Sami, 1994 studies the SEC's 1970 segment disclosure requirement and its impact on firms' information asymmetry. Their results indicate that the bid-ask spread decreased significantly following the 10-k filling changes.

The authors argue that segment disclosure added more information content by providing more finely partitioned data to financial statement users, leading to decreased information asymmetry. Using a sample of firms listed on the NYSE in the year 1969 and 1970, they document that firms following the SEC 1970 disclosure requirement experienced a significant decrease in the bid-ask spread.

2.3.3 Maddala and Nimalendran, 1995

maddala1995unobserved studies the effect of earnings surprise on the bid-ask spread. Differentiated from previous research estimating the unanticipated component of earnings news as the difference between the actual earnings and the earnings forecasts of analysts, this paper treats earnings surprises as an unobserved variable and uses instrumental variable (IV) estimate to examine the effect of earnings surprise on bid-ask spread. Their results are consistent with informed speculation models which predict that market participants increase the bid-ask spreads before earnings announcements to compensate for the adverse selection problem. They find a significant increase in bid-ask spread along with earnings surprises.

2.3.4 Affleck-Graves et al., 2002

Affleck-Graves et al., 2002 investigates the effect of earnings predictability on the adverse selection cost component of bid-ask spread. They composed an earnings predictability score based on analyst forecast errors and the standard deviation of forecast errors. Using a sample of 247 NASDAQ firms from 1985 to 1990, they examine the correlation between the adverse selection cost of bid-ask spread and earnings predictability. They find an increase in adverse selection cost of bid-ask spread for firms with less predictable earnings.

2.3.5 Bhattacharya et al., 2013

Bhattacharya et al., 2013 examines whether poor earnings quality is associated with higher information asymmetry as reflected in the adverse selection component of the trading cost. They argue that one of the very important attributes of the quality of accounting information is the correlation of earnings and cash flows. A weak correlation between earnings and cash flows reduces the information content of financial reporting, and thus exacerbates the information asymmetry.

Bhattacharya et al., 2013 uses percentage price impact and percentage effective spread to measure the information asymmetry, and regresses the firm's total current accruals on operational cash flow. The standard deviation of the regression residuals is used to proxy the earnings quality. Using both annual and quarterly data from the years 1997 to 2007, Bhattacharya et al., 2013 finds a significant negative relationship between earnings quality and information asymmetry, poor earnings quality is significantly associated with a higher bid-ask spread.

2.4 Analyst forecast accuracy

Analyst forecast accuracy is typically measured as the absolute difference between the actual earnings and analyst forecast on a firm's earnings performance scaled by the stock price. Earnings per share (EPS) is commonly used to proximate firm's earnings performance. Generally speaking, three major factors are documented by previous research that affect the analyst's forecast accuracy: (1) Individual analyst's forecasting ability; (2) Firm's characteristics and financial reporting quality; and (3) Financial accounting and disclosure standards. Individual analysts' forecasting experience, industry knowledge, and information search and processing ability will affect the forecast accuracy (e.g., Butler and Lang, 1991; Clement, 1999; Hunton and McEwen, 1997; O'Brien, 1990; Sinha et al., 1997). Firm's characteristics, such as corporate governance and international diversification, also have an impact on analyst forecast accuracy (e.g., Bhat et al., 2006; Duru and Reeb, 2002. Previous studies also document that firms' financial reporting quality also affects analysts' forecast accuracy (Behn et al., 2008. Financial accounting standards and disclosure

requirements also directly impact the financial reporting quality, so a group of research focusing on how financial reporting standard also finds that accounting standards and disclosure requirements also directly affect analyst forecast accuracy (e.g., Baldwin, 1984; Hope, 2003; Liang and Riedl, 2014; Tan et al., 2011).

I provide a short summary of some of these research relative to my study as followed.

2.4.1 Duru and Reeb, 2002

Duru and Reeb, 2002 studies whether corporate international diversification affects analysts' forecast accuracy. The authors argue that international diversification increases forecast difficulty and makes earnings forecast more complex, thus would directly impact forecast accuracy. Duru and Reeb, 2002 composes a measure of international diversification based on foreign sales ratio, foreign asset ratio, and the number of geographic segments. Using a sample of 1,271 firms from 1995 to 1998, they find evidence that international diversification is associated with less predictable earnings, and more optimistic analysts' forecasts.

2.4.2 Hope, 2003

This paper investigates how enforcement of accounting standards and disclosure practices affect analysts' forecast accuracy. The authors use a sample from 22 countries to examine the impact of the degree of enforcement of accounting standards on the accuracy of analysts' earnings forecast. The results suggest that strong enforcement encourage managers to follow the accounting standards, thus reducing the management discretion on financial reporting and reducing the analysts' uncertainty. Besides, this paper also provides evidence that disclosure quantity is positively associated with analysts' forecast accuracy.

2.4.3 Bagehot, 1971

Bagehot, 1971 examines whether corporate governance transparency affects the accuracy of analyst forecasts. This paper argues that corporate governance is important to financial analysts for two reasons: (1) corporate governance impacts the credibility of financial reporting; and (2) governance disclosure

reduces uncertainty about firms' future performance. Using country-level measures of corporate governance transparency across 21 countries, the authors document a positive relationship between corporate governance transparency and analysts' forecast accuracy.

2.4.4 Behn et al., 2008

Bagehot, 1971 also investigates how a firm's financial reporting quality affects analysts' forecast accuracy. This paper assumes that audit quality is positively related to unobservable financial reporting quality, thus the authors use the audit quality to proximate financial reporting quality. They examine the accuracy of earnings forecast of financial analysts following firms that were audited by Big five auditors and firms that are audited by non-Big five auditors, and find that high quality of financial reporting audited by Big five auditors is associated with high analysts' forecast accuracy.

2.4.5 Liang and Riedl, 2014

Liang and Riedl, 2014 examines the differences in financial accounting between U.S. and U.K. associated with real estate assets valuation and how these accounting measurements differences affect analysts' forecast accuracy. Differentiated from previous common studies that focus on earnings forecast, this paper exploits the variation in asset valuation in two countries and studies both earnings forecast (EPS) and balance-sheet-based forecast (net asset value, or NAV). U.K. firms report real estate assets at fair value, while U.S. firms report this type of assets at historical cost. Using a sample of publicly-traded investment property firms from U.K. or U.S. during the period 2002-2010, this paper finds evidence that NAV forecasts under fair value accounting is more accurate than those under historical cost.

Chapter 3

The capital market consequences associated with classifying unrealized gains and losses on available-for-sale (AFS) equity securities in GAAP net income

1 Introduction

In 2016 the Financial Accounting Standard Board (FASB) issued accounting standard update FASB No. 2016-01 (ASU 2016-01). This new standard requires firms to report unrealized gains and losses on available-for-sale (AFS) equity securities in net income[1]. Previously, these gains and losses were reported in other comprehensive income and were not recognized in net income until the investments were sold. This previous accounting treatment allowed firms to time the sales of their AFS securities to manage or smooth earnings and, in the case of financial institutions, to manage their capital adequacy ratios (e.g., Ellul et al., 2011, Dong et al., 2014, and Barth et al., 2017). Through this reporting change, the FASB removed firms' ability to manage or smooth earnings through strategically timing AFS equity security sales because these gains and losses are now captured in income as market prices change rather than when the investment

[1] Equity investments accounted for under the equity method of accounting or those that result in consolidation of the investee are exempt from this requirement.

is sold. As a result, proponents argue that ASU 2016-01 will result in earnings that better reflect current period performance and, therefore, should be more useful to investors.

Critics of ASU 2016-01 argue that fair values can be quite volatile, as an unrealized loss today could be offset by an unrealized gain tomorrow, all of which could occur before the firm sells the investment. If so, including these unrealized gains/losses in net income will increase earnings volatility and make the resulting earnings less persistent or informative about future performance. Consistent with these arguments, Dong et al., 2014 finds that investors react to AFS security gains/losses when sold, and that these realized gains/losses help predict future performance. Similarly, CEO Warren Buffett criticized ASU 2016-01 in his 2017 Annual Letter noting that "in future quarterly and annual reports [ASU 2016-01] will severely distort Berkshire's net income figures and very often mislead commentators and investors" (Buffett 2018).

In this paper, I examine the capital market consequences associated with reclassifying unrealized gains and losses on AFS equity securities from other comprehensive income (OCI) to net income. First, I examine whether there is a change in investors' response to net income, as captured by the earnings response coefficient (ERC) after ASU 2016-01 adoption[2]. Prior research suggests that investors react more strongly to net income when it is more persistent and less risky (D. W. Collins and Kothari, 1989). On the one hand, removing managers' ability to time their AFS security sales could result in earnings that better reflect current period performance. If so, there is less risk in interpreting earnings as a measure of performance, and so ERCs should increase after ASU 2016-01. On the other hand, if the gains and losses in net income are caused by transitory fair value changes in marketable equity securities, current earnings will be less persistent, and ERCs should decrease after ASU 2016-01.

I use a difference-in-differences research design to examine changes in ERCs after the adoption of ASU 2016-01 for U.S. public insurers. Specifically, I regress three-day cumulative abnormal returns on unexpected earnings (UE). In doing so, I obtain an earnings response coefficient (ERC), which captures

[2]Following previous literature, I use the earnings response coefficient (ERC) to proxy for the information content of earnings. See Wilson, 2008, Chen and Pottier, 2014,Ferri et al., 2018, andGipper, Leuz, and Maffett, 2019.

the extent to which net income reflects the information that investors use when revising their beliefs about firm value around earnings announcements.

I focus on U.S. public insurers because these financial institutions are likely most affected by the new regulation due to their relatively large equity holdings[3]. While firms with relatively high versus low levels of equity holdings should have similar ERCs prior to the passage of ASU 2016-01, I may observe a change following the requirement that unrealized gains and losses from equity holdings are included in net income. Our main finding is that earnings informativeness decreased significantly for firms with relatively high levels of equity holdings following the implementation of ASU 2016-01. I interpret this result as suggestive that the inclusion of unrealized gains and losses on equity holdings in net income results in earnings amounts that are less persistent.

To validate whether changes in earnings persistence are the mechanism that explains lower ERCs after ASU 2016-01, I directly examine whether insurers' earnings persistence decreases following the rule change. Consistent with expectations, I find a significant decrease in earnings persistence after the rule update for insurers holding relatively large equity investments measured at fair value. These results suggest that including transitory – and potentially mean reverting gains/losses – in net income makes earnings less persistent and, thus, produces an earnings number that less fully reflects the information investors use when revising their beliefs about firm value around earnings announcements.

Our second set of analyses examines whether investors' perceptions of firm risk, as captured using several proxies (i.e., bid-ask spread, stock return volatility, market beta, and implied volatility of options), changes around the earnings announcement after the new accounting standards update. Prior research suggests that earnings volatility conveys information to investors regarding firm risk (e.g.,W. Beaver et al., 1970;Hodder et al., 2006)[4].Furthermore, prior research suggests that negative (positive) disclosure increases (decreases) investors' perceptions of firms' fundamental risk, as measured by bid-ask spread, return

[3]On average, U.S. public insurers invest 4% of total assets, or 8% of total investments in equity securities measured at fair value.

[4]Relatedly, prior research suggests that the quality of accounting information plays a significant role in information asymmetry, and that higher quality accounting information is associated with smaller bid-ask spreads (e.g., Swaminathan and Weintrop, 1991; Bhattacharya et al., 2013)

volatility, market beta, and implied options volatility (Campbell et al., 2014; Campbell et al., 2020). Overall, prior literature uses these market-based measures as proxies for assessing how investors' perceptions of a firm's information risk and fundamental risk change after a disclosure change.

If the primary effect of ASU 2016-01 is that it reduces the informativeness of earnings and that earnings less fully reflect the information used by investors when revising their beliefs about firm value, then we might expect to see an increase in investors' perception of firm risk after the standard change. However, unlike with the ERC tests, our market-based firm risk proxies will reflect investors' responses to the total disclosure package—not just the net income number. If investors are able to use other information in the disclosure package to understand the economic implications of the activity in firms' AFS equity portfolios, we should see no change in investors' perceptions of firm risk around earnings announcements after ASU 2016-01. In that case, investors would understand that increased volatility in earnings is reflective of a firm's increased information or operational risk[5]. Furthermore, and as previously discussed, if the new standard constrains opportunistic earnings management through the timing of AFS equity security sales, investors might perceive the total disclosure package as improving reporting quality, and I could even see a decrease in firm risk after ASU 2016-01[6].

Using a difference-in-differences analysis, I examine how the rule update changes insurers' market-based firm risk measures around quarterly earnings announcements. I find almost no significant change across any of our measures of firm risk for firms holding equity investments measured at fair value following the implementation of ASU 2016-01[7]. Because our measures of firm risk reflect all market participants' views, I also perform a test on capital market participants that are likely more sophisticated – professional analysts. Consistent with our firm risk tests, I find no significant change in analyst forecast accuracy. We

[5]It is possible that insurer operations change following the implementation of ASU 2016-01, as insurers respond to more volatile earnings by shifting their asset portfolio allocation. Two contemporaneous working papers explore this possibility: S. Kim et al., 2022 find that insurers increase the risk in their equity portfolios, potentially incentivized by their compensation contracts. Song, Wang, and Wheeler (2021) (working paper), however, find empirical evidence that insurers decrease the riskiness of equity holdings. However, I discuss these papers, their results, and views on their research designs at the end of Section IV.

[6]S. Kim et al., 2022 finds empirical evidence that non-GAAP disclosures for insurers increase following the implementation of ASU 2016-01.

[7]I document an increase in firm risk for one of our proxies of the implied volatility of options.

interpret these results as suggestive that both financial analysts and investors interpret this ASU 2016-01 rule update as a pure earnings reclassification, which does not change a firm's business activities, and thus results in no impact on investors' perceived firm riskiness or information symmetry between firms and outsiders. Furthermore, these results are consistent with the view that capital market participants use disclosures outside of the net income number to compensate for decreased informativeness of earnings after the rule change.

Our paper contributes primarily to the literature on the consequences of the accounting treatment for available-for-sale (AFS) securities, as well as the regulatory debate about that accounting treatment. Prior to ASU 2016-01, when firms bought equity securities, they declared their intent with that investment – if they would likely sell in the short term, it was classified as a "Trading" security, and if they would likely not sell in the short term, it was classified as "AFS". If the investment was labeled as "Trading", then unrealized gains/losses on the investment were recorded in net income. The intuition for this treatment was that it would be useful for investors because even though the firm had not yet sold the investment, they will likely do so soon, so any short-term market fluctuations are unlikely to reverse before its sale. If the investment was labeled as "AFS", then unrealized gains/losses on the investment were recorded in other comprehensive income (OCI) and avoided net income until the investment was sold. The intuition for this treatment was that because the firm had not declared an intent to sell the security in the near term, short-term market fluctuations would have a chance to reverse, so recording these amounts in net income could make the performance measure less useful.

Because the accounting was driven by management's declared intent with the security at the investment date, this was known as an "intent-based" accounting model. Regulators, investors, and auditors, among others, heavily scrutinize "intent-based" accounting models because managers have an opportunity to declare their intent with an investment based on the accounting treatment they prefer, rather than the accounting treatment that best reflects the underlying economics of the transaction. Indeed, prior to ASU 2016-01, a large majority of most firms' equity investments were classified as AFS rather than trading.

ASU 2016-01 effectively removed "intent-based" accounting from the AFS equity securities accounting model. After the standard, unrealized gains/losses on equity securities are recorded in net income regardless of whether management intents to sell the security in the short term. As previously discussed, several prior papers document that managers timed the sales of their AFS securities to smooth or manage earnings as well as balance sheet ratios (e.g., A. Beatty et al., 1995, J. H. Collins et al., 1995, A. L. Beatty et al., 2002, and Barth et al., 2017). These studies imply that managers exploited the "intent-based" nature of the accounting treatment for AFS securities in a way that misrepresented economic reality, and thus one might expect that by removing this discretion from managers ASU 2016-01 would result in improved accounting outcomes. However, Dong et al., 2014 note that allowing managers to "smooth" their earnings through timing AFS sales results in earnings amounts that are more persistent and better predict future earnings. Dong et al. conclude that "our results illustrate that an important type of amortized cost information, realized gains and losses, remains highly useful to investors despite the overall fair-value-accounting framework for AFS securities" (Dong et al., 2014; 243). Specifically, their findings imply that ASU 2016-01 will reduce the informativeness of earnings.

I find that, after ASU 2016-01, earnings less fully reflect the information investors use when revising their beliefs about firm value around earnings announcements. This is consistent with Dong et al., 2014 arguments about the potential implications of a rule change (such as ASU 2016-01) and could be considered as evidence that the benefits of the intent-based accounting model (i.e., on average, earnings that better reflect underlying economic transactions) outweigh any costs (i.e., managerial opportunism). However, I also find that investors do not appear to change their assessments of firms' risk after the standard. This finding could be considered as evidence that other disclosures are sufficient to overcome any adverse effects of the rule change on the informativeness of net income, so that after ASU 2016-01, investors are able to understand the economic implications of firms' AFS equity portfolios and there is less potential for managerial optimism.

2 Hypothesis Development

As discussed earlier, before 2018, AFS equity investment fair value changes were required to be recognized in other comprehensive income (OCI). Beginning in 2018, the ASU 2016-01 rule update requires firms to reclassify those fair value changes into net income. Compared with OCI, net income includes all non-transitory business operations reported on the income statement, including operational, investment, and financial business results. Other comprehensive income is a catch-all item for changes in equity from non-regular and transitory business operation results, including unrealized gains and losses on investments resulting from changes in market prices, foreign exchange fluctuations, or changes in pension liabilities or assets. Because of the volatile nature of these items, OCI is generally viewed as noisier than net income. Regulators, financial statement users, and academics have historically debated using net income versus OCI as measures of a firm's financial performance. One group of studies argues that investors tend to rely less on OCI to forecast future firm performance and, therefore, suggests that OCI has less of an impact on stock price (e.g., Cheng et al., 1993, Dhaliwal et al., 1999 and Chambers et al., 2007).

Conversely, aside from measuring financial performance, prior studies also examine earnings management behavior, such as firms manipulating reported OCI, especially via unrealized gains and losses (e.g.,Hirst and Hopkins, 1998 and Y.-J. Lee et al., 2006a). Generally, firms face incentives to sell AFS investments with high unrealized gains, allowing them to recognize investment income and improve reported financial performance when performance is otherwise poor. Firms can then sell any AFS securities with significant unrealized losses in good years to smooth earnings and avoid tax liabilities. This "cherry-picking" sale behavior by firms suggests that capital markets emphasize net income over OCI (Y.-J. Lee et al., 2006a). Thus, including transitory items into net income may not increase the information content of reported earnings. Instead, rather than increasing decision-useful information content in earnings, including fair value changes into net income may add noise to the financial statements by combining more regular and predictable components of net income with less persistent and transitory fair value changes, as suggested by critics of update ASU 2016-01.

Prior literature also documents a smaller ERC on transitory earnings reported in financial statements (e.g., D. W. Collins and Kothari, 1989, D. W. Collins and Salatka, 1993 and Abarbanell and Lehavy, 2003). One potential explanation for the weak relationship between transitory earnings and stock returns documented in these studies is that capital markets do not expect those earnings changes to be persistent and correlated with future cash flows, thus leading to only minor price adjustments. Based on this explanation, I would expect the new accounting standard update to decrease investor responsiveness (via the ERC) to earnings reports.

Other studies, however, document that OCI is more closely associated with firm risk and future returns. These studies also suggest that investors use this information to adjust their expected return (e.g.,Maines and McDaniel, 2000 and Hodder et al., 2006). If investors have already captured the information reflected in these transitory items, including the fair value changes that were previously recognized through unrealized gains and losses in OCI, then the earnings reclassification required by ASU 2016-01 should not substantially change investor expected returns. In this case, the new accounting standard would not improve the information content of the firm's earnings reports.

A third possibility is that ASU 2016-01, by effectively removing "intent-based" accounting from the AFS equity securities accounting model, increases the usefulness of reported earnings to investors. Before ASU 2016-01, managers could time the market to lock in unrealized gains/losses on AFS securities in response to various incentives (e.g., A. Beatty et al., 1995, J. H. Collins et al., 1995 and Barth et al., 2017). To the extent that managers were exploiting the "intent-based" nature of AFS accounting rules, these timed asset sales resulted in reported net income presenting a distorted view of a firm's actual underlying economic performance. By requiring managers to record unrealized gains/losses in net income regardless of management's intent, earnings may now present a more accurate view of a firm's underlying economics. In this scenario, we would expect to observe an increase in ERCs following ASU 2016-01.

Based on the preceding discussions, I propose the following hypothesis:

H1–Earnings Informativeness Hypothesis: ***Earnings response coefficients (ERC) for public insurers following ASU 2016-01 enforcement did not change.***

Our first hypothesis relates specifically to how investors interpret the information content of earnings following the implementation of ASU 2016-01. Our next hypothesis examines whether potential changes in investors' perception of firm risk concentrate on reported earnings, or whether they extend to the overall disclosure package of the firm. I expect that ASU 2016-01 will introduce volatility into reported earnings, as earnings must now include unrealized gains/losses on certain equity holdings. Prior research suggests that earnings volatility conveys information to investors regarding firm risk (e.g., W. Beaver et al., 1970; Hodder et al., 2006). If investors similarly interpret the increased volatility in earnings introduced by ASU 2016-01 as indicative of increased operational or information risk, we expect to observe an increase in market-based proxies of firm risk following the implementation of the update for firms most affected by the change.

Alternatively, I may see no change in investor assessments of firm risk following ASU 2016-01. The rule change is specifically focused on a change to a firm's reported earnings. Even if I observe a decline in earnings informativeness or persistence, market participants may not view this as a change in a firm's overall level of risk. One potential explanation is that investors recognize that the new rule increases earnings volatility but does not fundamentally change a firm's operations. Another possibility is that managers, in recognition of the decline in earnings informativeness, substitute other means of conveying information to investors. In this scenario, the rule change would not lead to changes in investors' overall assessment of firm risk, even as the information content in earnings declines with the rule update. To examine if the rule change led to a change in investor perception of firm risk, I use four different market-based measures. Specifically, I use bid-ask spreads, the variance of stock return, stock beta, and implied volatility of options to measure firm risk.

Based on the foregoing discussions, I propose the following hypothesis:

H2–Firm Risk Hypothesis: ***Market-based measures of firm risk are unchanged after the implementation of ASU 2016-01.***

For our final hypothesis, I examine how professional analysts interpret earnings following the passage of ASU 2016-01. While the market-based measures of firm risk reflect the combined views of all market participants, analysts are a set of sophisticated capital market participants that are likely more attuned to rule changes, such as ASU 2016-01, that can change a firm's reported earnings. Since ASU 2016-01 impacts reported GAAP earnings, I particularly expect to see any changes in analyst earnings forecast accuracy related to GAAP figures. For non-GAAP forecasts, managers may decide to purge these figures of the volatility induced by the passage of ASU 2016-01.

Based on the foregoing discussions, I propose the following hypothesis:

H3–Analyst Forecast Hypothesis: ***Analyst forecast accuracy around the earnings announcement after the implementation of ASU 2016-01 decreased for firms with a relatively greater amount of equity holdings measured at fair value.***

3 Research Design

To evaluate how ASU 2016-01 will affect the informativeness of earnings, I focus on insurers, since insurers generally have substantial equity holdings as part of their investment portfolios. By focusing on the insurance industry, I avoid unobserved heterogeneity across industries over time that could bias our study. The new accounting standard went into effect in 2018 for firms with fiscal years ending in December 2017. To capture changes in the information content of reported earnings, I use data from the year 2016 through 2019 from firms with fiscal year-end in December[8].

[8] Our sample period ends before 2020 to avoid any concerns that our results are influenced by capital market disruptions caused by the COVID-19 pandemic.

The earnings reclassification required by ASU 2016-01 predominantly influences net income for firms holding substantial AFS equity investments. This setting allows us to use a difference-in-differences approach to estimate the effects of the rule change. Accordingly, I define a treatment group as those insurers with comparatively significant equity holdings measured at fair value. Specifically, to define our treatment group, I first collect data on insurers' equity holdings from 2010 to 2017 (before ASU 2016-01). I calculate the average ratio of equity investments measured at fair value to total investments for each firm[9]. I then define the treatment group as firms with average equity holding ratio greater than the sample median, or insurers holdings more than three percent of their total investments as equity investments measured at the fair the value are the treatment group[10]. Therefore, our control group is firms with a lower-than-sample-median ratio of equity investment to total investments[11]. This approach allows us to isolate the effect of the earnings reclassification of unrealized gains and losses on the firm's earnings[12].

I first examine changes in ERCs around ASU 2016-01. Specifically, I estimate the following difference-in-differences model using data from fiscal year 2016 to 2019 for our treatment firms and control firms:

$$\begin{aligned} CAR_{it} = {} & \beta_0 + \beta_1 UE_{it} \times Post_{it} \times Treat_{it} + \beta_2 UE_{it} + \beta_3 Treat_{it} + \beta_4 Post_{it} + \beta_5 Treat_{it} \times Post_{it} \\ & + \beta_6 UE_{it} \times Post_{it} + \beta_7 UE_{it} \times Treat_{it} + \gamma \mathbf{X}_{it} + \psi UE_{it} \times \mathbf{X}_{it} + \epsilon_{it} \end{aligned} \tag{3.1}$$

where CAR_{it} is the 3-day market-adjusted stock return around the date of quarterly earnings announcements. UE_{it} is unexpected earnings, which is calculated as the difference between the actual quarterly earnings per share (EPS) and the most recent median analyst forecast scaled by stock price two days prior to the earnings announcement. $Treat_{it}$ is an indicator variable equal to one if firm i is in the treatment group (insurers holding relatively higher AFS equities investments), and zero otherwise. $Post_{it}$ is an indicator

[9] ASU 2016-01 was issued in January 2016. Considering the potential spillover effect, I also examine data from 2010-2015 to define our treatment and control groups. This definition does not change the treatment group and the results are consistent.

[10] The median ratio of equity investments to total investments in our sample is 3.13 percent.

[11] I also use the ratio of equity investments measured at fair value to total assets to define our treatment group and control group, and our results are consistent.

[12] I also do robustness check using an alternate definition of our treatment variable, where I replace the Treat variable in model (1) with variable *EH-Docile*, and I assign values 1-10 to it based on firm's equity investments holding ratio, measured as the ratio of equity investments measured at fair value to total investments. I report these results in Appendix 5A.

variable equal to one if quarter t is in the fiscal year 2018 - 2019, and zero if quarter t is in the fiscal year 2016 - 2017. Our coefficient of interest is β_1, the coefficient of $UE_{it} \times Post_{it} \times Treat_{it}$, which captures the change in ERCs for treated firms relative to control firms from the pre- versus post- 2018 period. I expect a positive coefficient estimate if ASU 2016-01 improves the information content in earnings ($\beta_1 \geq 0$) and a negative coefficient estimate if the information content in earnings declines ($\beta_1 \leq 0$).

Following prior studies on the determinants of ERCs, I include several control variables in our model to isolate our interaction of interest. Easton and Zmijewski, 1989 document that firm risk negatively affects ERCs, so we use beta from the CAPM model along with a liability-to-surplus ratio to proxy for firm-specific risks. D. W. Collins and Kothari, 1989 document a positive marginal effect of a firm's growth opportunities on the earnings response coefficient. I, therefore, include the market-to-book ratio to proxy for firm growth. In addition, I include firm size, a loss indicator for firms with negative net income, earnings persistence, and analysts' forecast dispersion (e.g., Chaney and Jeter, 1992; Ferri et al., 2018; Martikainen, 1997). I also include interaction terms for these firm characteristics and unexpected earnings in the model. I include fiscal year-quarter fixed effects to control for differences in investors' reaction to earnings announcements in different fiscal quarters. I also use insurance sub-industry fixed effect to control for the difference between property-casualty insurers and life-health insurers. We cluster standard errors by earnings announcement date Petersen, 2009.

Our difference-in-differences approach has several advantages that help to overcome potential measurement error in our setting. Notably, there is the potential for measurement error in our proxy for unexpected earnings, which is based on analysts' forecasts. Bradshaw, 2011 and Brown et al., 2015 argue that analysts' forecasts are not a perfect proxy for investors' expectation because analysts do not incorporate all information into the forecast. In our setting, however, as long as the divergence between the analysts' forecast and investors' expectation does not change deferentially across our treatment and controls groups around ASU 2016-01, potential measurement error will not affect our estimates of the change in ERCs in our difference-in-differences model. We believe this assumption is valid in our setting since the ASU 2016-01 does not require any changes to disclosure, but it *does* require a significant earnings reclassifica-

tion. Therefore, the same information set is available to analysts and investors both before and after ASU 2016-01 went into effect.

3.1 Market-Based Assessments of Firm Risk Research Design

Similarly, I use a difference-in-differences method to examine the effect of earnings reclassification on investors' perceptions of firm risk. I use several market-based proxies for firm risk, including bid-ask spreads, stock return volatility, beta, and implied volatility of options. Again, I define a treatment group as those insurers with a ratio of AFS equity investment to total investments that is above the sample median from 2010 to 2017. Therefore, firms with a ratio of AFS equity investment to total investments below the sample median are our control group[13].

I estimate the following difference-in-differences model using data from fiscal year 2016 to 2019 for the treatment firms and control firms:

$$\textit{Firm Risk}_{it} = \alpha + \beta_1 \textit{Treat}_{it} + \beta_2 \textit{Post}_{it} + \beta_3 \textit{Treat}_{it} \times \textit{Post}_{it} + Controls_{it} + FEs + \epsilon_{it} \qquad (3.2)$$

Firm Risk$_{it}$ is one of our proxies for total market-based risk. For bid-ask spreads, I use both abnormal bid-ask spreads ($ASPD_{it}$) and total bid-ask spreads ($TSPD_{it}$). Specifically, $ASPD_{it}$ is the cumulative daily abnormal bid-ask spreads from 2 days before to 2 days after earnings announcements for firm i in quarter t; $TSPD_{it}$ is the total bid-ask spreads from 2 days before to 2 days after earnings announcements for firm i in quarter t. Following the prior literature (Roulstone, 2003;Yu et al., 2018), we measure bid-ask spreads as the difference between the ask price and the bid price, scaled by the average of the bid price and ask price. I then calculate daily abnormal bid-ask spreads as the bid-ask spreads during the event day minus the mean bid-ask spreads during the estimation window beginning 50 days before the event period and ending 21 days before the event date. *SDRet*$_{it}$ is the variance of stock returns on the earnings

[13]I perform a robustness check using an alternative treatment definition, where I replace the Treat variable in model (2) with variable *EH-Docile*, and I assign values 1-10 to it based on firm's equity investments holding ratio, measured as the ratio of equity investments measured at fair value to total investments.I report these results in Appendix 7A.

announcement date. $Beta_{it}$ is firm i's daily beta on earnings announcement date estimated using the market model. Finally, we use three proxies for the implied volatility of options $IMVOL_{it}$, based on options expiring in 91, 182, and 365 days.

Equation 3.2 controls for the common factors identified in the literature that may affect market-based measures of firm risk (e.g.,Brennan and Subrahmanyam, 1995; Campbell et al., 2020; Yu et al., 2018). Specifically, I include controls for cumulative abnormal returns surrounding the earnings announcement, stock price variance, trading volume, institutional ownership, unexpected earnings, analyst following, profitability, capital structure, and firm size.

3.2 Analyst Forecast Research Design

To test our hypothesis relating to analyst forecasts, I also use a difference-in-differences approach while focusing on our sample on U.S. public insurers. I estimate the following difference-in-differences model using data from the fiscal year 2016 to 2019 for the treatment firms and control firms[14]:

$$AF_{it} = \alpha + \beta_1 Treat_{it} + \beta_2 Post_{it} + \beta_3 Treat_{it} \times Post_{it} + Controls_{it} + FEs + \epsilon_{it} \qquad (3.3)$$

where we define analyst forecast accuracy, AF_{it}, as the negative of absolute value of the analyst EPS forecast error, scaled by stock price (e.g., Lang and Lundholm, 1996). All other variables are defined as in prior models. We are particularly interested in the coefficient estimate on the interaction term, $Treat_{it} \times Post_{it}$, which is the change in analyst forecast accuracy for firms with high equity holdings following the implementation of ASU 2016-01. A positive coefficient estimate indicates more accurate forecasts ($\beta_3 \geq 0$), while a negative coefficient indicates less accurate forecasts ($\beta_3 \leq 0$).

I include control variables identified in previous literature that relate to analyst forecast accuracy into our regression, such as firm size, analyst forecast horizon, analyst forecast dispersion, the variance of earnings, institutional ownership, trade volume, and a dummy variable (Loss) indicating negative

[14] Again, I perform a robustness check using an alternative treatment definition, where I replace the Treat variable in model (2) with variable *EH-Docile*, and I assign values 1-10 to it based on firm's equity investments holding ratio, measured as the ratio of equity investments measured at fair value to total investments. I report these results in Appendix 9A.

earnings in that reporting period. I use GAAP earnings per share (EPS) and non-GAAP EPS forecasts in our analysis. Since ASU 2016-01 is only a reporting requirement for GAAP earnings, it is possible I will report a change in forecast accuracy for GAAP EPS forecasts, but that managers will report non-GAAP earnings that do not include changes in unrealized AFS gains/losses, in which case, we would observe no change in non-GAAP forecast accuracy.

3.3 Parallel Trend Assumption

Our difference-in-differences estimates represent a quasi-experimental design that uses panel data from treatment and control groups to obtain a proper counterfactual to estimate a causal effect. To ensure the validity of difference-in-differences models, I require parallel trends in the pre-treatment period across our treatment and control groups. Under the parallel trend assumption, the variable of interest for the treatment and control groups will evolve along the same path without the treatment.

I test the parallel trend assumption for each of our three difference-in-differences analyses. In the ERCs regression model, since our variable of interest is the coefficient of $UE_{it} \times Treat_{it} \times Post_{it}$, I cannot test this assumption directly by graphing the trend of our variable of interest, but I can test whether the treatment effects are observable only after the treatment has been enforced (i.e., post-ASU 2016-01). Specifically, I divide our sample into three sub-samples: observations in 2016 and 2017, observations in 2017 and 2018, and observations in 2018 and 2019. I estimate our regressions using those three different samples, and I find that treatment effects only showed in the sub-sample containing observations in the years 2017 and 2018. In another way, there are no significant treatment effects until the year 2018. See Appendix 11A for full results.

We also graph the trends of the dependent variables in the bid-ask spreads and analyst forecast accuracy analysis (see Figures 2 and 3), and the graphs suggest that our difference-in-differences design meets the parallel trend assumption.

We also graph the trends of the dependent variables in the bid-ask spreads and analyst forecast accuracy analyses, see Figure 1 and 2, the graphs suggest that our difference-in-differences design meets the parallel trend assumption.

3.4 Potential Investment Portfolio adjustments Following the Rule Update

ASU 2016-01 was issued in January 2016 and became effective in 2018. Since I use the ratio of AFS equity investments to total investments to define our treatment and control groups, I assume that equity holding remains consistent during our sample period (i.e., our treatment group remains "treated" throughout our sample period). Importantly, I want to examine whether firms reacted to ASU 2016-01 by altering their portfolio composition (potentially in anticipation of the decrease in earnings informativeness I document).

Initially, I use data from 2010 to 2017 to define our treatment group. While the rule was issued in 2016, I are interested in whether firms change their investment portfolios after the issuance of ASU 2016-01 but before the rule changes are implemented. Considering the potential impact of the rule update, insurers with significant investments in AFS equities may want to decrease holdings to reduce the potential impact on their net income before 2018. Considering this possible adjustment, I also use data from 2010 to 2015 to define our treatment group. We find that this alternative definition does not change our treatment group.

Firms may also change their investment strategies once ASU 2016-01 became effective in 2018. If firms prefer to avoid the potential increase in earnings volatility associated with ASU 2016-01, they may reduce their investments in AFS equities, allowing firms to "avoid" the treatment. To examine this assumption regarding our treatment group, I analyze investment portfolio changes in our sample. Specifically, I analyze investment portfolio changes in four different measures: (1) the ratio of equity holdings at cost to total assets; (2) the ratio of equity holdings at market value to total assets; (3) the ratio of equity holdings at cost to total investments; (4) the ratio of equity holdings at market value to total investments. I report the portfolio changes using these four proxies in Figure 3.

Figure 3 reports that the ratios of equity investments to total investments (ratio 3 and 4) were relatively stable for the treatment and control groups before and after the implementation of the rule update. Although there is a minor decrease in the ratio of equity investments to total assets (ratio 1 and 2), the treatment group still holds significantly more investments in equities measured at fair value than the control group. These results suggest that the treatment firms did not adjust their investment portfolios materially following ASU 2016-01 to "avoid" the treatment.

3.5 Sample Selection and Summary Statistics

Our initial sample includes all U.S. public insurance companies with the required data available on Compustat, CRSP, NAIC, and I/B/E/S for the years 2016-2019[15]. I require each firm to have at least one quarter of data before and after year 2017 and each firm to have at least eight observations available. The sample selection process is reported in Table 1. I identify insurance companies based on Standard Industrial Classification System (SIC) codes and keep all firms with SIC codes between 6300 to 6399. I use financial statement data from Compustat and stock returns from CRSP. Earnings announcement dates and analyst EPS forecast data are from I/B/E/S. I calculate firm daily beta using the WRDS Beta Suite and the 3-days market-adjusted stock returns using WRDS event-study tool. I exclude firms with fiscal year-ends not in December. I describe our sample selection process in Table 1. I winsorize continuous variables at 2 percent and 98 percent level[16]. Table 2 reports summary statistics for our main variables for each analysis. Using Compustat fundamentals annual data, I define a treatment group as those insurers with ratio of AFS equity investments to total assets that are higher than the sample median (0.03) from 2010 to 2017. Firms' equity holding ratio distribution has been provided in Figure 1. Therefore, firms with ratios of AFS equity investments to total assets that are below the sample median are, therefore, our control group. In our ERCs analysis, our resulting final sample includes 573 firm-quarters and 52 unique firms

[15] The National Association of Insurance Commissioners (NAIC) collects and reports financial statement information for insurers operating in the U.S. These financial statements are reported under statutory accounting principles (SAP), which are similar in many respects to GAAP, but do have notable differences since they are primarily used by regulators to assess insurer solvency. Specifically, SAP statements include substantially more detail on insurer asset holdings, which I use in our research design.

[16] I also winsorized our sample at 3 percent and 97 percent levels. Our untabulated results are consistent.

(40 property and casualty insurers and 12 life and health insurers). In our bid-ask spreads analysis, our resulting final sample includes 836 firm-quarters and 58 unique firms (42 property and casualty insurers and 16 life and health insurers).In our analyst forecast accuracy analysis, our resulting final sample includes 693 firm-quarters and 60 unique firms (46 property and casualty insurers and 14 life and health insurers).

Table 3 provides univariate statistics for our sample, while I provide correlations in Table 4. To document that our treatment and control group definitions are valid and meaningful, I examine the ratio of AFS equity investments to total assets, the ratio of unrealized gains or losses on AFS securities to total earnings, and unrealized gains and losses on AFS securities per share for our treatment and control groups. I report these statistics in Table 3, Panel A. Firms in our treatment group tend to hold significantly larger holdings of AFS equity investments measured as fair value compared to our control group. The average ratio of AFS equity holdings to total asset is 8 percent for our treatment group compared with 0.4 percent for our control group. The ratio of unrealized gains and losses from AFS common stock to earnings is larger for our treatment group compared to the control group, representing about -5.60 per share on average for our treatment group compared to -0.4085 per share on average for our control group. These statistics suggest that reclassifying unrealized gains/losses on AFS equity investments into net income appears to be more impactful for our treatment group.

4 Results

4.1 ASU 2016-01 and ERC Results

Changes in ERC around the ASU 2016-01 Rules

I report empirical estimates of our difference-in-differences model (equation (1)) in Table 5. I estimate the model using ordinary least squares. Higher coefficients are indicative of higher ERCs, while negative coefficients are indicative of lower ERCs.

I first present a pooled regression without controls for the post period and the treatment sample, without firm characteristics, sub-industry fixed effects, and fiscal year-quarter fixed effects. The estimated

coefficient of UE_{it} is positive and significant (see column 1), which is generally consistent with ERCs reported in prior studies. I then present the difference-in-differences analysis by including indicator variables for the post period and treatment firms. In columns (2) through (6), I include indicators and interaction for our post and treatment variables – the coefficient on the interaction between UE_{it}, $Post_{it}$, and $Treat_{it}$, represents the amount the ERC changes for treated firms (i.e., those with high AFS equity holdings) following the enactment of ASU 2016-01. While I focus on this coefficient estimate, I report six models with different combinations of controls and fixed effects to ensure the robustness of our result.

Overall, the coefficient estimate on the interaction term $UE_{it} \times Post_{it} \times Treat_{it}$ is negative and statistically significant in all six models I report in Table 5. This suggests that ERCs declined for insurers with relatively high AFS equity holdings following the enactment of ASU 2016-01[17]. This finding is consistent with the new reporting requirement decreasing the informativeness of earnings.

Sample Match

Our analysis includes variables that are highly related to the ERC based on prior literature. However, although I control for differences between treatment and control groups by incorporating firm characteristics and their interactions with UE_{it}, the statistics of the univariate differences reported in Table 4 suggest further matching between treatment and control firms may be appropriate. Therefore, I also match our sample using two additionally matching methods: propensity score matching and entropy balancing matching.

Entropy Balancing Matching

I first use entropy balancing matching to match sample firms in our treatment and control samples based on crucial control variables. Entropy balancing is a sample matching method designed to balance multiple covariates in studies using observational data. By calibrating covariate unit weights, entropy balancing adjusts the inequalities in the moments of the covariate distributions. Improved balance conditions of the sample can reduce bias in estimating the treatment effect caused by an unbalanced sample (Hainmueller,

[17] In our robustness tests using equity holding docile for our treatment variable, I also find consistent evidence that insurers with relatively high AFS equity holdings experienced a decrease in ERCs following the earnings reclassification. See Appendix 5A.

2012). I first run a regression with our dependent variable $Treat_{it}$ and include all control variables. The results from this model provides information on which covariates are highly correlated with the treatment, and thus, need to be re-balanced. Based on these results, I choose firm size, market-to-book, beta, liability-to-surplus, a loss indicator, and analyst forecast dispersion as our "matching" variables. I match observations based on the first and second moments of these variables. The entropy balancing process assigns new weights to each control observation to meet the balancing conditions. I then use these new weights in our regression analysis.

I estimate the same regressions as in our baseline regression analysis and report empirical estimates using balanced sample in Table 6. Overall, our results are consistent when using the entropy balanced sample. Our coefficient of interest, $UE_{it} \times Post_{it} \times Treat_{it}$, is again negative and significant at the one percent level. The coefficients of the interactions of control variables with unexpected earnings are also consistent with prior literature. These results suggest that our findings are robust and not sensitive to the matching method, and again, document a significant decrease in ERC for the treatment firms after year 2018.

Propensity Score Matching

To test the sensitivity of our results to matching methods, I also perform propensity score matching on our treatment and control firms. I generate scores based on the Probit regression results with $Treat_{it}$ as the dependent variable and firm size, beta, liability-to-surplus, and market-to-book as our independent variables. I then use caliper matching and choose observations within 0.1 times the standard deviation of a matching variable without replacement. I then use these matched observations in our regression analysis. The coefficients of the interactions of control variables with UE_{it} remain consistent with previous literature (See Appendix2A for full results). Most importantly, however, our results suggest a greater relative decrease of ERCs for treated firms after the implementation of ASU 2016-01 even after matching on observable firm-level characteristics. Next, I examine whether this is attributable to a decline in earnings persistence induced by ASU 2016-01.

Alternative Definition of Treatment Firms

In our previous tests, I define the treatment firms as those with a ratio of AFS equity investments to total investments greater than the sample median. In this test, I examine whether our results are sensitive to this cut-off. I define firms with the ratio of AFS equity investments to total investments greater than the sample average or 7.29 %(instead of the sample median). I estimate our model using the same sample with the alternative definition for treatment firms. The coefficient of interest, $UE_{it} \times Post_{it} \times Treat_{it}$, is again negative and significant at five percent level (see Appendix3A for full results).

I also estimate these regressions using entropy balancing matched observations (see Appendix4A for full results) and find highly consistent results. Using these matched sample observations, the coefficient estimate on our variable of interest is negative and significant at the one percent level. Further, the coefficient remains negative and significant at the one percent level when using propensity score matching. Overall, these results suggest that our models are robust to alternative definitions of treatment firms.

Previous results suggest a significant decrease in ERCs following the implementation of ASU2016-01. Next, I examine whether this effect is attributable to a decline in earnings persistence induced by ASU 2016-01.

Earnings Persistence and ASU 2016-01

One potential source of our documented decrease in earnings informativeness (measured by ERC) following the adoption of ASU 2016-01 is that the change decreased earnings persistence. I test how insurers' earnings persistence changes following the update to examine whether this is the case. Following previous literature, I regress firm's current period of EPS on one-period-lagged EPS using five years historical data. I use the coefficient of the lagged EPS to measure the firm's earnings persistence. Again, I use a difference-in-differences method to analyze the change in insurers' earnings persistence. I report these regression results in Table 7. Consistent with this explanation, I find a significant decrease in insurers' earnings persistence. This decrease is especially significant for insurers holding a high level of AFS equities. Taken together, our results so far suggest that the inclusion of unrealized gains/losses on AFS equities

into net income reduces earnings informativeness through a decrease in earnings quality, as measured by earnings persistence.

4.2 ASU 2016-01 and Firm Risk Results

Changes in Bid-Ask Spreads Around the ASU 2016-Rules

To examine whether market-based measures of firm risk (i.e., bid-ask spread, return volatility, market beta, and implied options volatility) change following the implementation of ASU 2016-01, I apply a difference-in-differences approach and estimate equation (2). I first estimate the determinants of bid-ask spreads and report these results in Table 8. In columns (1) and (6), I first present OLS models only including the indicator variables for the post period and the treatment sample without control variables and fixed effects. The coefficient of $Treat_{it}$ is positive and significant at 1 percent level, suggesting that the treatment firms tend to have higher bid-ask spreads compared with our control firms. In the remaining columns I introduce an interaction term, $Post_{it} \times Treat_{it}$, which should capture any change in bid-ask spreads for firms particularly impacted by ASU 2016-01 (i.e., those with relatively higher AFS equity holdings) following the implementation of ASU 2016-01. I report various specifications that include different sets of control variables and fixed effects.

Overall, the coefficient estimate on $Post_{it} \times Treat_{it}$ is not statistically significantly different from zero in any of the models reported in Table 8. This suggests that there is no change in bid-ask spreads for treatment firms relative to control firms after the enforcement of ASU 2016-01[18]. Given our previous results – notably the decline in ERCs and earnings persistence for treatment firms – the lack of change in bid-ask spreads suggests that the decrease in informativeness is primarily related to reported earnings. Since bid-ask spreads do not appear to change for firms holding relatively more AFS equities, these results indicate

[18] In our robustness tests using equity holding ratio docile to define our treatment firms, I also find no significant changes in bid-ask spreads following the rule update. See Appendix 7A.

that the overall information environment for firms did not change in the ASU 2016-01 environment, even as GAAP net income appeared to become less informative[19].

I examine our other measures of firm risk in Table 9. Specifically, I use three different measures to proxy a firm's risk: stock return volatility (column (1)), beta (column (2)), and the implied volatility of options with expiration dates as 91/182/365 days (columns (3)-(5)). All models include year-quarter and firm fixed effects. Clustered standard errors are reported in parentheses beneath each coefficient estimate. Consistent with our results for bid-ask spreads, the results in Table 9 suggest that investor perceptions of risk tended not to change following the implementation of ASU 2016-01 for our treated sample of firms. Specifically, the coefficient estimates on the $Post_{it} \times Treat_{it}$ interaction are not statistically significantly different from zero. To the extent I do observe a change, the coefficient on the same interaction is positive and significant in column (5), suggesting an increase in investor perceptions of risk. Given the relatively small sample for this model and the remainder of our evidence suggesting no detectable effect, I interpret these results to consistently suggest investors do not view noisier earnings following ASU 2016-01 as indicative of a change in firm risk.

4.3 Changes in Analyst Forecast Accuracy Around the ASU 2016-01

Given that market-based firm risk tests reflect all market participants' views (and in the case of option volatility, the views of more sophisticated investors), I also test on an alternative, sophisticated capital market participant: professional analysts. For our final set of results, I examine changes in analyst forecast accuracy following the implementation of ASU 2016-01. Following Lang and Lundholm, 1996, I define analyst forecast accuracy as the negative of absolute value of the analyst forecast error in EPS, scaled by stock price. We include control variables identified in previous literature that affect analyst forecast accuracy into our regression, such as firm size, analyst forecast horizon, analyst forecast dispersion, variance of earnings, institutional ownership, trade volume, and a dummy variable Loss indicating a loss in that reporting

[19] Again, I balanced the treatment group and control group, and the regression results are reported in Appendix 6A. We see a decrease in bid-ask spread after matching the sample, but considering the test results reported in Table 8 and Appendix 7A, we believe that our results suggest a no significant change in bid-ask spread following the rule change.

period. Specifically, I report empirical estimates of equation (3), where I separately examine non-GAAP and GAAP forecasts in Table 10 and Table 11, respectively. Our results suggest no significant change in analyst forecast accuracy following the rule update[20]. I interpret these results as suggesting that managers are able to convey additional information to analysts in a way that makes earnings equally easy to forecast regardless of ASU 2016-01. I also examine analyst forecast accuracy for extend forecasting period(see Appendix8A for fully results), and consistently, I find no significant change in extended period forecast accuracy. I interpret these results as suggesting that managers are able to convey additional information to analysts in a way that makes earnings equally easy to forecast regardless of ASU 2016-01. Meanwhile, as a sophisticated group of financial information users, financial analysts have get used to various accounting standard updates, and they are able to incorporate these changes into their forecast appropriately so that minimize the impacts of earnings reclassification on forecast accuracy.

4.4 Reconciling Results

I have previously noted several contemporaneous, unpublished studies that also examine outcomes associated with ASU 2016-01. I provide summaries of the different research questions, results, and samples in Table 12 (Amornsiripanitch et al., 2022; S. Kim et al., 2022, and Song, Wang, and Wheeler 2022 working paper). I are similar to one of these papers in that I also examine whether the reclassification of unrealized gains/losses on equity securities into net income increases the volatility of earnings, and find that it does. However, our paper stands apart from these contemporaneous, unpublished working papers in that I are the only study to examine whether the increase volatility in earnings results in changes in investor perceptions of firm risk – a first-order question of interest to regulators. That is, I uniquely examine whether the rule changes in ASU 2016-01 change the decision usefulness of the financial statements.

Specifically, S. Kim et al., 2022 find that firms are more likely to disclose non-GAAP earnings that exclude unrealized gains and losses (URGL). They also find that excluding unrealized gains and losses on equity securities from non-GAAP earnings improves the informativeness of non-GAAP earnings reports,

[20] Similarly, our regression results using equity holding ratio docile to define our treatment firms are consistent, and I find no significant changes in analyst forecast accuracy following the earnings reclassification. See Appendix 9A and 10A.

which suggests that including URGL into net income as required by ASU 2016-01 tends to decrease the informativeness of GAAP earnings. I, however, directly teste the impact of earnings reclassification on GAAP earnings. Consistent with S. Kim et al., 2022, I provide evidence that the informativeness of GAAP earnings including URGL decreased following the rule update.

Both S. Kim et al., 2022 and Amornsiripanitch et al., 2022 study the cross-sectional differences in investors' reactions to the rule update. Amornsiripanitch et al., 2022 find that investors respond more strongly to URGL in earnings for firms with less financial analyst coverage, which suggests investor inattention. Similarly, S. Kim et al., 2022 find that retail investors tend to respond more strongly to URGL included in net income. I also test for possible differences across analyst coverage and retail trades in our sample, but find no significant difference in perceived firm riskiness between retail and institutional investors. One possible explanation is that those two papers use a sample period from 2015 to 2020, while I focus our study on the years 2016 to 2019. I intentionally exclude 2020 in our analysis due to the abnormal stock market performance following the COVID-19 pandemic.

Amornsiripanitch et al., 2022; S. Kim et al., 2022, and Song, Wang, and Wheeler 2022 working paper examine whether insurers adjust their investment portfolio to mitigate the adverse effect of including transitory URGL into net income in earnings (i.e., "real effects" associated with ASU 2016-01). Interestingly, these studies reach different conclusions. Focusing on U.S. public insurers and using annual subsidiary and group level data, S. Kim et al., 2022 find that highly affected insurers (holding more AFS equity securities) neither decrease the size of their investment in stocks nor reduce the risks of their equity investments. Differentiated from S. Kim et al., 2022, the other two papers use both private and public insurers' data at the subsidiary firm level. Both these papers define the treatment group as individual insurance companies with a publicly held parent. Amornsiripanitch et al., 2022 find that public insurers reduce their investment in public stocks. In contrast to Amornsiripanitch et al., 2022, Song et al. (2022 working paper) find that individual insurers do not change the size of their investment in stocks, but do decrease the overall risk of stock investments. Our findings on investors' perceived firm riskiness are consistent with S. Kim et al., 2022. I find no significant change in the market assessment of firm risk, suggesting that investors perceive

the earnings reclassification required by ASU 2016-01 to be a pure change in financial reporting and that it does not change the fundamental operations of insurers. Thus, the increase in earnings volatility and the decrease in earnings persistence does not appear to be reflective of firm performance becoming more volatile. As the market recognizes that firm risk has not increased, ASU 2016-01 would not have induced managers to shift their investment portfolios. In addition, because the majority of U.S. insurers belong to a group, with capital allocation decisions made at the group level, I believe our group-level analysis is the proper approach to analyze the capital market consequences of rule change.

5 Conclusion

In this paper, I provide evidence on the effects of a new accounting standard update—ASU 2016-01—on the information environment of U.S. public insurers. ASU 2016-01 requires firms to reclassify fair value changes in AFS equity investments measured at fair value from other comprehensive income (OCI) into net income. While this rule change removes "intent-based" accounting from the AFS equity securities accounting model, potentially improving earnings quality, it also has the potential to introduce noise to GAAP net income. Using a difference-in-differences approach, I find a decrease in ERCs following ASU 2016-01 for firms that hold relatively more AFS equity securities. I additionally document that the decreased earnings persistence may drive this decrease in investors' response to earnings announcements. However, I do not find evidence of a decrease in market-based measures of firm risk or analyst forecast accuracy, suggesting that the decline in informativeness is restricted to earnings, the area targeted by ASU 2016-01, and not to the overall information environment.

Our findings are important and relevant not only to academics but also to policymakers in that our results speak directly to the costs and benefits of allowing managerial choice when setting accounting standards. Specifically, while ASU 2016-01 removes "intent-based" accounting from the AFS equity securities model, it does so at the cost of less persistent earnings. Despite the decrease in earnings persistence and ERCs, our findings further indicate that the rule change does not alter the overall information environment, suggesting that managers have the ability to provide information to the market using methods

not subject to ASU 2016-01. In addition to our study's policy relevance, our findings contribute to the academic literature on financial institution decisions related to security sales (e.g., Barth et al., 2017; Dong et al., 2014; Ellul et al., 2011; Y.-J. Lee et al., 2006a). Additional analysis on the various potential real effects of ASU 2016-01 may provide a fruitful area for future research.

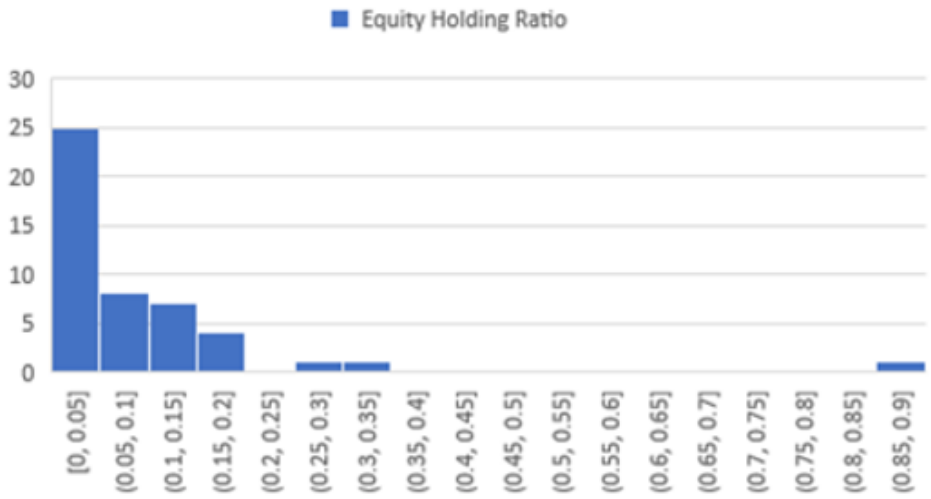
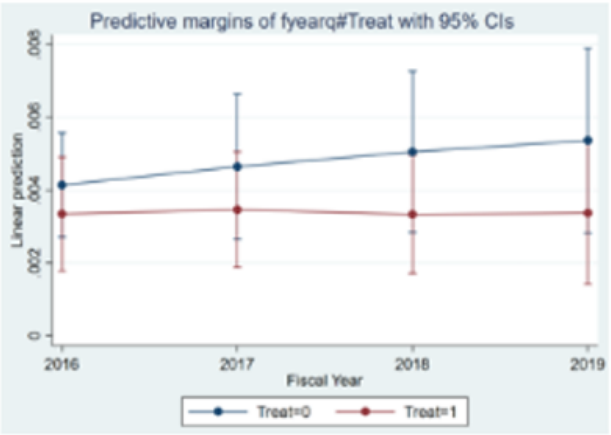
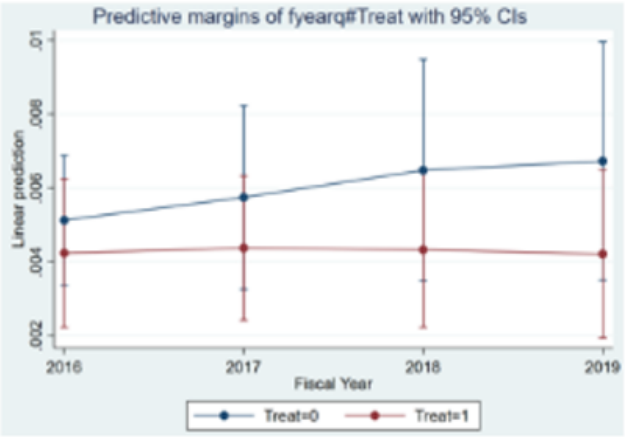


Figure 1: Firms' Equity Holding Ratio Distribution



(a) Abnormal bid-ask spreads parallel trend



(b) Total bid-ask spreads parallel trend

Figure 2: Bid-Ask Spread Parallel Trends

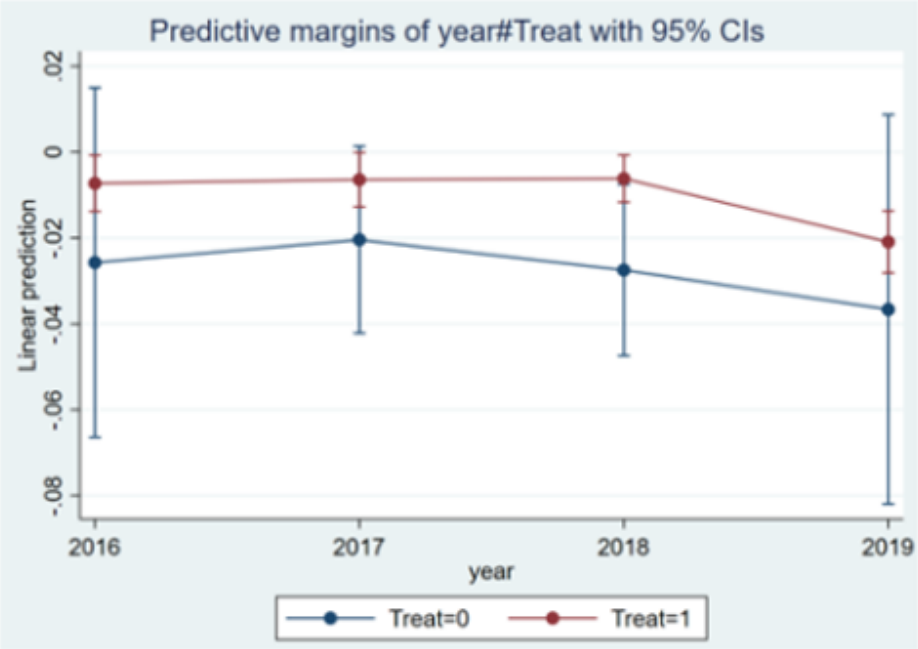
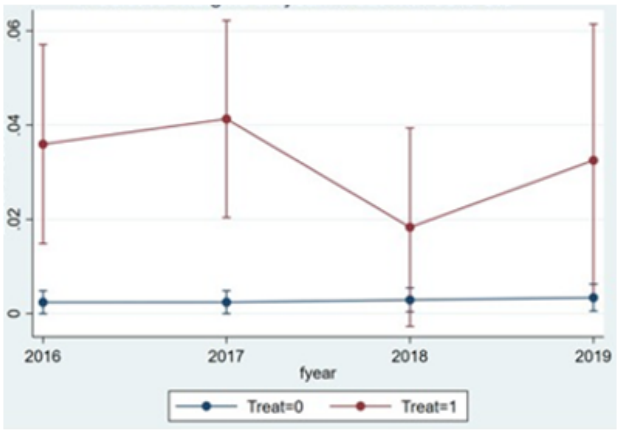
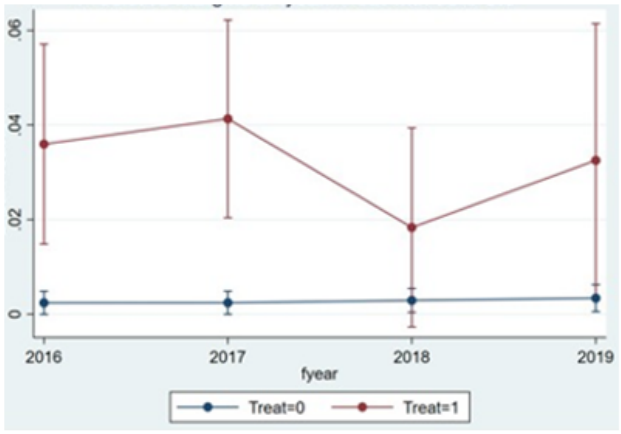


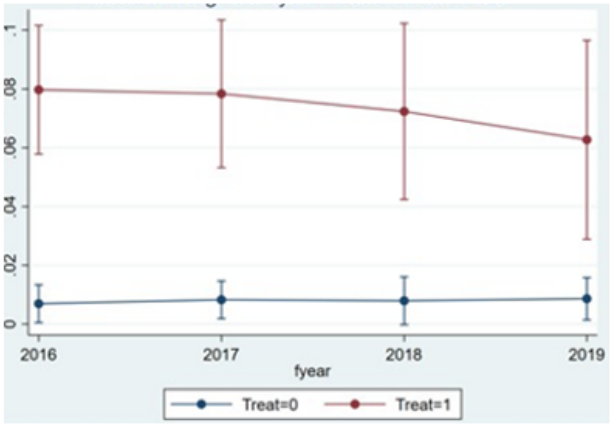
Figure 3: Analysts' Forecast Accuracy Parallel Trends



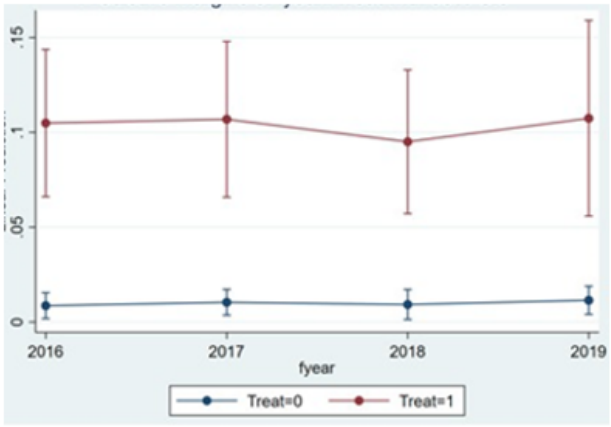
(a) Equity holding ratio = Equity holdings at cost/ Total assets



(b) Equity holding ratio = Equity holdings at market value/ Total assets



(c) Equity holding ratio = Equity holdings at cost/ Total investments



(d) Equity holding ratio = Equity holdings at market value/ Total inv.

Figure 4: Investments Allocation for Control versus Treatment Firms

Table 1: Sample Collection

ERC Sample Selection	Observations
Original observations with SIC=63XX (2016-2019)	2,372
Firms with financial year end in December	2,350
Firms with non-missing total assets, net income	2,022
Firms have UE and CAR	764
Firms have daily market beta	706
Firms with at least 8 observations	582
Firms have seven-year average ratio of equity investments to total assets	573

Bid-Ask Spread Sample Selection	Observations
Original observations with SIC=63XX (2016-2019)	2,372
Firms with financial year end in December	2,350
Firms with non-missing total assets, net income	2,022
Firms have bid-ask spreads	1,170
Firms have CAR	972
Firms have trade volume	913
Firms with at least 8 observations	836
Firms have seven-year average ratio of equity investments to total assets	836

Analyst Forecast Accuracy Sample Selection	Observations
Original observations with SIC=63XX (2016-2019)	2,372
Firms with financial year end in December	2,350
Firms with non-missing total assets, net income	2,022
Firms have analyst forecast accuracy measure	895
Firms have trade volume	885
Firms have institutional ownership info	820
Firms with at least 8 observations	693
Firms have seven-year average ratio of equity investments to total assets	693

Table 2: Descriptive Statistics- Part A

Panel A: ERC Analysis

				Percentiles					
Variable	Mean	Std.	Min	10th	25th	50th	75th	90th	Max
CAR	0.0095	0.0573	-0.1423	-0.0547	-0.022	0.0077	0.0399	0.0739	0.1623
UE	-0.0034	0.0177	-0.0906	-0.014	-0.0026	0.0006	0.0026	0.0061	0.0241
Size	8.0513	1.5388	4.6486	6.0713	6.9877	8.118	9.0884	9.7926	11.8002
Beta	0.8660	0.2863	0.3329	0.5342	0.6674	0.8457	1.0162	1.2516	1.6854
Market-to-Book	1.6213	1.1539	0.1662	0.7670	1.0198	1.284	1.6875	3.0900	6.3524
Liability-to-Surplus	2.9486	2.7249	0.2329	0.6826	1.5458	2.1298	3.2499	6.4563	14.9749
Loss	0.1675	0.3738	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	1.0000
Dispersion	0.1874	0.3428	0.0000	0.0128	0.0294	0.0759	0.1557	0.4061	1.8106
Earnings Persistence	0.2270	0.2524	-0.2154	-0.1203	0.0094	0.2363	0.4296	0.5502	0.7767
Treat	0.5166	0.5002	0.0000	0.0000	0.0000	1.0000	1.0000	1.0000	1.0000
Post	0.4171	0.4935	0.0000	0.0000	0.0000	0.0000	1.0000	1.0000	1.0000
Equity Holding Ratio	0.0729	0.1318	0.0000	0.0000	0.0008	0.0313	0.1075	0.1614	0.8822

Panel B: Bid-Ask Spread Analysis

				Percentiles					
Variable	Mean	Std.	Min	10th	25th	50th	75th	90th	Max
ASPD	0.0040	0.0056	0.0003	0.0006	0.0010	0.0018	0.0043	0.0107	0.0284
TSPD	0.0050	0.0069	0.0005	0.0009	0.0012	0.0023	0.0057	0.0128	0.0346
Equity Holdings Ratio	0.0622	0.0706	0.0000	0.0000	0.0053	0.0351	0.0874	0.1647	0.3150
Price Variance	3.6022	4.6810	0.2348	0.591	1.0435	1.9874	3.9162	8.3386	24.4051
Number of Analysts	30.5993	40.1848	2.0000	4.0000	8.0000	18.0000	33.0000	69.0000	186.0000
Size	9.5249	1.5673	7.1427	7.478	8.4397	9.3422	10.4073	11.6772	13.6080
ROA	0.0060	0.0085	-0.0168	-0.0022	0.0015	0.0051	0.0105	0.0165	0.0288
Liability-to-Surplus	0.7321	0.1183	0.4198	0.6031	0.6638	0.7275	0.8032	0.8837	0.9411
Change-in-ROA	0.0000	0.0094	-0.0255	0.0100	-0.0037	0.0000	0.0033	0.0104	0.0280
Change-in-Leverage	0.0001	0.0139	-0.0363	-0.0139	-0.0058	-0.0008	0.0045	0.0148	0.0482
Loss	0.1495	0.3568	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	1.0000
Institutional Ownership	0.7681	0.1961	0.2189	0.4363	0.685	0.8164	0.9058	0.9628	1.0264
Trade Volume	1.4262	2.1724	0.0139	0.0358	0.1365	0.4794	1.7531	4.3612	10.1290
Abs-CAR	0.0435	0.0415	0.0015	0.006	0.0147	0.033	0.0588	0.0913	0.2023
UE	-1.5787	1.6089	-5.2983	-3.5066	-2.5416	-1.6094	-0.5332	0.6206	1.8856
Post	0.4510	0.4979	0.0000	0.0000	0.0000	0.0000	1.0000	1.0000	1.0000
Treat	0.5156	0.5001	0.0000	0.0000	0.0000	0.0000	1.0000	1.0000	1.0000

Note: This table reports descriptive statistics for the years 2016 to 2019. *CAR* is the three-day abnormal return surrounding the quarterly earnings announcement. *UE* is unexpected earnings scaled by stock price from 2 days prior to the earnings announcement. *Size* is the natural log of market value. *Market-to-Book* is the ratio of market value of equity to the book value of equity. *Liability-to-Surplus* is the ratio of total liabilities excluding debts to the book value of equity. *Loss* is an indicator variable equal to one if a firm reported negative income and zero otherwise. *Beta* is a firm's beta from the CAPM model. *Dispersion* is the standard deviation of analyst EPS forecasts. *Earnings Persistence* is the regression coefficient from regressing quarterly EPS on past quarter's EPS using up to 5 years data.*ASPD* is the (-2,2) days abnormal bid-ask spreads around earnings announcement, scale by stock price. *TSPD* is the (-2,2) days total bid-ask spreads around earnings announcement, scale by stock price. Price Variance is the variance of stock price. *UE(b)* is the log of the absolute value of analysts' EPS errors measured by the difference between firm's actual EPS and the analysts' forecasted EPS. *Number of analysts* is the number of following analysts. *ROA* is the ratio of net income to total assets. *Change-in-ROA* is the change in ROA. *Change-in-Leverage* is the change in Liability-to-Surplus ratio. *Abs-CAR* is the absolute value of cumulative abnormal returns of (-2,2). *Institutional Ownership* is the percentage of stock shares owned by institutional investors. *Trade Volume* is the trading volume in millions (number of trades) on earnings announcement day. *Treat* is a binary variable equal to one if a firm is in our treatment group and zero otherwise. *Post* is a binary variable equal to one for observations in 2018 and later. *Equity holdings ratio* is the ratio of equity investment measured at fair value to total assets on average from year 2010 to 2017.

Table 2: Descriptive Statistics- Part B

Panel C: Non-GAAP Earnings Analyst Forecast Accuracy									
				Percentiles					
Variable	Mean	Std.	Min	10th	25th	50th	75th	90th	Max
Forecast Accuracy	-0.0181	0.1624	-4.0917	-0.0195	-0.0073	-0.0028	-0.0011	-0.0004	0.0000
Size	8.1803	1.5017	3.9733	6.1662	7.0734	8.2799	9.1503	9.9844	12.4527
Loss	0.1700	0.3759	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	1.0000
Forecast Horizon	61.1354	33.2967	0.0000	14.0000	26.0000	73.0000	90.0000	96.0000	124.0000
Forecast Dispersion	0.2510	0.8446	0.0000	0.0145	0.0328	0.0841	0.1702	0.4681	15.2098
Earnings Variance	58.7826	26.307	15.7554	15.9488	17.6036	64.8232	87.524	87.9105	88.0387
Institutional Ownership	0.7362	0.2235	0.0114	0.3328	0.6255	0.8088	0.9042	0.9641	1.0000
Treat	0.5130	0.5002	0.0000	0.0000	0.0000	1.0000	1.0000	1.0000	1.0000
Post	0.4553	0.4984	0.0000	0.0000	0.0000	0.0000	1.0000	1.0000	1.0000
Equity Holding Ratio	0.0637	0.0686	0.0000	0.0000	0.0063	0.0363	0.1084	0.1614	0.3150
Panel D: GAAP Earnings Analyst Forecast Accuracy									
				Percentiles					
Variable	Mean	Std.	Min	10th	25th	50th	75th	90th	Max
Forecast Accuracy	-0.0146	0.0276	-0.1535	-0.0323	-0.0138	-0.0051	-0.0019	-0.0006	0.0000
Size	8.2230	1.4418	5.6783	6.2772	7.0654	8.2799	9.1424	10.2689	11.8002
Loss	0.1650	0.3715	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	1.0000
Forecast Horizon	68.2663	32.2894	6.0000	15.0000	34.0000	84.0000	91.0000	97.0000	112.0000
Forecast Dispersion	0.1914	0.3204	0.0000	0.0000	0.0212	0.0793	0.2071	0.4760	1.6829
Earnings Variance	58.7831	26.3625	15.7554	15.9488	17.6036	64.8232	87.524	87.9105	88.0387
Institutional Ownership	0.7533	0.2143	0.2429	0.3496	0.6448	0.8203	0.9123	0.9697	1.0000
Treat	0.5572	0.4971	0.0000	0.0000	0.0000	1.0000	1.0000	1.0000	1.0000
Post	0.4542	0.4983	0.0000	0.0000	0.0000	0.0000	1.0000	1.0000	1.0000
Equity Holding Ratio	0.0617	0.0679	0.0000	0.0000	0.0063	0.0338	0.1075	0.1647	0.3150

Note: This table reports descriptive statistics for the years 2016 to 2019. *Forecast Accuracy* is the negative of absolute value of the analyst forecast error in EPS, scaled by stock price. *Size* is the natural log of market value. *Loss* is an indicator variable equal to one if a firm reported negative income and zero otherwise. *Forecast Horizon* is the number of days between the date of issuance of analyst's forecasted EPS and the earnings announcement date. *Forecast Dispersion* is the standard deviation of analyst EPS forecasts. *Earnings Variance* is the covariance of quarterly EPS using previous twenty quarters data. *Institutional Ownership* is the percentage of stock shares owned by institutional investors. *Treat* is a binary variable equal to one if a firm is in our treatment group and zero otherwise. *Post* is a binary variable equal to one for observations in 2018 and later. *Equity Holding Ratio* is the ratio of equity investment measured at fair value to total assets on average from year 2010 to 2017.

Table 3: Univariate Differences- Part A

	(1) *Treatment*			(2) *Control*			(1)-(2) Difference		
	n=291			n=282					
	Mean	Median	Std. Dev	Mean	Median	Std. Dev	Mean	Median	Std. Dev
Unrealized G/L-to-Total Earnings	0.0682	0.0041	0.2005	2.9074	0.2575	10.1503	-2.8395***	-0.2534***	-9.9498***
Unrealized G/L Per Share	-0.4085	0.0000	1.8766	-5.6041	0.0018	28.3114	5.1956***	-0.0018***	-26.4348***
Equity Holding/Total Assets	0.0040	0.0007	0.0048	0.0810	0.0655	0.0762	-0.0770***	-0.0648***	-0.0714***

Univariate Differences- ERC Sample

Panel A.: **Prior-Rule Change**

	(1) *Treatment*			(2) *Control*			(1)-(2) Difference		
	n=171			n=163					
	Mean	Median	Std. Dev	Mean	Median	Std. Dev	Mean	Median	Std. Dev
CAR	0.0155	0.0126	0.0537	0.0036	-0.0013	0.0521	0.0120*	0.0139**	0.0016
UE	-0.0019	0.0007	0.0141	-0.0013	0.0004	0.0084	-0.0005	0.0003*	0.0057***
Size	8.1470	8.1487	1.6257	7.7052	7.7110	0.0000	0.4420**	0.3514**	0.3514***
Market-to-Book	1.7423	1.3110	1.2023	1.3226	1.2337	0.4253	0.4200***	0.0773	0.7770***
Liability-to-surplus	2.8619	1.9793	2.4469	2.6666	2.1703	2.2049	0.1950	-0.1910	0.2420
Loss	0.1754	0.0000	0.3815	0.1656	0.0000	0.3729	0.0098	0.0000	0.0086
Beta	1.0141	1.0046	0.2860	0.8682	0.8457	0.2725	0.1460***	0.1589***	0.1355
Dispersion	0.1231	0.0551	0.2325	0.2095	0.0850	0.3084	-0.0865**	-0.0099***	-0.0759***
Earnings Persistence	0.1823	0.1861	0.2565	0.2702	0.2933	0.2182	-0.0879***	-0.1072***	0.0386**
Equity Holding Ratio	0.0040	0.0010	0.0048	0.0811	0.0655	0.0775	-0.0772***	-0.0645***	-0.0727***

Panel B.: **Post-Rule Change**

	(1) *Treatment*			(2) *Control*			(1)-(2) Difference		
	n=120			n=119					
	Mean	Median	Std. Dev	Mean	Median	Std. Dev	Mean	Median	Std. Dev
CAR	0.0073	0.0062	0.0542	0.0133	0.0147	0.0554	-0.0070	-0.0085	-0.0012
UE	-0.0033	0.0005	0.0156	0.0045	0.0005	0.0152	0.0013	0.0000	0.0004
Size	8.4400	8.4493	1.5731	7.9706	7.9987	1.3235	0.4690*	0.4506**	0.2496*
Market-to-Book	1.9706	1.2881	1.4864	1.3739	1.3075	0.5079	0.5970***	-0.0194	0.9785***
Liability-to-surplus	3.5767	2.3722	3.1139	2.4112	2.1717	1.2114	1.1650***	0.2005	1.9025***
Loss	0.1250	0.0000	0.3321	0.2017	0.0000	0.4030	-0.0767	0.0000	-0.0709**
Beta	0.8561	0.8601	0.2113	0.6458	0.6422	0.1541	0.2100***	0.2179***	0.0572***
Dispersion	0.1281	0.0572	0.1998	0.2494	0.1047	0.3750	0.1210	-0.0475	-0.1752***
Earnings Persistence	0.2163	0.2220	0.2668	0.2367	0.2395	0.2428	-0.0203	-0.0175	0.0240
Equity Holding Ratio	0.0039	0.0007	0.0049	0.0807	0.0655	0.0747	-0.0768***	-0.0648***	-0.0698***

Note: This table reports summary statistics and univariate differences for means, medians, and standard deviations for our sample between firms in our treatment and control groups. We report differences in the pre-ASU 2016-01 period and the post-ASU 2016-01 period. *Unrealized G/L-to-Total Earnings* is the ratio of unrealized gains and losses from common stocks to firms' total earnings measured by the product of earnings per share and shares outstanding. *Unrealized G/L Per Share* is the unrealized gains and losses from common stocks per share. *Equity Holding/Total Assets* is the average of the ratio of annual equity holdings measured at fair value to total assets for sample firms between year 2010 and year 2017.*CAR* is the three-day abnormal return surrounding the quarterly earnings announcement. *UE* is unexpected earnings. *Size* is the natural log of assets. *Market-to-Book* is the ratio of market value of assets divided by book value of assets. *Liability-to-surplus* is the ratio of total liabilities excluding debts to the book value of equity. *Loss* is an indicator variable equal to one if a firm reported negative income and zero otherwise. *Beta* is a firm's beta from the CAPM model. *Dispersion* is the standard deviation of analyst EPS forecasts. Statistical significance of differences is based on *t*-tests for means and nonparametric *k*-sample tests for medians. ***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels, respectively.

Table 3: Univariate Differences: Part B

Univariate Differences-Bid-Ask Sample

	Panel A.: **Prior-Rule Change**								
	(1) *Treatment*			(2) *Control*			(1)-(2) Difference		
	n=224			n=235					
	Mean	Median	Std. Dev	Mean	Median	Std. Dev	Mean	Median	Std. Dev
ASPD	0.0032	0.0013	0.0047	0.0044	0.0027	0.0051	-0.0012**	-0.0014***	-0.0004
TSPD	0.0040	0.0017	0.0057	0.0055	0.0036	0.0061	-0.0015**	-0.0019***	-0.0004
Equity holdings	0.0049	0.0036	0.0058	0.0721	0.0591	0.0485	-0.0672***	-0.0555***	-0.0427***
Price Variance	3.1119	2.1771	2.7666	3.2397	1.6303	4.7463	-0.1278	0.5468**	-1.9797***
Number of analysts	38.4598	24.0000	47.0626	28.9915	15.0000	37.8326	9.4683*	9.0000***	9.2300***
Size	10.1401	9.7322	1.6736	8.8877	8.7822	1.1634	1.2524***	0.9500***	0.5102***
ROA	0.0049	0.004	0.0081	0.0057	0.0056	0.0073	-0.0008	-0.0016	0.0008
Liability-to-Surplus	0.7636	0.7668	0.1253	0.6987	0.6988	0.0915	0.0649***	0.0680***	0.0338***
Change-in-ROA	0.0000	0.0001	0.0089	-0.0001	-0.0001	0.0088	0.0001	0.0002	0.0001
Change-in-Leverage	0.0006	-0.0013	0.0137	0.0016	0.0003	0.0147	-0.0010	-0.0016*	-0.0010
Loss	0.1518	0.0000	0.3596	0.1447	0.0000	0.3525	0.0071	0.0000	0.0071
Institutional Ownership	0.8228	0.9011	0.1999	0.7378	0.7764	0.1687	0.0850***	0.1247***	0.0312**
Trade Volume	2197.9901	1071.3255	2656.1009	804.2003	194.7900	1606.9878	1393.789***	876.535***	1049.113***
Abs-CAR	0.0437	0.0299	0.0448	0.0410	0.0320	0.0374	0.0027	-0.0021	0.0074***
UE	-1.5118	-1.5922	1.6590	-1.6586	-1.6607	1.7097	0.1468	0.0685	-0.0507
	Panel B.: **Post-Rule Change**								
	(1) *Treatment*			(2) *Control*			(1)-(2) Difference		
	n=181			n=196					
	Mean	Median	Std. Dev	Mean	Median	Std. Dev	Mean	Median	Std. Dev
ASPD	0.0039	0.0013	0.0067	0.0044	0.0018	0.0062	-0.0005	-0.0005***	0.0005
TSPD	0.0050	0.0016	0.0083	0.0056	0.0024	0.0073	-0.0005	-0.0008***	0.0010*
Equity holdings	0.0051	0.0036	0.0059	0.0734	0.0591	0.0490	-0.0683***	-0.0555***	-0.0431***
Price Variance	4.3155	2.2173	5.26	3.9383	2.0552	5.6111	0.3770	0.1621	-0.3511
Number of analysts	29.8564	22.0000	39.1828	24.2296	14.0000	33.6402	5.6270	8.0000***	5.5426**
Size	10.2301	10.2523	1.7100	8.9347	8.7721	1.1211	1.2950***	1.4802***	0.5889***
ROA	0.0066	0.0035	0.0096	0.0072	0.007	0.0092	-0.0006	-0.0035*	0.0004
Leverage	0.7715	0.8061	0.1408	0.6995	0.7135	0.0927	0.0720***	0.0926***	0.0481***
Change-in-ROA	0.0005	-0.0001	0.0077	-0.0003	-0.0005	0.0116	0.0008	0.0004	-0.0039***
Change-in-Leverage	-0.0006	-0.0018	0.0132	-0.0013	-0.0008	0.0138	0.0006	-0.0010	-0.0006
Loss	0.1271	0.0000	0.3340	0.1735	0.0000	0.3796	-0.0464	0.0000	-0.0456*
Institutional Ownership	0.7867	0.8702	0.2210	0.7247	0.7688	0.1816	0.0620**	0.1014***	0.0394***
Trade Volume	1946.7473	1019.4690	2453.010	809.416	279.139	1305.319	1137.331***	740.329***	1147.690***
Abs-CAR	0.0415	0.0316	0.0395	0.0484	0.0383	0.0437	-0.0069	-0.0067	-0.0042
UE	-1.6804	-1.8018	1.4762	-1.4656	-1.4919	1.5435	-215.0000	-0.3099	-0.0673

Note: This table reports descriptive statistics for the years 2016 to 2019. *ASPD* is the (-2,2) days abnormal bid-ask spreads around earnings announcement, scale by stock price. *TSPD* is the (-2,2) days total bid-ask spreads around earnings announcement, scale by stock price. *Equity holdings* is annual ratio of equity investments measured at fair value to the total assets. *Price Variance* is the variance of stock price. *UE* is the log of the absolute value of analysts' EPS errors measured by the difference between firms' actual EPS and the analysts' forecasted EPS. *Number of analysts* is the number of following analysts. *ROA* is the ratio of net income to total assets. *Size* is the natural log of total assets. *Liability-to-Surplus* is the ratio of total liabilities excluding debts to the book value of equity. *Change-in-ROA* is the change in ROA. *Change-in-Leverage* is the change in Liability-to-Surplus ratio. *Abs-CAR* is the absolute value of cumulative abnormal returns of (-2,2).*Institutional Ownership* is the percentage of stock shares owned by institutional investors .*Trade Volume* is the trading volume in thousands(number of trades) on earnings announcement day. *Loss* is an indicator variable equal to one if a firm reported negative income and zero otherwise.

Table 3: Univariate Differences: Part C

Univariate Differences-Analyst Forecast Sample

	Panel A.: **Prior-Rule Change**								
	(1) *Treatment*			(2) *Control*			(1)-(2) Difference		
	n=224			n=235					
	Mean	Median	Std. Dev	Mean	Median	Std. Dev	Mean	Median	Std. Dev
AFaccuracy	-0.0115	-0.0029	0.0256	-0.0065	-0.0036	0.0110	-0.0050*	0.0007	0.0146***
Loss	0.1848	0.0001	0.3892	0.1497	0.0001	0.3578	0.0351	0.0001	0.0314
Fhorizon	66.5054	83.0000	31.4406	56.7807	62.0000	32.8067	9.7247**	21.0000***	-1.3661
Dispersion	0.1932	0.0839	0.3434	0.2575	0.0963	0.4238	-0.0643	-0.0124*	-0.0804***
Size	8.5716	8.4413	1.4196	7.6705	7.6240	1.3441	0.9011***	0.8173***	0.0755
EarningsCOV	67.7968	64.8292	8.2455	66.9647	64.8232	7.3265	0.8321	0.0060	0.9190
Institutional Ownership	0.7878	0.8763	0.2210	0.6973	0.7380	0.2094	0.0905***	0.1383***	0.0116
Equity Holdings	0.0047	0.0035	0.0050	0.0665	0.0600	0.0439	-0.0618***	-0.0565***	-0.0389***
	Panel B.: **Post-Rule Change**								
	(1) *Treatment*			(2) *Control*			(1)-(2) Difference		
	n=181			n=196					
	Mean	Median	Std. Dev	Mean	Median	Std. Dev	Mean	Median	Std. Dev
AFaccuracy	-0.0111	-0.0022	0.0258	-0.0093	-0.0046	0.0131	-0.0018	0.0024***	0.0127***
Loss	0.1438	0.0000	0.3520	0.1795	0.0001	0.3850	-0.0357	0.0001	-0.0330
Fhorizon	64.2484	77.0000	31.7555	60.9038	70.0000	30.4164	3.3446	7.0000	1.3391
Dispersion	0.1883	0.0979	0.2825	0.2830	0.0980	0.4951	-0.0947*	-0.00001***	-0.2126***
Size	8.7386	8.6749	1.3828	7.9247	7.9759	1.3925	0.8139***	0.6990	-0.0097
EarningsCOV	49.1396	17.6036	35.5922	48.9665	17.6036	35.5844	0.1731	0.0001	0.0078
Institutional Ownership	0.7915	0.8688	0.2161	0.6664	0.7268	0.2129	0.1251***	0.1420	0.0032
Equity Holdings	0.0045	0.0030	0.0052	0.0700	0.0625	0.0473	-0.0655***	-0.0595***	-0.0421***

Note: This table reports descriptive statistics for the years 2016 to 2019. *AFaccuracy*is the negative value of the analyst forecast error in EPS, scaled by stock price. *Size* is the natural log of market value. *Loss* is an indicator variable equal to one if a firm reported negative income and zero otherwise. *Fhorizon* is forecast horizon measured by the number of days between the date of issuance of analyst's forecasted EPS and the earnings announcement date. *Dispersion* is the standard deviation of the analyst's forecasted EPS. *EarningsCOV* is earnings variance measured by the covariance of quarterly EPS using previous twenty quarters data. *Institutional Ownership* is the percentage of stock shares owned by institutional investors. ***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels, respectively.

Table 4: Pearson Correlations

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
ASPD(1)	1.0000														
TSPD(2)	0.9918*	1.0000													
Equity holdings(3)	0.0906*	0.0907*	1.0000												
	(0.0088)	(0.0087)													
Price Variance(4)	-0.0803*	-0.0876*	0.1411*	1.0000											
	(0.0203)	(0.0113)	(0.0000)												
UE(5)	0.0176	0.0263	0.061	0.3778*	1.0000										
	(0.6106)	(0.4468)	(0.078)	(0.0000)											
Number of analysts(6)	-0.2212*	-0.2263*	-0.0990*	0.0769*	0.2612*	1.0000									
	(0.0000)	(0.0000)	(0.0042)	(0.0262)	(0.0000)										
ROA(7)	-0.1356*	-0.1513*	0.0558	0.1517*	-0.1291*	-0.0338	1.0000								
	(0.0001)	(0.0000)	(0.1069)	(0.0000)	(0.0002)	(0.3297)									
Size(8)	-0.4025*	-0.4095*	-0.2352*	0.1178*	0.0138	0.3255*	-0.1143*	1.0000							
	(0.0000)	(0.0000)	(0.0000)	(0.0006)	(0.6913)	(0.0000)	(0.0009)								
Leverage(9)	-0.0545	-0.0524	-0.2467*	-0.1781*	-0.0665	0.0766*	-0.4338*	0.5132*	1.0000						
	(0.1151)	(0.1300)	(0.0000)	(0.0000)	(0.0546)	(0.0268)	(0.0000)	(0.0000)							
Change-in-ROA(10)	-0.0038	-0.0106	-0.0141	0.0171	-0.0330	-0.0768*	0.5432*	0.0056	-0.0200	1.0000					
	(0.9155)	(0.7677)	(0.6945)	(0.6337)	(0.3574)	(0.032)	(0.0000)	(0.876)	(0.5766)						
Change-in-Leverage(11)	0.0506	0.0604	0.0181	0.0065	0.0696	-0.0602	-0.4220*	-0.0163	0.1451*	-0.3138*	1.0000				
	(0.158)	(0.0919)	(0.6149)	(0.8558)	(0.0522)	(0.0933)	(0.0000)	(0.6488)	(0.0000)	(0.0000)					
Abs-CAR(12)	0.0557	0.0768*	0.0156	0.0418	0.0984*	-0.0973*	-0.0657	-0.1759*	0.0259	0.0341	0.0501	1.0000			
	(0.1077)	(0.0264)	(0.6530)	(0.2275)	(0.0044)	(0.0049)	(0.0577)	(0.0000)	(0.4543)	(0.3425)	(0.1626)				
Institutional Ownership(13)	-0.4420*	-0.4503*	-0.3189*	0.1658*	0.0771*	0.1917*	0.1110*	0.1611*	-0.039	0.0245	-0.0046	-0.0396	1.0000		
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0258)	(0.0000)	(0.0013)	(0.0000)	(0.2598)	(0.4947)	(0.8972)	(0.2522)			
Trade Volume(14)	-0.1771*	-0.1699*	-0.1930*	-0.0342	-0.1272*	0.2786*	0.1285*	0.4949*	0.0657	0.047	-0.0809*	0.0604	0.1339*	1.0000	
	(0.0000)	(0.0000)	(0.0000)	(0.323)	(0.0002)	(0.0000)	(0.0002)	(0.0000)	(0.0576)	(0.19)	(0.0239)	(0.0812)	(0.0001)		
Loss(15)	0.1719*	0.1873*	0.034	-0.0637	0.2351*	0.0751*	-0.6173*	-0.0907*	0.0849*	-0.3857*	0.3185*	0.1162*	-0.0837*	-0.0308	1.0000
	(0.0000)	(0.0000)	(0.3267)	(0.0657)	(0.0000)	(0.0299)	(0.0000)	(0.0087)	(0.0141)	(0.0000)	(0.0000)	(0.0008)	(0.0155)	(0.3736)	

Note: This table reports descriptive statistics for the years 2016 to 2019. *ASPD* is the (-2,2) days abnormal bid-ask spreads around earnings announcement, scale by stock price. *TSPD* is the (-2,2) days total bid-ask spreads around earnings announcement, scale by stock price. *Equity holdings* is annual ratio of equity investments measured at fair value to the total assets. *Price Variance* is the variance of stock price. *UE* is the log of the absolute value of analysts' EPS errors measured by the difference between firms' actual EPS and the analysts' forecasted EPS. *Number of analysts* is the number of following analysts. *ROA* is the ratio of net income to total assets. *Size* is the natural log of total assets. *Leverage* is the leverage ratio. *Change-in-ROA* is the change in ROA. *Change-in-Leverage* is the change in leverage ratio. *Abs-CAR* isabsolute value of cumulative abnormal returns of (-2,2).*Institutional Ownership* is the percentage of stock shares owned by institutional investors .*Trade Volume* is the trading volume (number of trades) on earnings announcement day. *Loss* is an indicator variable equal to one if a firm reported negative income and zero otherwise.

Table 5: Earnings Response Coefficients Surrounding ASU 2016-01

	Dependent Variable:CAR					
	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	OLS	Robust	Robust	Robust	Robust	Robust
UExPOSTxTREAT		-2.5903***	-2.5530***	-2.1363***	-1.9941***	-2.1504***
		(0.9457)	(0.8492)	(0.6331)	(0.6850)	(0.6003)
UE	1.0011***	0.4030	0.4971*	1.1510	1.4308	1.4197
	(0.2108)	(0.3429)	(0.2868)	(1.1227)	(1.2056)	(1.0963)
UExPOST		0.7960*	0.9763***	1.2175*	1.1898**	1.7046***
		(0.4447)	(0.3715)	(0.6230)	(0.5950)	(0.6177)
UExTREAT		2.5252***	2.7790***	2.4586***	2.2127***	2.3664***
		(0.6635)	(0.6266)	(0.6160)	(0.6054)	(0.6045)
Post		-0.0043				
		(0.0070)				
Treat		-0.0078				
		(0.0054)				
POSTxTREAT		0.0151*	0.0099	0.0139	0.0147*	0.0092
		(0.0091)	(0.0083)	(0.0088)	(0.0083)	(0.0083)
UExSize				-0.0959	-0.1933	-0.2108
				(0.1424)	(0.1551)	(0.1380)
UExMar_to_book				0.9037**	0.9846***	0.9745***
				(0.3812)	(0.3778)	(0.3628)
UExBeta				1.7868*	1.9292**	2.0460**
				(0.9233)	(0.8227)	(0.9151)
UExLiability_Ratio				-0.1148*	-0.0688	-0.0943*
				(0.0667)	(0.0603)	(0.0565)
UExLoss				-1.2715***	-1.4162***	-1.7649***
				(0.4167)	(0.4051)	(0.4438)
UExDispersion				-0.8286*	-0.8158*	-0.7354*
				(0.4231)	(0.4802)	(0.4425)
UExPersistence				-2.6032***	-2.4856**	-2.0154**
				(0.9238)	(1.0117)	(0.8312)
1.PC					-0.0029	
					(0.0074)	
Constant	0.0129***	0.0158***	0.5933***	0.0236	0.0666***	0.5489***
	(0.0023)	(0.0041)	(0.1098)	(0.0203)	(0.0183)	(0.1073)
Observations	573	573	573	573	573	573
Firm Characteristics	No	No	Yes	No	Yes	Yes
Year-Quarter FE	No	No	Yes	Yes	Yes	Yes
Business Line FE	No	No	No	No	Yes	No
Firm FE	No	No	Yes	Yes	No	Yes
Error Cluster	Date	Date	Date	Date	Date	Date
R-squared	0.0952	0.1431	0.3529	0.3391	0.2886	0.4210

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Note: This table reports results from ordinary least squares regressions. The dependent variable is *CAR*. *CAR* is the three-day abnormal return surrounding the quarterly earnings announcement. *UE* is unexpected earnings scaled by stock price from 2 days prior to the earnings announcement. *Size* is the natural log of market value. *Market-to-Book* is the ratio of market value of equity to the book value of equity. *Liability-to-surplus* is the ratio of total liabilities excluding debts to the book value of equity. *Loss* is an indicator variable equal to one if a firm reported negative income and zero otherwise. *Beta* is a firm's beta from the CAPM model. *Dispersion* is the standard deviation of analyst EPS forecasts. *Earnings Persistence* is the regression coefficient from regressing quarterly EPS on past quarter's EPS using up to 5 years data. *Treat* is a binary variable equal to one if a firm is in our treatment group and zero otherwise. *Post* is a binary variable equal to one for observations in 2018 and later. Standard errors are presented in parentheses beneath each coefficient estimate. ***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels, respectively.

Table 6: ERC-Entropy Balanced Results

	Dependent Variable:CAR					
	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	OLS	Robust	Robust	Robust	Robust	Robust
UExPOSTxTREAT		-2.0477**	-1.9167**	-1.4158**	-1.3157*	-1.3825**
		(1.0342)	(0.8687)	(0.6833)	(0.7327)	(0.6636)
UE	1.3165***	1.0337*	1.1185**	0.0126	0.2452	0.1805
	(0.2076)	(0.5477)	(0.4681)	(1.2700)	(1.2442)	(1.2328)
UExPOST		0.2534	0.4604	1.1778*	1.1399*	1.6418**
		(0.6098)	(0.5103)	(0.6917)	(0.6436)	(0.6918)
UExTREAT		1.8945**	2.2499***	1.6491**	1.4538**	1.7500***
		(0.7605)	(0.7097)	(0.6432)	(0.6291)	(0.6295)
Post		0.0051				
		(0.0091)				
Treat		-0.0028				
		(0.0069)				
POSTxTREAT		0.0057	0.0072	0.0063	0.0049	0.0047
		(0.0110)	(0.0109)	(0.0095)	(0.0093)	(0.0093)
UExSize				0.0497	-0.0028	-0.0829
				(0.1441)	(0.1461)	(0.1548)
UExMar_to_book				1.2369***	1.2914***	1.3844***
				(0.2889)	(0.3282)	(0.3490)
UExBeta				3.0400***	3.1509***	3.4265***
				(1.1215)	(0.9753)	(1.0856)
UExLiability_Ratio				-0.3347***	-0.3157***	-0.3226***
				(0.1107)	(0.1158)	(0.1091)
UExLoss				-1.1712**	-1.0442**	-1.2565**
				(0.5092)	(0.4808)	(0.5570)
UExDispersion				-1.2337***	-1.2778***	-1.1526**
				(0.4535)	(0.4907)	(0.4817)
UExPersistence				-2.7509***	-3.0297***	-2.5735***
				(1.0199)	(1.0402)	(0.9594)
1.PC					-0.0068	
					(0.0093)	
Constant	0.0127***	0.0108*	0.5903***	0.0135	0.0493**	0.5896***
	(0.0027)	(0.0056)	(0.1291)	(0.0170)	(0.0199)	(0.1224)
Observations	573	573	573	573	573	573
Firm Characteristics	No	No	Yes	No	Yes	Yes
Year-Quarter FE	No	No	Yes	Yes	Yes	Yes
Business Line FE	No	No	No	No	Yes	No
Firm FE	No	No	Yes	Yes	No	Yes
Error Cluster	Date	Date	Date	Date	Date	Date
R-squared	0.1418	0.1703	0.3769	0.3951	0.3368	0.4648

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Note: This table reports results from ordinary least squares regressions. The dependent variable is *CAR*. *CAR* is the three-day abnormal return surrounding the quarterly earnings announcement. *UE* is unexpected earnings scaled by stock price from 2 days prior to the earnings announcement. *Size* is the natural log of market value. *Market-to-Book* is the ratio of market value of equity to the book value of equity. *Liability-to-surplus* is the ratio of total liabilities excluding debts to the book value of equity. *Loss* is an indicator variable equal to one if a firm reported negative income and zero otherwise. *Beta* is a firm's beta from the CAPM model. *Dispersion* is the standard deviation of analyst EPS forecasts. *Earnings Persistence* is the regression coefficient from regressing quarterly EPS on past quarter's EPS using up to 5 years data. *Treat* is a binary variable equal to one if a firm is in our treatment group and zero otherwise. *Post* is a binary variable equal to one for observations in 2018 and later. Standard errors are presented in parentheses beneath each coefficient estimate. ***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels, respectively.

Table 7: Changes in Earnings Persistence

	Treat ≡ *Median*		*Treat* ≡ *Mean*	
	(1)	(2)	(3)	(4)
VARIABLES	Robust	Robust	Robust	Robust
POSTxTREAT	-0.0518	-0.0532	-0.1059**	-0.0977**
	(0.0452)	(0.0412)	(0.0426)	(0.0395)
Post	0.0496	0.0432	0.0663**	0.0924
	(0.0450)	(0.0667)	(0.0321)	(0.0650)
Treat	0.4223***	0.5578***	-0.1636*	-0.1804**
	(0.1272)	(0.1341)	(0.0834)	(0.0805)
Size	0.0974	0.1030	-0.0279	-0.0274
	(0.0686)	(0.0713)	(0.0608)	(0.0627)
Market_to_Book	0.0454	0.0878	0.0971	0.1485**
	(0.0532)	(0.0578)	(0.0595)	(0.0645)
liability_to_surplus	0.0025	0.0058	0.0130*	0.0151**
	(0.0104)	(0.0099)	(0.0075)	(0.0063)
Loss	0.0034	0.0036	-0.0304	-0.0154
	(0.0294)	(0.0294)	(0.0326)	(0.0324)
Beta	0.1263*	0.2251***	0.0687	0.1645**
	(0.0648)	(0.0741)	(0.0719)	(0.0817)
Dispersion	-0.0440	-0.0409	-0.0270	-0.0170
	(0.0612)	(0.0633)	(0.0519)	(0.0535)
Constant	-1.0934**	-1.3268***	0.2071	0.1292
	(0.4829)	(0.5000)	(0.4050)	(0.4152)
Observations	573	573	573	573
Year-Quarter FE	No	Yes	No	Yes
Firm FE	Yes	Yes	Yes	Yes
Error	Robust	Robust	Robust	Robust
R-squared	0.5310	0.5691	0.5231	0.5529

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Note: This table reports results from ordinary least squares regressions. The dependent variable is *CAR*. *CAR* is the three-day abnormal return surrounding the quarterly earnings announcement. *UE* is unexpected earnings scaled by stock price from 2 days prior to the earnings announcement. *Size* is the natural log of market value. *Market-to-Book* is the ratio of market value of equity to the book value of equity. *Liability-to-surplus* is the ratio of total liabilities excluding debts to the book value of equity. *Loss* is an indicator variable equal to one if a firm reported negative income and zero otherwise. *Beta* is a firm's beta from the CAPM model. *Dispersion* is the standard deviation of analyst EPS forecasts. *Earnings Persistence* is the regression coefficient from regressing quarterly EPS on past quarter's EPS using up to 5 years data. *Treat* is a binary variable equal to one if a firm is in our treatment group and zero otherwise. *Post* is a binary variable equal to one for observations in 2018 and later. Standard errors are presented in parentheses beneath each coefficient estimate. ***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels, respectively.

Table 8: Determinants of Bid-Ask Spreads

	Dependent Variable: ASPD						*Dependent Variable: TSPD*					
VARIABLES	(1) OLS	(2) Robust	(3) Robust	(4) Robust	(5) Robust	(6) OLS	(7) Robust	(8) Robust	(9) Robust	(10) Robust	(11)	(12)
PostxTreat		-0.0001	-0.0001	-0.0001	-0.0001	-0.0001		-0.0001	-0.0001	-0.0002	-0.0002	-0.0002
		(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)		(0.0002)	(0.0001)	(0.0001)	(0.0001)	(0.0001)
POST	0.0004	0.0009	0.0007	0.0010	0.0010		0.0005	0.0012	0.0011	0.0014*	0.0014*	
	(0.0004)	(0.0008)	(0.0006)	(0.0006)	(0.0006)		(0.0005)	(0.0010)	(0.0008)	(0.0008)	(0.0008)	
Treat	0.0002***	0.0003***	-0.0003***				0.0003***	0.0003***	-0.0003***			
	(0.0001)	(0.0001)	(0.0001)				(0.0001)	(0.0001)	(0.0001)			
price_variance			0.0001*	-0.0000	-0.0000	-0.0001			0.0001*	-0.0001	-0.0001	-0.0001*
			(0.0000)	(0.0000)	(0.0000)	(0.0000)			(0.0000)	(0.0000)	(0.0000)	(0.0000)
UE			0.0002	0.0001	0.0001	0.0001			0.0003*	0.0001	0.0001	0.0001
			(0.0001)	(0.0001)	(0.0001)	(0.0001)			(0.0002)	(0.0001)	(0.0001)	(0.0001)
number_analysts			-0.0000***	0.0000	0.0000	0.0000			-0.0000***	0.0000	0.0000	0.0000
			(0.0000)	(0.0000)	(0.0000)	(0.0000)			(0.0000)	(0.0000)	(0.0000)	(0.0000)
ROA			-0.1523***	0.0192	0.0192	0.0133			-0.1980***	0.0117	0.0117	0.0061
			(0.0304)	(0.0454)	(0.0454)	(0.0419)			(0.0376)	(0.0516)	(0.0516)	(0.0484)
Size			-0.0018***	-0.0010	-0.0010	-0.0014			-0.0022***	-0.0012	-0.0012	-0.0015
			(0.0001)	(0.0011)	(0.0011)	(0.0012)			(0.0002)	(0.0013)	(0.0013)	(0.0014)
Change_in_ROA			0.0800***	0.0177	0.0177	0.0167			0.0986***	0.0231	0.0231	0.0228
			(0.0272)	(0.0267)	(0.0267)	(0.0249)			(0.0334)	(0.0320)	(0.0321)	(0.0296)
Change_in_Leverage			-0.0047	0.0018	0.0018	0.0017			-0.0039	0.0043	0.0043	0.0039
			(0.0111)	(0.0082)	(0.0082)	(0.0082)			(0.0135)	(0.0066)	(0.0066)	(0.0068)
Abs_CAR			-0.0136**	0.0018	0.0018	0.0010			-0.0141**	0.0041	0.0041	0.0034
			(0.0060)	(0.0052)	(0.0052)	(0.0051)			(0.0071)	(0.0062)	(0.0062)	(0.0061)
institutional_share			-0.0123***	0.0009	0.0009	0.0018			-0.0151***	0.0008	0.0008	0.0016
			(0.0014)	(0.0011)	(0.0011)	(0.0014)			(0.0016)	(0.0013)	(0.0013)	(0.0018)
vol			0.0000***	0.0000	0.0000	0.0000			0.0000***	0.0000*	0.0000*	0.0000**
			(0.0000)	(0.0000)	(0.0000)	(0.0000)			(0.0000)	(0.0000)	(0.0000)	(0.0000)
Loss			0.0004	0.0002	0.0002	0.0004			0.0004	0.0002	0.0002	0.0003
			(0.0008)	(0.0006)	(0.0006)	(0.0006)			(0.0010)	(0.0006)	(0.0006)	(0.0006)
Constant	0.0025***	0.0023***	0.0330***	0.0129	0.0129	0.0163	0.0032***	0.0029***	0.0410***	0.0156	0.0156	0.0190
	(0.0004)	(0.0005)	(0.0023)	(0.0108)	(0.0108)	(0.0120)	(0.0005)	(0.0006)	(0.0028)	(0.0129)	(0.0129)	(0.0143)
Observations	836	836	779	779	779	836	836	779	779	779		
Firm Characteristics	No	No	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes
Year-Quarter FE	No	No	No	No	No	Yes	No	No	No	No	No	Yes
Business Line FE	No	No	No	No	Yes	Yes	No	No	No	No	Yes	Yes
Error Cluster	Robust	Robust	Robust	Firm	Firm	Firm Robust	Robust	Robust	Firm	Firm	Firm	
R-squared	0.0162	0.0168	0.3849	0.7423	0.7423	0.7502	0.0163	0.0171	0.4056	0.7926	0.7926	0.7974

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Note:This table reports results from ordinary least squares regressions. *ASPD* is the (-2,2) days abnormal bid-ask spreads around earnings announcement, scale by stock price. *TSPD* is the (-2,2) days total bid-ask spreads around earnings announcement, scale by stock price. Price Variance is the variance of stock price. *UE(b)* is the log of the absolute value of analysts' EPS errors measured by the difference between firm's actual EPS and the analysts' forecasted EPS. *Number of analysts* is the number of following analysts. *ROA* is the ratio of net income to total assets. *Change-in-ROA* is the change in ROA. *Change-in-Leverage* is the change in Liability-to-Surplus ratio. *Abs-CAR* is the absolute value of cumulative abnormal returns of (-2,2). *Institutional Ownership* is the percentage of stock shares owned by institutional investors. *Trade Volume* is the trading volume in millions (number of trades) on earnings announcement day. *Treat* is a binary variable equal to one if a firm is in our treatment group and zero otherwise. *Post* is a binary variable equal to one for observations in 2018 and later. Standard errors are presented in parentheses beneath each coefficient estimate. ***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels, respectively.

Table 9: Determinants of Operational Risk

Dependent Variables: Measures of Firm's Operational Risk					
	(1)	(2)	(3)	(4)	(5)
VARIABLES	SE-RET	Beta	IMVOL_91	IMVOL_182	IMVOL_365
PostxTreat	0.0003	-0.0030	-0.0025	-0.0027	0.0220**
	(0.0009)	(0.0344)	(0.0117)	(0.0113)	(0.0089)
ROA	-0.0004	-1.0788	-0.0274	0.7467	-0.7572
	(0.0347)	(1.4741)	(0.4917)	(0.5561)	(1.0179)
Size	-0.0012	-0.1251	-0.0387	-0.0437	0.0432**
	(0.0021)	(0.0911)	(0.0267)	(0.0338)	(0.0151)
Market_to_Book	-0.0010	-0.0360	-0.0096	0.0052	-0.0573***
	(0.0014)	(0.0636)	(0.0132)	(0.0166)	(0.0095)
liability_to_surplus	0.0001	0.0018	0.0058	0.0071	-0.0014
	(0.0002)	(0.0069)	(0.0061)	(0.0058)	(0.0013)
Leverage	-0.0022	-0.0207	-0.0101	-0.0217	0.0265
	(0.0024)	(0.0729)	(0.0161)	(0.0202)	(0.0184)
Loss	0.0008	0.0145	0.0037	0.0192	0.0165**
	(0.0006)	(0.0239)	(0.0092)	(0.0142)	(0.0058)
Change_in_ROA	0.0519*	0.3896	-0.1253	-0.1820	1.2215
	(0.0327)	(0.7714)	(0.2243)	(0.2312)	(0.7080)
Change_in_Leverage	0.0082**	0.2222	0.0945***	0.1391***	0.1614**
	(0.0157)	(0.1615)	(0.0356)	(0.0448)	(0.0630)
Beta	0.0001				
	(0.0015)				
SD_RET		2.9777			
		(3.1951)			
Constant	0.0259	1.7799**	0.5802***	0.6087**	-0.1326
	(0.0157)	(0.6921)	(0.2103)	(0.2650)	(0.1508)
Observations	1,010	1,010	1,111	812	229
Year-Quarter FE	Yes	Yes	Yes	Yes	Yes
Business line FE	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes
Error Cluster	Firm	Firm	Firm	Firm	Firm
R-squared	0.6058	0.6814	0.8542	0.8413	0.9385

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Note: This table reports results from ordinary least squares regressions. *SD-RET* is the variance of stock return on the earnings announcement date. *Beta* is firm's daily beta on earnings announcement date estimated by market model using Beta Suite by WRDS. *IMVOL-91/182/365* is the implied volatility of options with expirations period is 91/182/365 days. *Size* is the natural log of total assets. *Market-to-Book* is the ratio of market value of equity to the book value of equity. *Liability-to-surplus* is the ratio of total liabilities excluding debts to the book value of equity. *Loss* is an indicator variable equal to one if a firm reported negative income and zero otherwise. *ROA* is the ratio of net income to total assets. *Change-in-ROA* is the change in ROA. Change-in-Leverage is the change in leverage ratio. *Abs-CAR* is absolute value of cumulative abnormal returns of (-2,2). *Treat* is a binary variable equal to one if a firm is in our treatment group and zero otherwise. *Post* is a binary variable equal to one for observations in 2018 and later. ***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels, respectively.

Table 10: Non-GAAP Forecast Accuracy Changes

Dependent Variable: Analyst Forecast Accuracy-Non GAAP					
	(1)	(2)	(3)	(4)	(5)
VARIABLES	OLS	Robust	Robust	Robust	Robust
PostxTreat		0.0309	0.0288	0.0184	0.0149
		(0.0256)	(0.0320)	(0.0209)	(0.0187)
Post	-0.0182	-0.0323		-0.0467	
	(0.0138)	(0.0236)		(0.0346)	
Treat	0.0236*	0.0233**	0.0235		
	(0.0129)	(0.0093)	(0.0151)		
Size		0.0151**	0.0153	0.1597	0.1710*
		(0.0076)	(0.0112)	(0.1018)	(0.1011)
Loss		-0.0521*	-0.0441*	-0.0229	-0.0070
		(0.0282)	(0.0260)	(0.0156)	(0.0097)
Fhorizon		-0.0002	-0.0001	-0.0003	-0.0003
		(0.0002)	(0.0001)	(0.0003)	(0.0003)
Dispersion		0.0004	0.0008	-0.0004	0.0031*
		(0.0014)	(0.0022)	(0.0015)	(0.0018)
EearningsCOV		0.0003		0.0002	
		(0.0003)		(0.0002)	
InsOwnership		0.0124	0.0147	0.0126	0.0264
		(0.0100)	(0.0256)	(0.0283)	(0.0336)
PC		-0.0064	-0.0060		
		(0.0076)	(0.0117)		
Constant	-0.0219***	-0.1476**	-0.1523	-1.3064	-1.4227*
	(0.0068)	(0.0704)	(0.1110)	(0.8074)	(0.8250)
Observations	694	694	694	694	694
Year-Quarter FE	No	No	Yes	No	Yes
Business Line FE	No	No	No	PC	No
Firm FE	No	No	No	Yes	Yes
Error Cluster	Robust	Robust	Firm	Firm	Firm
R-squared	0.0082	0.0595	0.0671	0.2918	0.3062

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Note: This table reports results from ordinary least squares regressions. The dependent variable is analyst Forecast Accuracy, which is the negative value of the analyst forecast error in EPS, scaled by stock price. *Size* is the natural log of market value. *Loss* is an indicator variable equal to one if a firm reported negative income and zero otherwise. *Fhorizon* is forecast horizon measured by the number of days between the date of issuance of analyst's forecasted EPS and the earnings announcement date. *Dispersion* is the standard deviation of the analyst's forecasted EPS. *EarningsCOV* is earnings variance measured by the covariance of quarterly EPS using previous twenty quarters data. *Institutional Ownership* is the percentage of stock shares owned by institutional investors. ***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels, respectively.

Table 11: GAAP Forecast Accuracy Changes

Dependent Variable: Analyst Forecast Accuracy-GAAP					
	(1)	(2)	(3)	(4)	(5)
VARIABLES	OLS	Robust	Robust	Robust	Robust
PostxTreat		-0.0052	-0.0049	-0.0023	-0.0023
		(0.0041)	(0.0035)	(0.0034)	(0.0034)
Post	-0.0017	0.0002		0.0005	
	(0.0022)	(0.0036)		(0.0044)	
Treat	0.0046**	0.0101***	0.0100*		
	(0.0023)	(0.0029)	(0.0050)		
Size		0.0035***	0.0035***	0.0009	0.0056
		(0.0007)	(0.0013)	(0.0071)	(0.0076)
Loss		-0.0205***	-0.0210***	-0.0156***	-0.0152***
		(0.0045)	(0.0068)	(0.0057)	(0.0057)
Fhorizon		-0.0000	-0.0000	-0.0001**	-0.0001*
		(0.0000)	(0.0000)	(0.0000)	(0.0000)
Dispersion		-0.0264***	-0.0251**	-0.0214***	-0.0196***
		(0.0065)	(0.0098)	(0.0072)	(0.0073)
EearningsCOV		-0.0000		-0.0000	
		(0.0000)		(0.0000)	
InsOwnership		0.0095	0.0085	0.0190	0.0170
		(0.0058)	(0.0073)	(0.0129)	(0.0130)
PC		0.0070**	0.0070		
		(0.0030)	(0.0068)		
Constant	-0.0164***	-0.0478***	-0.0485***	-0.0233	-0.0627
	(0.0022)	(0.0095)	(0.0166)	(0.0589)	(0.0658)
Observations	612	612	612	612	612
Year-Quarter FE	No	No	Yes	No	Yes
Business Line FE	No	No	No	PC	No
Firm FE	No	No	No	Yes	Yes
Error Cluster	Robust	Robust	Firm	Firm	Firm
R-squared	0.0077	0.2654	0.2935	0.5484	0.5703

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Note: This table reports results from ordinary least squares regressions. The dependent variable is analyst Forecast Accuracy, which is the negative value of the analyst forecast error in EPS, scaled by stock price. *Size* is the natural log of market value. *Loss* is an indicator variable equal to one if a firm reported negative income and zero otherwise. *Fhorizon* is forecast horizon measured by the number of days between the date of issuance of analyst's forecasted EPS and the earnings announcement date. *Dispersion* is the standard deviation of the analyst's forecasted EPS. *EarningsCOV* is earnings variance measured by the covariance of quarterly EPS using previous twenty quarters data. *Institutional Ownership* is the percentage of stock shares owned by institutional investors. ***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels, respectively.

Table 12: Contemporary Studies

	Present Study	Kim and Kim et al. 2021	Amornsiripanitch et al. 2022	Song et al. 2021
Title	The capital market consequences associated with classifying unrealized gains and losses on AFS equity securities in GAAP net income	AManagerial and Investor Responses to Changes in Fair Value Accounting for Equity Securities	Net Income Measurement, Investor Inattention, and firm decision	Real Effects of Recognizing Fair Value Changes in Net Income on Firms' Investment Choices
Findings	1. Following the application of ASU2016-01, there is a significant decrease in investors' responsiveness to firms' earnings announcements measured by the earnings response coefficient (ERC), and that the mechanism explaining this reduction in ERC is a decrease in earnings persistence;2. However, our evidence indicates no significant changes in investor assessment of overall firm risk following the reporting change. This result suggests that investors appear to understand that the reduction in earnings persistence is not reflective of a change in firm risk; 3. Reclassifying unrealized gains and losses on AFS equity securities in net income does not change analyst forecast accuracy.	1.Managers are more likely to disclose non-GAAP earnings and exclude URGL from non-GAAP earnings after ASU 2016-01 takes effect; the quality of non-GAAP exclusions increases after ASU2016-01; 2. Managers do not reduce the size or risk of equity investment portfolios, on average, following ASU 2016-01; when managers' bonus incentives are shielded from the effects of equity-URGL, managers tend to take greater risks in equity investment; 3. Retail investors purchase more stocks when equity-URGL converts an accounting loss to a profit.	1. Inattentive investors only pay attention to changes in UGL on equity securities when they are included in net income; Price of stocks with low analyst coverage react more to changes in UGL from equity securities, highlighting the role of investor inattention; 2. Publicly traded insurers cut investments in public stocks; 3.Increased volatility and decreased earnings persistence.	1. Public property and casualty insurers decreased the riskiness of their equity holdings following ASU2016-01.
Sample	US public insurers' quarterly observations	**Impact on financial reporting test:** US public insurers' quarterly observations; **Investment portfolio adjustment test:** US public insurers' subsidiary insurance companies' annual observations	**Impact on financial reporting test:** US public insurers' quarterly observations; **Investment portfolio adjustment test:** US public and private individual insurance companies' annual observations	US public and private individual insurance companies' quarterly observations
Sample Period	2015Q1 - 2019 Q4	2015Q1 - 2020 Q4	2015Q1 - 2020 Q3	2016-2019
Methodology	**Diff-in-diff**: Treatment groups are firms with a ratio of equity securities measured at fair value to total investments higher than the sample median. The firm's equity security holding is the average holding ratio across the years 2010-2017.	**Diff-in-diff – Impact on financial reporting test:** Treatment group are firms with a ratio of AFS equity securities to total assets higher than the sample median. The firm's equity holding ratio is calculated using the data of the four-quarter of the year 2017. ; **Investment portfolio adjustment test:** Investment portfolio adjustment test: Treatment group are individual insurance companies that have publicly held parents.	**Diff-in-diff – Impact on financial reporting test:** Treatment groups are firms with a number of following analysts that is higher than the sample median.; **Investment portfolio adjustment test:** Investment portfolio adjustment test: Treatment group are individual insurance companies that have publicly held parents.	**Diff-in-diff**: Treatment group are individual insurance companies that have publicly held parents.

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Appendices

Appendix 1A: Variable Definitions

Variable	Variable Name	Description
Treatment firms	TREAT	An indicator variable that equals 1 if a firm has with higher-than-the-sample-median ratio of equity investment to total assets (0.013) from year 2010 to 2017. Data are obtained from Compustat.
Post treatment periods	POST	An indicator variable that equals 1 for a quarter in fiscal year 2018 and 2019, and 0 for a quarter in fiscal year 2016 and 2017.
Market response	CAR	Firm's 3-day market-adjusted stock return around the quarterly earnings announcement date, abtained by utilizing U.S. Daily Event Study tool from WRDS database.
Unexpected Earnings	UE	I/B/E/S actual quarterly EPS minus one-quarter ahead median forecast of quarterly EPS published by I/B/E/S prior to the earnings announcement, scaled by the CRSP stock price from 2 days prior to the earnings announcement. Data are obtained from I/B/E/S.
Firm Size	Size	Firm's market capitalization measured at the end of the fiscal year. Market capitalization equals the share price * the number of shares outstanding. Data are obtained from Compustat. We use the natural log of firm size in all regressions.
Market to Book Ratio	Market-to-Book	Ratio of market value of equity to the book value of equity, both measured at the end of the fiscal year, from Compustat.
Daily Beta	Beta	Firm's daily beta on earnings announcement date estimated by market model using Beta Suite by WRDS, with 365 days estimation window.
Liability to surplus ratio	Liability-to-surplus	Ratio of total liabilities excluding debts to the book value of equity, as reported by Compustat.
Earnings Persistence	EarningsPersistence	The regression coefficient from regressing quarterly EPS on past quarter's EPS using most recent 5 years data. This is calculated at the end of each quarter. The data are obtained from Compustat.
Accounting Loss Indicator	Loss	An indicator variable that equals I if the basic earnings per share excluding extraordinary items is less than 0, and 0 otherwise.
Analysts' forecast dispersion	Dispersion	The standard deviation of the quarterly EPS forecasted by individual analysts.

Appendix 1A: Variable Definitions-Continuation

Variable	Variable Name	Description
Analysts Forecast Accuracy	AFaccuracy	The negative of absolute value of the analyst forecast error in EPS, scaled by stock price, obtained from I/B/E/S.
Analysts Forecast Horizon	Fhorizon	Numbers of days between the date of issuance of analyst's forecasted EPS and the earnings announcement date, obtained from I/B/E/S.
Earnings Variance	EarningsCOV	Covariance of quarterly EPS using previous twenty quarters data from Compustat.
Cumulative abnormal bid-ask spreads	ASPD	(-2,2) days abnormal bid-ask spreads around earnings announcement, scale by stock price, obtained by utilizing U.S. Daily Event Study tool from WRDS database.
Total bid-ask spreads	TSPD	(-2,2) days total bid-ask spreads around earnings announcement, scale by stock price, obtained by utilizing U.S. Daily Event Study tool from WRDS database.
Institutional ownership	Institutional ownership	The percentage of stock shares owned by institutional investors , obtained from F13 fillings.
Cumulative abnormal return	Abs-CAR	absolute value of cumulative abnormal returns of (-2,2), obtained from CRSP.
Firm Size	Size	Natural log of total assets. Data are obtained from Compustat.
Return on assets	ROA	Ratio of net income to total assets, from Compustat.
Change in ROA	Change-in-ROA	Quarterly change in ROA.
Change in Leverage	Change-in-leverage	Quarterly change in Liability-to-surplus ratio
Trade volume	Trade volume	Trading volume (number of trades) on earnings announcement day, obtained from CRSP
Price variance	Price variance	The variance of stock price , obtained from CRSP
Analysts coverage	Number of analysts	Numbers of following analysts, obtained from I/B/E/S.
Property and Casualty	PC	An indicator variable that equals 1 for a firm operates in Property or Casualty lines , and 0 for other firms, obstained from Compustat

Appendix 2A: ERC Propensity Score Matching Results

Dependent Variable: CAR

VARIABLES	(1) OLS	(2) Robust	(3) Robust	(4) Robust	(5) Robust	(6) Robust
UExPOSTxTREAT		-2.6014**	-2.5436***	-1.8604**	-1.5841*	-1.9150**
		(1.0475)	(0.9439)	(0.8567)	(0.8592)	(0.7538)
UE	0.9755***	0.2175	0.3255	1.8354	2.1633*	2.0749*
	(0.2517)	(0.5300)	(0.4442)	(1.1636)	(1.1047)	(1.0882)
UExPOST		0.8072	1.0063*	1.0894	0.7534	1.6439**
		(0.6084)	(0.5539)	(0.7516)	(0.6418)	(0.7407)
UExTREAT		2.7107***	2.9797***	2.3032***	1.8822***	2.2634***
		(0.7895)	(0.7171)	(0.6917)	(0.6379)	(0.6446)
Post		-0.0022				
		(0.0079)				
Treat		-0.0056				
		(0.0060)				
POSTxTREAT		0.0130	0.0107	0.0059	0.0126	0.0080
		(0.0102)	(0.0092)	(0.0097)	(0.0096)	(0.0089)
UExSize				-0.1657	-0.1572	-0.2657*
				(0.1432)	(0.1392)	(0.1415)
UExMar_to_book				0.8776**	0.8322**	0.9409***
				(0.3720)	(0.3513)	(0.3468)
UExBeta				2.0854	1.6042	2.3074*
				(1.3073)	(1.1687)	(1.3062)
UExLiability_Ratio				-0.1289*	-0.0875	-0.1257**
				(0.0712)	(0.0632)	(0.0606)
UExLoss				-1.7227***	-1.6372***	-2.2865***
				(0.4858)	(0.4406)	(0.5173)
UExDispersion				-0.7928*	-0.8888*	-0.7435*
				(0.4766)	(0.4762)	(0.4481)
UExPersistence				-2.6811***	-2.5944**	-2.0564**
				(1.0150)	(1.0267)	(0.8326)
1.PC					-0.0045	
					(0.0102)	
Constant	0.0121***	0.0136***	0.6465***	0.0476***	0.0680***	0.6294***
	(0.0024)	(0.0045)	(0.1126)	(0.0132)	(0.0198)	(0.1126)
Observations	469	469	469	469	469	469
Firm Characteristics	No	No	Yes	No	Yes	Yes
Year-Quarter FE	No	No	Yes	Yes	Yes	Yes
Business Line FE	No	No	No	No	Yes	No
Firm FE	No	No	Yes	Yes	No	Yes
Error Cluster	Date	Date	Date	Date	Date	Date
R-squared	0.0894	0.1455	0.3536	0.3490	0.3018	0.4443

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Note: This table reports results from ordinary least squares regressions. The dependent variable is *CAR*. *CAR* is the three-day abnormal return surrounding the quarterly earnings announcement. *UE* is unexpected earnings scaled by stock price from 2 days prior to the earnings announcement. *Size* is the natural log of market value. *Market-to-Book* is the ratio of market value of equity to the book value of equity. *Liability-to-surplus* is the ratio of total liabilities excluding debts to the book value of equity. *Loss* is an indicator variable equal to one if a firm reported negative income and zero otherwise. *Beta* is a firm's beta from the CAPM model. *Dispersion* is the standard deviation of analyst EPS forecasts. *Earnings Persistence* is the regression coefficient from regressing quarterly EPS on past quarter's EPS using up to 5 years data. *Treat* is a binary variable equal to one if a firm is in our treatment group and zero otherwise. *Post* is a binary variable equal to one for observations in 2018 and later. Standard errors are presented in parentheses beneath each coefficient estimate. ***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels, respectively.

Appendix 3A: ERC Alternative Definition of Treatment Group

Dependent Variable: CAR

VARIABLES	(1) OLS	(2) Robust	(3) Robust	(4) Robust	(5) Robust	(6) Robust
UExPOSTxTREAT		-2.2531**	-1.9545**	-1.5535**	-1.4874**	-1.3857**
		(0.9449)	(0.8602)	(0.5977)	(0.6104)	(0.5770)
UE	1.0011***	0.5165	0.6711**	1.7276	1.9657*	1.9521*
	(0.2108)	(0.3442)	(0.2943)	(1.1034)	(1.1530)	(1.0719)
UExPOST		0.7379*	0.8539**	0.8357	0.8549	1.2628**
		(0.4398)	(0.3720)	(0.6086)	(0.5566)	(0.6117)
UExTREAT		2.0375***	2.1048***	1.7774***	1.5859***	1.6960***
		(0.6490)	(0.5960)	(0.5203)	(0.4595)	(0.5102)
Post		0.0010	0.0148	-0.0053	-0.0056	0.0137
		(0.0055)	(0.0138)	(0.0139)	(0.0136)	(0.0130)
Treat		-0.0031	0.0746**	0.0002	-0.0018	0.0664**
		(0.0056)	(0.0287)	(0.0235)	(0.0059)	(0.0260)
POSTxTREAT		0.0095	0.0124	0.0121	0.0096	0.0117
		(0.0096)	(0.0093)	(0.0096)	(0.0090)	(0.0092)
UExSize				-0.0642	-0.1620	-0.1852
				(0.1425)	(0.1542)	(0.1383)
UExMar_to_book				0.8999**	0.9742**	0.9805***
				(0.3813)	(0.3788)	(0.3632)
UExBeta				1.3321	1.4915*	1.6255*
				(0.9165)	(0.8225)	(0.9249)
UExLiability_Ratio				-0.1027	-0.0579	-0.0765
				(0.0666)	(0.0603)	(0.0584)
UExLoss				-1.3110***	-1.4798***	-1.7939***
				(0.4252)	(0.3930)	(0.4351)
UExDispersion				-0.9695**	-0.9508**	-0.9030**
				(0.4076)	(0.4507)	(0.4258)
UExPersistence				-2.6362***	-2.4721**	-2.0375**
				(0.9473)	(1.0315)	(0.8441)
1.PC					-0.0033	
					(0.0076)	
Constant	0.0129***	0.0124***	0.4809***	0.0132	0.0644***	0.4584***
	(0.0023)	(0.0036)	(0.0974)	(0.0218)	(0.0183)	(0.0907)
Observations	573	573	573	573	573	573
Firm Characteristics	No	No	Yes	No	Yes	Yes
Year-Quarter FE	No	No	Yes	Yes	Yes	Yes
Business Line FE	No	No	No	No	Yes	No
Firm FE	No	No	Yes	Yes	No	Yes
Error Cluster	Date	Date	Date	Date	Date	Date
R-squared	0.0952	0.1234	0.3354	0.3260	0.2747	0.4103

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Note: This table reports results from ordinary least squares regressions. The dependent variable is *CAR*. *CAR* is the three-day abnormal return surrounding the quarterly earnings announcement. *UE* is unexpected earnings scaled by stock price from 2 days prior to the earnings announcement. *Size* is the natural log of market value. *Market-to-Book* is the ratio of market value of equity to the book value of equity. *Liability-to-surplus* is the ratio of total liabilities excluding debts to the book value of equity. *Loss* is an indicator variable equal to one if a firm reported negative income and zero otherwise. *Beta* is a firm's beta from the CAPM model. *Dispersion* is the standard deviation of analyst EPS forecasts. *Earnings Persistence* is the regression coefficient from regressing quarterly EPS on past quarter's EPS using up to 5 years data. *Treat* is a binary variable equal to one if a firm is in our treatment group and zero otherwise. *Post* is a binary variable equal to one for observations in 2018 and later. Standard errors are presented in parentheses beneath each coefficient estimate. ***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels, respectively.

Appendix 4A: ERC Alternative Definition of Treatment Group—Entropy Balanced

Dependent Variable: CAR						
	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	OLS	Robust	Robust	Robust	Robust	Robust
UExPOSTxTREAT		-2.6981***	-2.1505**	-1.5580**	-1.7206***	-1.2536**
		(0.9135)	(0.8367)	(0.6651)	(0.6296)	(0.6309)
UE	0.9170***	0.1259	0.4875*	2.0796	2.6552**	2.5983**
	(0.2661)	(0.2510)	(0.2803)	(1.2795)	(1.2666)	(1.2304)
UExPOST		1.1829***	1.1035***	1.1964*	1.3991**	1.3310**
		(0.3644)	(0.3774)	(0.6230)	(0.5907)	(0.6420)
UExTREAT		2.4282***	2.3549***	1.6316***	1.6301***	1.5946***
		(0.6246)	(0.5621)	(0.5582)	(0.4644)	(0.5261)
Post		0.0066	0.0217	0.0033	0.0013	0.0199
		(0.0051)	(0.0161)	(0.0115)	(0.0108)	(0.0152)
Treat		0.0021	0.0753**	0.0076	0.0018	0.0674**
		(0.0055)	(0.0316)	(0.0211)	(0.0059)	(0.0292)
POSTxTREAT		0.0038	0.0127	0.0050	0.0050	0.0100
		(0.0095)	(0.0099)	(0.0092)	(0.0092)	(0.0098)
UExSize				-0.1635	-0.2460	-0.2512
				(0.1692)	(0.1580)	(0.1743)
UExMar_to_book				1.2236**	0.8367	1.0060**
				(0.4996)	(0.5509)	(0.4880)
UExBeta				2.1033**	2.1390**	1.9890**
				(0.9851)	(0.8748)	(0.9786)
UExLiability_Ratio				-0.1859***	-0.1362**	-0.1204*
				(0.0677)	(0.0574)	(0.0696)
UExLoss				-1.3754***	-1.3459***	-1.5467***
				(0.4782)	(0.4588)	(0.4649)
UExDispersion				-1.1542**	-0.9938**	-1.0599**
				(0.4592)	(0.4689)	(0.4736)
UExPersistence				-3.4763***	-3.8267***	-3.1866***
				(1.1797)	(1.2525)	(1.0772)
1.PC					-0.0088	
					(0.0128)	
Constant	0.0119***	0.0072*	0.4145***	-0.0041	0.0572***	0.4052***
	(0.0024)	(0.0038)	(0.1191)	(0.0190)	(0.0210)	(0.1280)
Observations	573	573	573	573	573	573
Firm Characteristics	No	No	Yes	No	Yes	Yes
Year-Quarter FE	No	No	Yes	Yes	Yes	Yes
Business Line FE	No	No	No	No	Yes	No
Firm FE	No	No	Yes	Yes	No	Yes
Error Cluster	Date	Date	Date	Date	Date	Date
R-squared	0.0727	0.1250	0.3413	0.3633	0.3077	0.4243

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Note: This table reports results from ordinary least squares regressions. The dependent variable is *CAR*. *CAR* is the three-day abnormal return surrounding the quarterly earnings announcement. *UE* is unexpected earnings scaled by stock price from 2 days prior to the earnings announcement. *Size* is the natural log of market value. *Market-to-Book* is the ratio of market value of equity to the book value of equity. *Liability-to-surplus* is the ratio of total liabilities excluding debts to the book value of equity. *Loss* is an indicator variable equal to one if a firm reported negative income and zero otherwise. *Beta* is a firm's beta from the CAPM model. *Dispersion* is the standard deviation of analyst EPS forecasts. *Earnings Persistence* is the regression coefficient from regressing quarterly EPS on past quarter's EPS using up to 5 years data. *Treat* is a binary variable equal to one if a firm is in our treatment group and zero otherwise. *Post* is a binary variable equal to one for observations in 2018 and later. Standard errors are presented in parentheses beneath each coefficient estimate. ***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels, respectively.

Appendix 5A: Earnings Response Coefficients Surrounding ASU2016-01- Alternative Test

Dependent Variable: CAR						
	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	OLS	Robust	Robust	Robust	Robust	Robust
UExPOSTxEH-Dociles		-0.2508*	-0.2722**	-0.2182**	-0.1838	-0.2116**
		(0.1326)	(0.1231)	(0.0999)	(0.1133)	(0.0966)
UE	1.0011***	0.0169	0.0118	1.3148	1.7425	1.6801
	(0.2108)	(0.5127)	(0.4348)	(1.1549)	(1.1818)	(1.1098)
UExPOST		1.2161*	1.4804**	1.2656*	1.1810	1.7185**
		(0.6788)	(0.5786)	(0.6999)	(0.7253)	(0.6908)
UExEH-Dociles		0.2405***	0.2854***	0.2063**	0.1492*	0.1857**
		(0.0912)	(0.0888)	(0.0890)	(0.0855)	(0.0847)
POSTxEH-Dociles		0.0029*	0.0015	0.0030*	0.0030*	0.0014
		(0.0017)	(0.0015)	(0.0016)	(0.0015)	(0.0015)
POST		-0.0112				
		(0.0101)				
EH-Dociles		-0.0011			-0.0006	
		(0.0010)			(0.0010)	
UExSize				-0.0228	-0.1117	-0.1455
				(0.1438)	(0.1563)	(0.1352)
UExMar_to_book				0.9198**	0.9922***	0.9778***
				(0.3772)	(0.3706)	(0.3561)
UExBeta				1.0104	1.1339	1.2821
				(0.8758)	(0.7751)	(0.8702)
UExLiability_Ratio				-0.1076	-0.0592	-0.0827
				(0.0655)	(0.0577)	(0.0562)
UExLoss				-1.2668***	-1.5027***	-1.7844***
				(0.4061)	(0.3778)	(0.4237)
UExDispersion				-0.9014**	-0.8883*	-0.8018*
				(0.4010)	(0.4518)	(0.4170)
UExPersistence				-2.5014***	-2.3649**	-1.9326**
				(0.9359)	(1.0079)	(0.8386)
Constant	0.0129***	0.0176***	0.5354***	0.0043	0.0505***	0.5107***
	(0.0023)	(0.0062)	(0.1080)	(0.0041)	(0.0142)	(0.1033)
Observations	573	573	573	573	573	573
Firm Characteristics	No	No	Yes	No	Yes	Yes
Year-Quarter FE	No	No	Yes	Yes	Yes	Yes
Business Line FE	No	No	No	No	Yes	No
Firm FE	No	No	Yes	Yes	No	Yes
Error Cluster	Date	Date	Date	Date	Date	Date
R-squared	0.0952	0.1232	0.3350	0.3284	0.2768	0.4076

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Note: This table reports results from ordinary least squares regressions. The dependent variable is *CAR*. *CAR* is the three-day abnormal return surrounding the quarterly earnings announcement. *EH-Dociles* is a variable that categorizes firms' equity holding ratio by its docile, equaling from 1 to 10. *UE* is unexpected earnings scaled by stock price from 2 days prior to the earnings announcement. *Size* is the natural log of market value. *Market-to-Book* is the ratio of market value of equity to the book value of equity. *Liability-to-surplus* is the ratio of total liabilities excluding debts to the book value of equity. *Loss* is an indicator variable equal to one if a firm reported negative income and zero otherwise. *Beta* is a firm's beta from the CAPM model. *Dispersion* is the standard deviation of analyst EPS forecasts. *Earnings Persistence* is the regression coefficient from regressing quarterly EPS on past quarter's EPS using up to 5 years data. *POST* is a binary variable equal to one for observations in 2018 and later. Standard errors are presented in parentheses beneath each coefficient estimate. ***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels, respectively.

Appendix 6A: Bid-Ask Spread Results—Entropy Balanced

	Dependent Variable: ASPD						*Dependent Variable: TSPD*					
VARIABLES	(1) OLS	(2) Robust	(3) Robust	(4) Robust	(5) Robust	(6) OLS	(7) Robust	(8) Robust	(9) Robust	(10) Robust	(11)	(12)
PostxTreat		0.0004	-0.0001	-0.0027***	-0.0027***	-0.0030***		-0.0010	-0.0015	-0.0050***	-0.0050***	-0.0050***
		(0.0037)	(0.0017)	(0.0010)	(0.0010)	(0.0008)		(0.0047)	(0.0021)	(0.0018)	(0.0018)	(0.0014)
POST	-0.0002	-0.0004	0.0002	0.0028***	0.0028***		0.0004	0.0009	0.0017	0.0052***	0.0052***	
	(0.0018)	(0.0037)	(0.0016)	(0.0008)	(0.0008)		(0.0023)	(0.0047)	(0.0020)	(0.0017)	(0.0017)	
Treat	-0.0059***	-0.0060***	-0.0056***				-0.0071***	-0.0067***	-0.0064***			
	(0.0018)	(0.0021)	(0.0011)				(0.0022)	(0.0022)	(0.0011)			
price_variance			0.0001	-0.0001	-0.0001	-0.0001*			0.0001	-0.0002*	-0.0002*	-0.0002*
			(0.0001)	(0.0001)	(0.0001)	(0.0001)			(0.0001)	(0.0001)	(0.0001)	(0.0001)
UE			-0.0004	-0.0004	-0.0004	-0.0000			-0.0003	-0.0001	-0.0001	0.0003*
			(0.0005)	(0.0003)	(0.0003)	(0.0002)			(0.0005)	(0.0003)	(0.0003)	(0.0001)
number_analysts			-0.0000*	0.0000	0.0000	0.0000***			-0.0000*	0.0000	0.0000	0.0000***
			(0.0000)	(0.0000)	(0.0000)	(0.0000)			(0.0000)	(0.0000)	(0.0000)	(0.0000)
ROA			-0.2536***	-0.0086	-0.0086	-0.0297			-0.3754***	-0.1291	-0.1291	-0.1269
			(0.0521)	(0.0603)	(0.0603)	(0.0563)			(0.0786)	(0.1023)	(0.1024)	(0.0864)
Size			-0.0022***	-0.0005	-0.0005	-0.0011			-0.0026***	-0.0010	-0.0010	-0.0015
			(0.0003)	(0.0012)	(0.0012)	(0.0012)			(0.0003)	(0.0014)	(0.0014)	(0.0015)
Change_in_ROA			0.2097***	0.0698	0.0698	0.0720			0.2961***	0.1431*	0.1431*	0.1340*
			(0.0453)	(0.0521)	(0.0521)	(0.0467)			(0.0688)	(0.0847)	(0.0847)	(0.0678)
Change_in_Leverage			0.0214	-0.0005	-0.0005	-0.0023			0.0336	0.0032	0.0032	-0.0015
			(0.0275)	(0.0090)	(0.0090)	(0.0095)			(0.0343)	(0.0101)	(0.0101)	(0.0110)
Abs_CAR			-0.0137	0.0140	0.0140	0.0100			-0.0143	0.0204	0.0204	0.0152
			(0.0146)	(0.0136)	(0.0136)	(0.0102)			(0.0183)	(0.0169)	(0.0169)	(0.0128)
institutional_share			-0.0171***	0.0020	0.0020	0.0039*			-0.0202***	0.0026	0.0026	0.0039
			(0.0026)	(0.0017)	(0.0017)	(0.0021)			(0.0031)	(0.0027)	(0.0027)	(0.0029)
vol			0.0000	-0.0000	-0.0000	-0.0000			0.0000*	-0.0000	-0.0000	-0.0000
			(0.0000)	(0.0000)	(0.0000)	(0.0000)			(0.0000)	(0.0000)	(0.0000)	(0.0000)
Loss			0.0015	0.0000	0.0000	0.0000			0.0014	-0.0007	-0.0007	-0.0007
			(0.0016)	(0.0009)	(0.0009)	(0.0008)			(0.0020)	(0.0010)	(0.0010)	(0.0010)
Constant	0.0104***	0.0105***	0.0429***	0.0090	0.0090	0.0153	0.0124***	0.0122***	0.0523***	0.0157	0.0157	0.0219
	(0.0018)	(0.0021)	(0.0041)	(0.0116)	(0.0116)	(0.0111)	(0.0019)	(0.0021)	(0.0048)	(0.0141)	(0.0141)	(0.0139)
Observations	779	779	779	779	779	779	779	779	779	779	779	779
Firm Characteristics	No	No	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes
Year-Quarter FE	No	No	No	No	No	Yes	No	No	No	No	No	Yes
Business Line FE	No	No	No	No	Yes	Yes	No	No	No	No	Yes	Yes
Error Cluster	Robust	Robust	Robust	Firm	Firm	Firm	Robust	Robust	Robust	Firm	Firm	Firm
R-squared	0.0162	0.0168	0.3849	0.7423	0.7423	0.7502	0.0163	0.0171	0.4056	0.7926	0.7926	0.7974

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Note:This table reports results from ordinary least squares regressions. *ASPD* is the (-2,2) days abnormal bid-ask spreads around earnings announcement, scale by stock price. *TSPD* is the (-2,2) days total bid-ask spreads around earnings announcement, scale by stock price. Price Variance is the variance of stock price. *UE(b)* is the log of the absolute value of analysts' EPS errors measured by the difference between firm's actual EPS and the analysts' forecasted EPS. *Number of analysts* is the number of following analysts. *ROA* is the ratio of net income to total assets. *Change-in-ROA* is the change in ROA. *Change-in-Leverage* is the change in Liability-to-Surplus ratio. *Abs-CAR* is the absolute value of cumulative abnormal returns of (-2,2). *Institutional Ownership* is the percentage of stock shares owned by institutional investors. *Trade Volume* is the trading volume in millions (number of trades) on earnings announcement day. *Treat* is a binary variable equal to one if a firm is in our treatment group and zero otherwise. *Post* is a binary variable equal to one for observations in 2018 and later. Standard errors are presented in parentheses beneath each coefficient estimate. ***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels, respectively.

Appendix 7A: Bid-Ask Spread Results—Alternative Test

	Dependent Variable: ASPD						*Dependent Variable: TSPD*					
VARIABLES	(1) OLS	(2) Robust	(3) Robust	(4) Robust	(5) Robust	(6) OLS	(7) Robust	(8) Robust	(9) Robust	(10) Robust	(11)	(12)
PostxEH-Docile		-0.0001	-0.0001	-0.0001	-0.0001	-0.0001		-0.0001	-0.0001	-0.0002	-0.0002	-0.0002
		(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)		(0.0002)	(0.0001)	(0.0001)	(0.0001)	(0.0001)
POST	0.0004	0.0009	0.0007	0.0010	0.0010		0.0005	0.0012	0.0011	0.0014*	0.0014*	
	(0.0004)	(0.0008)	(0.0006)	(0.0006)	(0.0006)		(0.0005)	(0.0010)	(0.0008)	(0.0008)	(0.0008)	
EH-Docile	0.0002***	0.0003***	-0.0003***				0.0003***	0.0003***	-0.0003***			
	(0.0001)	(0.0001)	(0.0001)				(0.0001)	(0.0001)	(0.0001)			
price_variance			0.0001*	-0.0000	-0.0000	-0.0001			0.0001*	-0.0001	-0.0001	-0.0001*
			(0.0000)	(0.0000)	(0.0000)	(0.0000)			(0.0000)	(0.0000)	(0.0000)	(0.0000)
UE			0.0002	0.0001	0.0001	0.0001			0.0003*	0.0001	0.0001	0.0001
			(0.0001)	(0.0001)	(0.0001)	(0.0001)			(0.0002)	(0.0001)	(0.0001)	(0.0001)
number_analysts			-0.0000***	0.0000	0.0000	0.0000			-0.0000***	0.0000	0.0000	0.0000
			(0.0000)	(0.0000)	(0.0000)	(0.0000)			(0.0000)	(0.0000)	(0.0000)	(0.0000)
ROA			-0.1523***	0.0192	0.0192	0.0133			-0.1980***	0.0117	0.0117	0.0061
			(0.0304)	(0.0454)	(0.0454)	(0.0419)			(0.0376)	(0.0516)	(0.0516)	(0.0484)
Size			-0.0018***	-0.0010	-0.0010	-0.0014			-0.0022***	-0.0012	-0.0012	-0.0015
			(0.0001)	(0.0011)	(0.0011)	(0.0012)			(0.0002)	(0.0013)	(0.0013)	(0.0014)
Change_in_ROA			0.0800***	0.0177	0.0177	0.0167			0.0986***	0.0231	0.0231	0.0228
			(0.0272)	(0.0267)	(0.0267)	(0.0249)			(0.0334)	(0.0320)	(0.0321)	(0.0296)
Change_in_Leverage			-0.0047	0.0018	0.0018	0.0017			-0.0039	0.0043	0.0043	0.0039
			(0.0111)	(0.0082)	(0.0082)	(0.0082)			(0.0135)	(0.0066)	(0.0066)	(0.0068)
Abs_CAR			-0.0136**	0.0018	0.0018	0.0010			-0.0141**	0.0041	0.0041	0.0034
			(0.0060)	(0.0052)	(0.0052)	(0.0051)			(0.0071)	(0.0062)	(0.0062)	(0.0061)
institutional_share			-0.0123***	0.0009	0.0009	0.0018			-0.0151***	0.0008	0.0008	0.0016
			(0.0014)	(0.0011)	(0.0011)	(0.0014)			(0.0016)	(0.0013)	(0.0013)	(0.0018)
vol			0.0000***	0.0000	0.0000	0.0000			0.0000***	0.0000*	0.0000*	0.0000**
			(0.0000)	(0.0000)	(0.0000)	(0.0000)			(0.0000)	(0.0000)	(0.0000)	(0.0000)
Loss			0.0004	0.0002	0.0002	0.0004			0.0004	0.0002	0.0002	0.0003
			(0.0008)	(0.0006)	(0.0006)	(0.0006)			(0.0010)	(0.0006)	(0.0006)	(0.0006)
Constant	0.0025***	0.0023***	0.0330***	0.0129	0.0129	0.0163	0.0032***	0.0029***	0.0410***	0.0156	0.0156	0.0190
	(0.0004)	(0.0005)	(0.0023)	(0.0108)	(0.0108)	(0.0120)	(0.0005)	(0.0006)	(0.0028)	(0.0129)	(0.0129)	(0.0143)
Observations	836	836	779	779	779	779	836	836	779	779	779	779
Firm Characteristics	No	No	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes
Year-Quarter FE	No	No	No	No	No	Yes	No	No	No	No	No	Yes
Business Line FE	No	No	No	No	Yes	Yes	No	No	No	No	Yes	Yes
Error Cluster	Robust	Robust	Robust	Firm	Firm	Firm	Robust	Robust	Robust	Firm	Firm	Firm
R-squared	0.0162	0.0168	0.3849	0.7423	0.7423	0.7502	0.0163	0.0171	0.4056	0.7926	0.7926	0.7974

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Note:This table reports results from ordinary least squares regressions. *ASPD* is the (-2,2) days abnormal bid-ask spreads around earnings announcement, scale by stock price. *TSPD* is the (-2,2) days total bid-ask spreads around earnings announcement, scale by stock price. Price Variance is the variance of stock price. *UE(b)* is the log of the absolute value of analysts' EPS errors measured by the difference between firm's actual EPS and the analysts' forecasted EPS. *Number of analysts* is the number of following analysts. *ROA* is the ratio of net income to total assets. *Change-in-ROA* is the change in ROA. *Change-in-Leverage* is the change in Liability-to-Surplus ratio. *Abs-CAR* is the absolute value of cumulative abnormal returns of (-2,2). *Institutional Ownership* is the percentage of stock shares owned by institutional investors. *Trade Volume* is the trading volume in millions (number of trades) on earnings announcement day. *EH-Dociles* is a variable that categorizes firms' equity holding ratio by its docile, equaling from 1 to 10. *Post* is a binary variable equal to one for observations in 2018 and later. Standard errors are presented in parentheses beneath each coefficient estimate. ***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels, respectively.

Appendix 8A: Forecast Accuracy Changes-Extended Forecasting Periods

Dependent Variable: Analyst Forecast Accuracy for t+i period

	GAAP EPS Forecast			Non-GAAP EPS Forecast		
	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	t+2	t+3	t+4	t+2	t+3	t+4
PostxTreat	0.0049	-0.0010	0.0010	-0.0049	0.0011	0.0110
	(0.0111)	(0.0093)	(0.0072)	(0.0148)	(0.0107)	(0.0080)
Post	1.4554	1.9558	2.6582	3.3710	0.1154	1.6665
	(2.4240)	(1.8622)	(2.1670)	(3.6497)	(1.9773)	(1.6427)
Treat	0.0168	0.0344	0.0407**	0.0136	0.0238*	0.0298*
	(0.0110)	(0.0206)	(0.0162)	(0.0120)	(0.0116)	(0.0163)
Size	0.0403***	0.0288	0.0291	0.0248*	0.0242*	0.0265***
	(0.0130)	(0.0183)	(0.0171)	(0.0124)	(0.0121)	(0.0088)
Loss	-0.0149**	-0.0162**	-0.0179***	-0.0144**	-0.0190***	-0.0207***
	(0.0067)	(0.0057)	(0.0055)	(0.0060)	(0.0052)	(0.0050)
Fhorizon	0.0001	0.0000	0.0001**	-0.0000	-0.0000	0.0000
	(0.0001)	(0.0001)	(0.0000)	(0.0001)	(0.0000)	(0.0001)
Dispersion	-0.0449	0.0040	-0.0209*	-0.0556	-0.0482	0.0109
	(0.0291)	(0.0149)	(0.0109)	(0.0386)	(0.0382)	(0.0327)
EearningsCOV	0.0311	0.0412	0.0558	0.0705	0.0028	0.0354
	(0.0505)	(0.0388)	(0.0452)	(0.0762)	(0.0412)	(0.0342)
InsOwnership	0.0266	0.0221	0.0031	0.0055	0.0176	-0.0081
	(0.0382)	(0.0312)	(0.0212)	(0.0259)	(0.0278)	(0.0227)
NUMTRD	0.0000	-0.0000	-0.0000**	0.0000	0.0000	0.0000
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
1.PC	-0.0583***	-0.0551**	-0.0457**	-0.0391***	-0.0424***	-0.0488***
	(0.0153)	(0.0220)	(0.0169)	(0.0132)	(0.0136)	(0.0095)
Constant	-2.2729	-2.8508	-3.8109	-4.6706	-0.3529	-2.4442
	(3.2162)	(2.4901)	(2.9126)	(4.8733)	(2.6462)	(2.1615)
Observations	175	156	128	189	180	166
Year-Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes
Business Line FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Error Cluster	Firm	Firm	Firm	Firm	Firm	Firm
R-squared	0.7274	0.6354	0.6982	0.6900	0.7492	0.8270

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Note: This table reports results from ordinary least squares regressions. The dependent variable is analyst Forecast Accuracy, which is the negative value of the analyst forecast error in EPS, scaled by stock price. *Size* is the natural log of market value. *Loss* is an indicator variable equal to one if a firm reported negative income and zero otherwise. *Fhorizon* is forecast horizon measured by the number of days between the date of issuance of analyst's forecasted EPS and the earnings announcement date. *Dispersion* is the standard deviation of the analyst's forecasted EPS. *EarningsCOV* is earnings variance measured by the covariance of quarterly EPS using previous twenty quarters data. *Institutional Ownership* is the percentage of stock shares owned by institutional investors. ***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels, respectively.

Table 9A: Non-GAAP Forecast Accuracy Changes - Alternative Test

Dependent Variable: Analyst Forecast Accuracy- Non-GAAP					
	(1)	(2)	(3)	(4)	(5)
VARIABLES	OLS	Robust	Robust	Robust	Robust
PostxEH-Docile		0.0002	0.0002	0.0000	0.0001
		(0.0006)	(0.0009)	(0.0008)	(0.0008)
Post	-0.0015	-0.0030		-0.0032	
	(0.0018)	(0.0044)		(0.0069)	
EH-Docile	0.0012***	0.0017***	0.0017**		
	(0.0004)	(0.0005)	(0.0007)		
Size		0.0046***	0.0047***	0.0177	0.0209*
		(0.0006)	(0.0012)	(0.0114)	(0.0117)
Loss		-0.0188***	-0.0195***	-0.0120**	-0.0113**
		(0.0038)	(0.0053)	(0.0049)	(0.0049)
Fhorizon		-0.0000	-0.0000	-0.0000	-0.0000
		(0.0000)	(0.0000)	(0.0000)	(0.0000)
Dispersion		-0.0045*	-0.0036	-0.0004	0.0034
		(0.0023)	(0.0034)	(0.0036)	(0.0039)
EearningsCOV		-0.0000		-0.0000	
		(0.0000)		(0.0000)	
InsOwnership		0.0049	0.0032	0.0183*	0.0175*
		(0.0040)	(0.0063)	(0.0104)	(0.0102)
PC		0.0022	0.0023		
		(0.0024)	(0.0051)		
Constant	-0.0159***	-0.0554***	-0.0566***	-0.1629*	-0.1923*
	(0.0027)	(0.0091)	(0.0169)	(0.0965)	(0.1009)
Observations	653	653	653	653	653
Year-Quarter FE	No	No	Yes	No	Yes
Business Line FE	No	No	No	PC	No
Firm FE	No	No	No	Yes	Yes
Error Cluster	Robust	Robust	Firm	Firm	Firm
R-squared	0.0254	0.2601	0.2775	0.5480	0.5685

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Note: This table reports results from ordinary least squares regressions. The dependent variable is analyst Forecast Accuracy, which is the negative value of the analyst forecast error in EPS, scaled by stock price.*EH-Dociles* is a variable that categorizes firms' equity holding ratio by its docile, equaling from 1 to 10. *Size* is the natural log of market value. *Loss* is an indicator variable equal to one if a firm reported negative income and zero otherwise. *Fhorizon* is forecast horizon measured by the number of days between the date of issuance of analyst's forecasted EPS and the earnings announcement date. *Dispersion* is the standard deviation of the analyst's forecasted EPS. *EarningsCOV* is earnings variance measured by the covariance of quarterly EPS using previous twenty quarters data. *Institutional Ownership* is the percentage of stock shares owned by institutional investors. ***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels, respectively.

Table 10A: Non-GAAP Forecast Accuracy Changes - Alternative Test

Dependent Variable: Analyst Forecast Accuracy- Non-GAAP					
	(1)	(2)	(3)	(4)	(5)
VARIABLES	OLS	Robust	Robust	Robust	Robust
PostxEH-Docile		-0.0002	-0.0002	-0.0004	-0.0003
		(0.0007)	(0.0006)	(0.0007)	(0.0007)
Post	-0.0002	-0.0001		0.0013	
	(0.0021)	(0.0049)		(0.0055)	
EH-Docile	0.0007*	0.0013**	0.0012		
	(0.0004)	(0.0005)	(0.0008)		
Size		0.0031***	0.0032***	0.0007	0.0052
		(0.0007)	(0.0012)	(0.0079)	(0.0084)
Loss		-0.0260***	-0.0268***	-0.0183***	-0.0181***
		(0.0047)	(0.0066)	(0.0056)	(0.0056)
Fhorizon		-0.0000	-0.0000	-0.0000*	-0.0000
		(0.0000)	(0.0000)	(0.0000)	(0.0000)
Dispersion		-0.0126**	-0.0110*	-0.0149**	-0.0127*
		(0.0056)	(0.0058)	(0.0068)	(0.0066)
EearningsCOV		-0.0000		-0.0000	
		(0.0000)		(0.0000)	
InsOwnership		0.0106*	0.0092	0.0232	0.0238
		(0.0062)	(0.0080)	(0.0152)	(0.0158)
PC		0.0049*	0.0050		
		(0.0028)	(0.0059)		
Constant	-0.0173***	-0.0465***	-0.0484**	-0.0250	-0.0668
	(0.0029)	(0.0102)	(0.0181)	(0.0679)	(0.0761)
Observations	571	571	571	571	571
Year-Quarter FE	No	No	Yes	No	Yes
Business Line FE	No	No	No	PC	No
Firm FE	No	No	No	Yes	Yes
Error Cluster	Robust	Robust	Firm	Firm	Firm
R-squared	0.0254	0.2601	0.2775	0.5480	0.5685

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Note: This table reports results from ordinary least squares regressions. The dependent variable is analyst Forecast Accuracy, which is the negative value of the analyst forecast error in EPS, scaled by stock price. *EH-Dociles* is a variable that categorizes firms' equity holding ratio by its docile, equaling from 1 to 10. *Size* is the natural log of market value. *Loss* is an indicator variable equal to one if a firm reported negative income and zero otherwise. *Fhorizon* is forecast horizon measured by the number of days between the date of issuance of analyst's forecasted EPS and the earnings announcement date. *Dispersion* is the standard deviation of the analyst's forecasted EPS. *EarningsCOV* is earnings variance measured by the covariance of quarterly EPS using previous twenty quarters data. *Institutional Ownership* is the percentage of stock shares owned by institutional investors. ***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels, respectively.

Table 11A: ERC Parallel Trend Test

Dependent Variable:CAR

	2016-2017		*2017-2018*		*2018-2019*	
	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	Baseline	Balanced	Baseline	Balanced	Baseline	Balanced
UExPOSTxTREAT	3.4453**	1.8356	-4.2830***	-3.4137***	-0.3366	1.7887
	(1.4830)	(1.8229)	(1.0760)	(1.0809)	(1.0652)	(1.4587)
UE	3.3182	3.0289	-0.5420	-0.5700	4.3969**	-1.8719
	(2.6443)	(3.8588)	(1.4165)	(1.6814)	(1.8045)	(3.3929)
UExPOST	-0.0313	1.4394	1.8622***	1.8195**	0.5925	-0.5609
	(0.9637)	(1.2859)	(0.6973)	(0.7355)	(0.5756)	(1.1849)
UExTREAT	1.0615	1.0476	4.0892***	2.7770***	1.0772	1.7384
	(1.0377)	(1.4342)	(0.8858)	(0.9643)	(0.9996)	(1.1025)
Post	0.0226	0.0530***	-0.0027	-0.0166	0.0154	0.0317*
	(0.0139)	(0.0168)	(0.0168)	(0.0156)	(0.0170)	(0.0177)
Treat	-0.1710**	-0.1362	-0.1185**	-0.1300***	-0.0721	0.0224
	(0.0718)	(0.0834)	(0.0559)	(0.0479)	(0.0727)	(65,222.6420)
POSTxTREAT	0.0019	-0.0238*	0.0069	0.0162	-0.0016	-0.0141
	(0.0118)	(0.0140)	(0.0134)	(0.0125)	(0.0144)	(0.0198)
UExSize	-0.3841	0.2175	-0.0470	0.0182	-0.4984	0.0383
	(0.2995)	(0.3279)	(0.1342)	(0.1731)	(0.3672)	(0.5296)
UExMar_to_book	0.8986	-0.0811	1.1326***	1.5375***	0.4825	0.5245
	(0.6658)	(0.7837)	(0.3923)	(0.2979)	(0.6226)	(1.0613)
UExBeta	0.5682	-0.5171	2.1425	3.7909***	3.5029	8.9671**
	(1.5592)	(2.0956)	(1.4183)	(1.3775)	(3.0298)	(4.3673)
UExLiability_Ratio	0.1739	-0.1577	-0.1657	-0.3958***	-0.1412	-0.9282
	(0.1828)	(0.3001)	(0.1088)	(0.1191)	(0.0965)	(0.6431)
UExLoss	-1.1417	-0.5336	-0.7534	-1.5219*	-1.8005**	0.6376
	(0.7055)	(1.0196)	(0.6910)	(0.8255)	(0.7409)	(1.0065)
UExDispersion	-0.7775	-1.9833**	-0.8656*	-0.7520*	-1.2946*	-2.6528***
	(0.6426)	(0.9816)	(0.5003)	(0.4261)	(0.6762)	(0.9859)
UExPersistence	-2.1061	-5.3594**	-1.8567**	-2.1778**	-3.1195**	-3.5466
	(1.3325)	(2.1497)	(0.8958)	(1.0083)	(1.2870)	(2.8662)
Constant	0.8080***	0.7806***	0.5961***	0.4663**	1.0098***	0.6600
	(0.2506)	(0.2391)	(0.2020)	(0.2213)	(0.3484)	(.)
Observations	334	334	300	300	239	239
Firm Characteristics	Yes	Yes	Yes	Yes	Yes	Yes
Year-Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Error Cluster	Date	Date	Date	Date	Date	Date
R-squared	0.4792	0.5346	0.5046	0.6746	0.5643	0.7490

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Note: This table reports results from ordinary least squares regressions. The dependent variable is *CAR*. *CAR* is the three-day abnormal return surrounding the quarterly earnings announcement. *UE* is unexpected earnings scaled by stock price from 2 days prior to the earnings announcement. *Size* is the natural log of market value. *Market-to-Book* is the ratio of market value of equity to the book value of equity. *Liability-to-surplus* is the ratio of total liabilities excluding debts to the book value of equity. *Loss* is an indicator variable equal to one if a firm reported negative income and zero otherwise. *Beta* is a firm's beta from the CAPM model. *Dispersion* is the standard deviation of analyst EPS forecasts. *Earnings Persistence* is the regression coefficient from regressing quarterly EPS on past quarter's EPS using up to 5 years data. *Treat* is a binary variable equal to one if a firm is in our treatment group and zero otherwise. *Post* is a binary variable equal to one for observations in 2018 and later. Standard errors are presented in parentheses beneath each coefficient estimate. ***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels, respectively.