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# Performance reporting of comprehensive income and earnings management

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Dissertation

# PERFORMANCE REPORTING OF COMPREHENSIVE INCOME AND EARNINGS MANAGEMENT

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## DEDICATION

I would like to dedicate this dissertation to my husband Yuanxi and my parents for their love and support during my doctoral studies.

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**PERFORMANCE REPORTING OF COMPREHENSIVE INCOME**

**AND EARNINGS MANAGEMENT**

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ABSTRACT

In 2011, the Financial Accounting Standards Board issued ASU 2011-05, which mandates that Comprehensive Income (CI) and Other Comprehensive Income (OCI) be reported in the performance statements (i.e., either in the income statement or a separate statement of comprehensive income) rather than in the previously-allowed equity statement. Using this issuance as an exogenous event, I examine whether the presentation of accounting information in different statements affects earnings management behavior. In particular, I investigate whether the required presentation of CI/OCI in the performance statements reduces earnings management through selective sales of available-for-sale (AFS) securities in the banking industry. I first document that prior to ASU 2011-05, banks presenting CI/OCI in the equity statements engage in more management of realized gains and losses on AFS securities compared to banks presenting CI/OCI in the performance statements. More importantly, employing a difference-in-differences design, I show a larger reduction in (though not complete elimination of) earnings management for banks mandated to switch the reporting position of CI/OCI, relative to a control group of banks voluntarily using performance statements prior to the mandatory

adoption. Overall, this evidence suggests that mandated reporting of CI/OCI in the performance statements reduces banks' earnings smoothing behavior.

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## LIST OF ABBREVIATIONS

AFS ..... Available-For-Sale

ASU ..... Accounting Standard Update

CI ..... Comprehensive Income

FASB ..... Financial Accounting Standards Board

NI ..... Net Income

SEC ..... U.S. Securities and Exchange Commission

SFAS ..... Statement of Financial Accounting Standard

SCSE ..... Statement of Changes in Shareholders' Equity

OCI ..... Other Comprehensive Income

OTTI ..... Other Than Temporary Impairments

# PERFORMANCE REPORTING OF COMPREHENSIVE INCOME AND EARNINGS MANAGEMENT

## 1. INTRODUCTION

This paper investigates whether presenting comprehensive income in the performance statements rather than equity statements reduces earnings management using realization of gains and losses on available-for-sale (AFS) securities in the banking industry. Accounting Standard Updates (ASU) No. 2011-05 (hereafter ASU 2011-05) on *Reporting of Comprehensive Income* (Topic 220) requires comprehensive income (CI) and other comprehensive income (OCI) items to be reported in either the income statement or a separate statement immediately following the income statement, both of which are characterized by the Financial Accounting Standards Board (FASB) and researchers as "performance statements." Previously, the majority of firms presented CI and OCI in the equity statement; thus, issuance of ASU 2011-05 led to a large number of firms changing their presentation of CI and OCI to the performance statements after December 2011.

The FASB explicitly highlights that a main objective of this standard update is to increase the prominence of CI/OCI, and therefore improve the transparency of financial reporting. The more prominent reporting of CI/OCI in the performance statements likely promotes the role of CI as a performance measure, thus reducing managers' incentives to manage the realization of gains and losses on AFS securities, as these realized gains and losses only affect the value of net income (NI) but not the value of CI. Accordingly, I expect the enactment of ASU 2011-05 reduces earnings

management using selective sales of AFS securities.[1]

Prior empirical studies (Lee et al., 2006; Bamber et al., 2010) examine the determinants of the firm choice to present CI/OCI in the equity statements versus the performance statements. Both papers document that the main driver of this choice is managers' tendency to smooth earnings.[2] However, it remains unclear whether eliminating the equity statement reporting of CI/OCI reduces managers' earnings management behavior. On the one hand, reporting CI/OCI in the performance statement could emphasize the usefulness of CI/OCI in the performance evaluation, highlight the difference between CI and NI, and thus help reveal earnings management through selective sales of AFS securities (Hirst and Hopkins, 1998; Lee, et al., 2006). In this case, rational managers would be less likely to engage in earnings management, if they believe the changed reporting leads to higher chances of detection (Fields et al., 2001; Hirst et al., 2003). Thus, I expect that firms choosing to report CI/OCI in the equity statements before the enactment of ASU 2011-05 are more likely to selectively sell AFS securities to affect bottom line net income in the pre-update period relative to firms choosing to report CI/OCI on a separate statement of comprehensive income. Further, I expect that the former firms will exhibit a relatively greater reduction in earnings management after the

[1] Since managers principally influence the realization of gains and losses on AFS securities through the sales of AFS securities, I use term "realizing gains and losses", "selling AFS securities", "realization of gains and losses" and "sales of AFS securities" interchangeably.

[2] Lee et al. (2006) documents that insurance companies with a history of managing realized gains and losses to smooth earnings are more likely to present CI/OCI in equity statements rather than performance statements. Bamber et al. (2010) finds that firms with more equity-related CEO compensation are more likely to present CI/OCI in equity statements.

adoption of ASU 2011-05. However, if managers do not believe that changing the reporting position of CI/OCI significantly increases investors' ability to detect selective sales of AFS securities, then I will fail to document any change in earnings management behavior.

Using hand-collected data of reporting positions of CI/OCI for a sample of bank holding companies[3] from 2010 to 2014, I compare banks' earnings management through selective sales of AFS securities for those reporting CI/OCI in the equity statements versus those reporting CI/OCI in the performance statements. Following prior papers (Beatty and Harris, 1999; Lee et al., 2006; Dong et al., 2014; Barth et al., 2015), I measure earnings management through selective sales of AFS securities using the association between realized gains and losses on AFS securities and net income before realized gains and losses on AFS securities after controlling for the other firm and time-series effects. Based on the signs of the association, earnings management behaviors are categorized as either earnings smoothing (when the association is negative) or "big bath" (when the association is positive) behaviors.

Using ASU 2011-05 as an exogenous treatment that changes the reporting position of CI/OCI for a large portion of firms, I conduct a difference-in-differences

[3] I focus on bank holding companies because: (i) the availability of quarterly bank regulatory-reports-data enables me to examine earnings management through realizing gains and losses on AFS securities; (ii) relative to the other industries, banks usually have larger amounts of AFS securities, which gives them more opportunities to manage earnings through selectively selling AFS securities; and (iii) prior research documents that the opportunistic sale of AFS securities is a primary mechanism by which banks manage earnings on or above the bottom line net income.

design to study the effect of reporting positions of CI/OCI on banks' earnings management. Consistent with expectations, empirical results reveal that, prior to the enactment of ASU 2011-05, banks with CI/OCI reported in the equity statements exhibit more earnings smoothing behaviors through selective sales of AFS securities relative to those reporting CI/OCI in the performance statements. In addition, the results reveal that banks that previously report CI/OCI in the equity statements also experience a more pronounced decrease in this same earnings smoothing behavior compared to those banks, which have always reported CI/OCI in the performance statements. The results further suggest that even after adopting the performance reporting of CI/OCI, banks that previously report CI/OCI in the equity statements continue to exhibit significant earnings smoothing behaviors. I fail to find a significant effect of performance reporting of CI/OCI on "big bath" behaviors. Overall, the evidence suggests that the mandated reporting of CI/OCI in the performance statement mitigates—but does not completely eliminate—earnings smoothing behavior.

Additional tests examine whether the documented change in earnings management behaviors following the adoption of ASU 2011-05 varies across certain cross-sectional bank characteristics. In particular, I predict that the above results should be accentuated for firms with stronger monitoring. Confirming this expectation, the results suggest that the influence of ASU 2011-05 is mainly on the treatment banks audited by Big 4 firms. The results also show that treatment banks with a higher level of analysts following and institutional ownership exhibit fewer

earnings smoothing behaviors using AFS securities in the pre-update period, and therefore are less affected by ASU 2011-05.

This study makes three primary contributions. It is the first empirical study using a natural experiment to examine how the presentation of recognized items in different financial statements affects managers' earning management behaviors. As such, it complements prior research, which focuses on experimental settings to examine this issue (e.g., Hirst and Hopkins 1998). The presentation of CI/OCI studied in this paper is novel because, in contrast with previously-examined presentation issues (particularly recognition versus disclosure, and classification shifting), the current setting helps to isolate the effect of the presentation of the reported information by holding constant the recognition of the information. Moreover, the current paper focuses on a presentation effect, as there is no change on the bottom line reported values: specifically, bottom line NI is unaffected by ASU 2011-05. Thus, the current paper isolates the effect of the presentation decision on managers' earnings management behavior. Second, the findings in this paper have important policy implications to the widespread debate concerning the appropriate presentation of CI/OCI. In particular, the findings suggest that the more prominent presentation of CI/OCI reduces earnings management behavior. Finally, this paper adds to the prior literature on earnings management in banks (e.g., Beatty et al. 2002; Barth et al. 2015) through selective sales of AFS securities by documenting that financial statement presentation also affects this behavior.

Section 2 summarizes the background of the related literature and

regulations, and develops the hypotheses. Section 3 describes the research design. Section 4 presents the sample selection process. Section 5 discusses the primary empirical results. Sections 6 and 7 presents the supplemental tests and sensitivity tests. Section 8 concludes.

## 2. BACKGROUND AND HYPOTHESIS DEVELOPMENT

### 2.1 Background and Literature Review

#### 2.1.1 The Performance Reporting of Comprehensive Income

The controversy surrounding the appropriate presentation of CI originates from the debate between two concepts of income disclosure: "all-inclusive" and "current operating performance." Under the "all-inclusive" concept, income reporting should cover all the changes in the net assets during the current period, except dividend distributions and transactions from the owner sources. In contrast, under the "current operating performance" concept, income excludes extraordinary and nonrecurring gains and losses. The FASB implemented the reporting of CI under Statement of Financial Accounting Standard (SFAS) 130 (FASB, 1997), which in part encompasses the "all-inclusive" concept. SFAS 130 defines CI as the sum of net income (NI) and OCI items, where OCI includes four principle components relating to the fair value adjustments on AFS securities, derivative instruments, foreign currency translations, and pension obligations.

SFAS 130 permits four alternative formats to report CI/OCI: 1) in the income statement with NI; 2) in a separate statement of comprehensive income, starting

with NI and ending with CI immediately following the income statement; 3) in the statement of changes in shareholders' equity (i.e., equity statement); or 4) in a separate statement of comprehensive income, starting with NI and ending with CI (but not immediately following the income statements).[4] The first two methods (Method 1 and 2) are categorized by the FASB and academic researchers as performance statements. Appendix 1 presents examples of reporting CI/OCI in the performance statements (Methods 1 and 2) and the equity statements (Method 3). The FASB initially proposed only Methods 1 and 2 in the exposure draft of SFAS 130, since OCI items should be considered as part of firm's financial performance when the "all-inclusive" concept is applied. However, Methods 3 and 4 were later allowed into SFAS 130 because of the opposing views to the performance reporting of CI/OCI expressed by financial statement preparers during the public comment period. In particular, opponents of performance reporting of CI/OCI believe that the unrealized gains and losses in OCI are out of managers' control, and thus should not be used for performance evaluation (Yen et al., 2007). Maines and McDaniel (2000) documents that 90 percent of the comment letters on the proposed draft of SFAS 130 support a disclosure of CI in the equity statements or footnotes. Consistent with this viewpoint, the vast majority of companies present CI/OCI in the equity

[4] Before the enactment of ASU 2011-05, the FASB did not require that statements of comprehensive income be reported following the income statements. Thus, some firms present CI/OCI in a separate statement of comprehensive income following the equity statement or the statement of cash flow under SFAS 130. However, this presentation (i.e., Method 4) is rarely used, and thus excluded from the analyses in this paper.

statement (Method 3) after the enactment of the SFAS 130.[5]

In 2011, the FASB eliminated the options of Methods 3 and 4 in ASU 2011-05; this change was done to enhance the transparency of CI/OCI, and thus increase investors' usage of this information. Therefore, in response to ASU 2011-05, the majority of companies switched their reporting position of CI/OCI from the equity statements (Method 3) to the performance statements (Methods 1 and 2) in the fiscal periods after December 2011.

Experimental studies find that both professional and nonprofessional investors are more likely to incorporate CI/OCI information into the performance evaluation when these elements are presented in the performance statements (Hirst and Hopkins, 1998; Maines and McDaniel, 2000). Hirst and Hopkins (1998) finds that buy-side analysts can detect earnings management through selective sales of AFS securities only when CI/OCI are reported in a separate statement of comprehensive income (Method 2), but fail to do so when presented in an equity statement (Method 3). Maines and McDaniel (2000) finds that non-professional accounting information users only consider the volatility of unrealized gains and losses on AFS securities when it is presented in a separate statement of comprehensive income (Method 2). However, contrary to the above experimental papers, empirical studies fail to find that performance reporting of CI/OCI increases

[5] Bamber et al. (2010) finds that about 80% of S&P 500 firms report CI/OCI in the equity statements. Jordan and Clark (2011) documents that about 63% of financial service companies report CI/OCI in the equity statements.

investors' attention to this information (Cahan et al., 2000; Chambers et al., 2007; Schaberl and Victoravich 2015).[6]

### 2.1.2 Managing Earnings through Selective Sales of AFS Securities

Earnings management through selective sales of investment securities has been documented by many studies of financial institutions, especially those focusing on the banking industry (e.g. Barth et al. 1990; Beatty et al. 1995; Collins et al., 1995 and Beatty et al., 2002). Using a sample period and data after investment securities are categorized by SFAS 115, Barth et al. (2015) and Dong et al. (2014) examine earnings management through realizing gains and losses on AFS securities. Both papers argue that among all three types of investment securities defined under SFAS 115, only AFS securities would be used to strategically time the realization of gains and losses to affect NI. Specifically, under the provisions of SFAS 115 and 130, the unrealized gains and losses on AFS securities cannot be recognized into NI until the security is sold, disposed or the impairment is deemed other-than-temporary. Thus, firms' decisions regarding when to sell AFS securities (and which AFS securities to sell) determine when and which part of the difference between the fair value and the purchase value of AFS securities is recognized into NI.[7, 8]

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[6] Chambers et al. (2007) and Schaberl and Victoravich (2015) find OCI items more value relevant when presented in the equity statements versus in the performance statements. Both papers suggest that investors are more likely to use the accounting information when it is reported in the expected location based on the firms' reporting history.

[7] The realized gains and losses on AFS securities examined in this paper is a measure reported in FR Y-9C, which includes net gain or loss realized from the sale, exchange, redemption or retirement of all AFS securities. This value also includes Other-Than-Temporary Impairments

Managing earnings using AFS securities could be less costly than engaging in accrual earnings management or other types of real earnings management, and consequently attractive to managers. First, managers can influence realized gains and losses on AFS securities mainly through sales of AFS securities, which are real business decisions and not as subject to outside scrutiny as accruals management. Second, compared to other real earnings management tools, the real effect of selling AFS securities can be easily mitigated by repurchasing the securities shortly after sales.

Managers have incentives to selectively sell AFS securities only if they believe that NI is the earnings target but CI is not. If CI is the main earnings target for managers, there is no need to engage in this kind of earnings management, as CI is unaffected by realizing gains and losses on AFS securities. However, in practice, most equity investors and managers view NI or the income items above NI as the primary performance measures. Prior research provides evidence consistent with this notion. Barton et al. (2010) finds that the core operating income or the earnings measures above the bottom line of NI are more value relevant than CI. Jones and Smith (2011) finds a weaker stock response to OCI than to earnings

(OTTI) on AFS securities. I assume that managers have to trade AFS securities to manage earnings through realizing gains or losses, since OTTI and reclassifying AFS to the other securities are generally rare in my sample.

[8] Unlike AFS securities, held-to-maturity securities are measured at amortized cost; further, the selling or reclassifying of held-to-maturities to the other categories prior to maturity are strictly restricted by regulators. In addition, the fair value changes on the trading securities are always recognized into NI, which leaves no motivation for managers to manage NI through realizing gains and losses on trading securities. Reclassifying AFS securities into trading securities requires recording realized gains and losses on AFS securities, same as for selling AFS securities.

before extraordinary items. Dong et al. (2014) examines the valuation of the fair-value-accounting of AFS securities in the banking industry. They find equity investors place higher valuations on the realized (relative to unrealized) gains and losses on AFS securities. As such, managers have incentives to recognize more gains and fewer losses on AFS securities when they want to increase NI, and to recognize more losses and fewer gains on AFS securities when they want to save the gains for the future. Barth et al. (2015) finds that banks' realized gains and losses on AFS securities are negatively associated with quarterly earnings and quarterly regulatory capital ratios before realized gains and losses, suggesting that banks are using realized gains and losses on AFS securities to smooth earnings and capital ratios.

### 2.1.3 Comprehensive Income Reporting and Selective Sales of AFS Securities

The accounting nature of AFS securities summarized above links the detection of selective sales of AFS securities to the performance reporting of CI/OCI. Since CI is unaffected by the selective sales of AFS securities, the discrepancy between CI and NI reveals the effect of such decisions. Thus, equity investors may better detect earnings management through selective sales of AFS securities if CI is in a more salient position, highlighting the discrepancy between CI and NI.[9]

[9] Among all four OCI items, only adjustments on AFS securities and pension plan are documented to be related to earnings management behaviors. Emphasizing CI and OCI components may not be very helpful in detecting pension-related earnings managements, which are usually achieved by changing several pension assumptions. Thus, my study mainly

Hirst and Hopkins (1998) and Maines and McDaniel (2000) argue that reporting CI/OCI in the performance statements increases equity investors' attention on CI/OCI by signaling the usefulness of CI/OCI information in the performance evaluation, as well as emphasizing the link between CI and NI. The statement of changes in shareholders' equity is mainly used to demonstrate the distribution of shareholder's equity rather than the firms' performance in the current period. In particular, reporting CI/OCI in the equity statements with other non-performance-related financial information not only implies that CI/OCI are not relevant to the performance evaluation but also makes CI/OCI information difficult to extract.

Earnings management behaviors that are easy to detect not only fail to fool equity investors, but also may dampen firms' stock price (Lundholm 1999; Hirst et al. 2003). Thus, managers, who intend to selectively sell AFS securities to manage earnings would avoid using performance reporting of CI/OCI, *if* they believe such reporting increases the chance for investors to detect their earnings management behaviors. Two empirical studies (Lee et al. 2006; Bamber et al. 2010) examine the determinants of firms' choice of equity statements over income statements or separate comprehensive income statements to report CI/OCI. Lee et al. (2006) finds that insurers with a history of "cherry picking" realized gains and losses on investment securities and lower disclosure quality are more likely to choose the

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examines the effect of reporting position of CI on earnings managements through AFS securities.

equity statement to report CI/OCI. Bamber et al. (2010) finds firms with more equity incentives in their CEO compensation are more likely to choose the equity statement to report CI/OCI. However, the evidence in these papers does not directly answer the question of whether mandating the reporting of CI/OCI in the performance statements decreases earnings management using selective sales of AFS securities.

## 2.2 Hypotheses

This paper investigates whether reporting CI/OCI in the different statements affects banks' earnings management through selective sales of AFS securities. I focus on the banking industry for two reasons. First, relative to the other industries, banks have larger amounts of AFS securities, which affords the banks more flexibility to use these financial instruments (opportunistically) to achieve reporting objectives.[10] As such, earnings management through selective sales of AFS securities primarily occurs in the banking setting (e.g., Barth et al., 2015; Dong et al., 2014). Second, the availability of AFS-securities-related data in Bank Regulatory database enables me to examine this type of earnings management behavior.

I use the enactment of ASU 2011-05 as an exogenous event to measure the influence of the performance reporting of CI/OCI on banks' earnings management

[10] For the public banks sample in my paper, AFS securities account for 18% of total assets on average. Of note, I do not find significant changes in the AFS securities level during my test period.

behavior.[11] Following Lee et al. (2006) and Bamber et al. (2010), relative to the banks with CI/OCI presented in the performance statements, I predict that the banks presenting CI/OCI in the equity statement are more likely to engage in earnings management through selective sales of AFS securities before adopting ASU 2011-05. This prediction follows because these banks either (a) have more opportunity to do so or (b) their accounting choices reflect their incentives to manage earnings.[12] Thus, my first hypothesis is (stated in an alternative form):

**H1:** Prior to the adoption of ASU 2011-05, banks presenting CI/OCI in the equity statement engage in more earnings management through selective sales of AFS securities relative to banks presenting CI/OCI in the income statement or a separate statement following the income statement.

My main research interest is assessing whether the mandated switch under ASU 2011-05 from reporting CI/OCI in the equity statements to the performance statements reduces the management of realizing gains and losses on AFS securities. Rational managers would be less likely to engage in this earnings management behavior if it is believed to have a higher chance of detection. Restated, the more

[11] ASU 2011-05 also suggests a reporting reclassification adjustment with both OCI and NI in the performance statements. However, this requirement was retracted later in the same year. In my sample, most banks always report 1) gains and losses from sales of AFS securities, 2) other than temporary impairment on AFS securities and 3) any adjustments from reclassifying AFS securities to other securities, the sum of which are basically the reclassification adjustment currently presented under OCI, in the income statements as non-interest income items. For my sample banks, the main effect of ASU 2011-05 is changing the reporting position of CI/OCI from the equity statements to the performance statements.

[12] In this paper, I treat both one-single-statement reporting and two separate statements reporting as performance reporting. In my sample, only 8 banks used one-single-statement to reporting CI/OCI before2012. 9 banks started to use one-single-statement in 2012. But only 15 firms in total used one-single-statement in 2012, and reduce to 11 firms after 2012.

prominent presentation of CI/OCI increases the expected costs and reduces the expected benefits of engaging in this earnings management behavior. Thus, if managers believe that presenting CI/OCI in the performance statements increases the chance of related earnings management being detected (as suggested by Hirst and Hopkins, 1998), they would reduce such earnings management after adopting ASU 2011-05.

Most firms are required by ASU 2011-05 to switch their reporting position of OCI in their fiscal year 2012, except the firms that voluntarily present OCI in the performance statements prior to the enactment of ASU 2011-05. Thus, I predict that ASU 2011-05 only reduces management of realized gains and losses on AFS securities for banks presenting CI/OCI in the equity statements before 2012 (hereafter *treatment banks*); that is, the treatment banks are those required to switch from reporting CI/OCI in the equity statements to the performance statements. In contrast, I predict that ASU 2011-05 will not affect (or have a smaller effect on) those banks, which always present CI/OCI in the performance statements (hereafter *control banks*). In particular, the latter banks are not changing their presentation of CI/OCI, and should thus exhibit no change in the expected net benefits of this earnings management behavior. This leads to my second hypothesis (stated in an alternative form):

**H2:** Subsequent to the adoption of ASU 2011-05, banks mandated to switch the reporting position of CI/OCI (treatment banks) exhibit a larger decline in earnings management through selective sales of AFS securities relative to

banks already presenting CI/OCI using the required position in ASU 2011-05 before 2012 (control banks).

H2 would fail to be rejected if managers believe that changing the reporting position of CI/OCI will not significantly increase investors' ability to detect selective sales of AFS securities. The managers could believe this for three principle reasons. First, the differences between CI and NI are usually viewed as transient fair value changes that are not controlled by the managers and are irrelevant to the firms' and managers' performance. Yen et al. (2007) examines 278 comment letters to the exposure draft of SFAS 130, of which 93 are from banks. 70% of these comment letters oppose the view that CI is a comprehensive earnings measure and value relevant. This percentage is as high as 87% for all the comment letters from large banks and 71% for the letters from small banks.

To investigate whether there is a lack of both demand and supply of CI information, I examine the proxy statements of all the banks and the earnings announcements statement of 20% of the banks randomly selected from my primary test sample (i.e., 42 of 207). I find that no bank includes CI in the performance-based compensation package, while net income per share is always included as the main performance measure. Similarly, I fail to find any banks that disclose comprehensive income per share in their earnings announcements.

Second, changing the reporting position of CI/OCI does not significantly affect the role of bottom line net income as the main performance measure. I find no increase in the usage of CI in either the manager compensation package or earnings

announcements after the enactment of ASU 2011-05. In other words, changing the reporting position of CI/OCI may not significantly affect investors' attentiveness to the earnings measures above CI.

Third, earnings management using selective sales of AFS securities affects earnings through real operating decisions – when to sell the securities and which securities to sell. Distinguishing between business-driven sales of securities and opportunistic sales of securities could be very difficult for the investors even when CI/OCI information is emphasized. According to the survey paper Dichev et al. (2013), CFOs believe that earnings managements through real actions are difficult to detect by outside analysts.

## 3. RESEARCH DESIGN

The paper uses a difference-in-differences research design. In particular, I define a bank as a *treatment bank* if it presents CI/OCI in the equity statement prior to the enactment of ASU 2011-05 (i.e., in the pre-update period), and thus must switch to reporting CI/OCI in the performance statements in response to ASU 2011-05. Similarly, I define a bank as a *control bank* if it always presents CI/OCI in the performance statement, and thus is unaffected by ASU 2011-05.

In the primary tests, earnings management through AFS securities is measured based on the relation between realized gains and losses on AFS securities and net income before realized gains and losses. Beatty and Harris (1999), Lee et al. (2006), Dong et al. (2014) and Barth et al. (2015) suggest that this association, when

negative, captures earnings smoothing behaviors.[13]

I follow Barth et al. (2015) and estimate the following model with quarterly-data[14]:

$$RGL_{i,t} = \beta\ NIBR_{i,t} + ControlVariables + FirmFixedEffects \quad (1a)$$

$RGL_{i,t}$ is realized gains or losses on AFS securities. $NIBR_{i,t}$ is net income before realized gains or losses on AFS securities, taxes and extraordinary items. Both are scaled by the beginning of quarter total assets. With other firm level characteristics and macroeconomic factors controlled, a *negativ*e and significant $\beta$ indicates earnings smoothing behavior through selective sales of AFS securities.

Barth et al. (2015) documents that when banks' earnings are extremely low, banks are more likely to take a "big bath" rather than to smooth earnings. Because $\beta$ would be *positive* and significant when banks are reducing realized gains to take a "big bath", it is important to separate this kind of earnings management from the

[13] Numerous studies argue that banks have incentives to smooth their earnings. For example, Barth et al. (1995) and Gebhardt et al. (2001) suggest that bank managers have incentives to reduce earnings volatility to decrease the risk premium. Similarly, Kanagaretnam et al. (2003) and Kanagaretnam et al. (2004) find that bank managers smooth earnings to increase job security and for external financing concerns. Beatty and Harris (1999) finds evidence that public banks smooth earnings to reduce information asymmetry, while Barth et al. (2015) finds no evidence supporting this conclusion. Prior studies document earnings smoothing behaviors in the banking industry for decades (e.g., Greenawalt and Sinkey 1988; Beaver et al. 1989; Barth et al. 1990; Scholes et al. 1990; Wahlen, 1994; Beatty et al., 1995; Collins et al., 1995; Barth et al., 1995; Kanagaretnam et al., 2003; Kanagaretnam et al., 2004; Liu and Ryan, 2006; Kilic et al., 2012; Barth et al. 2015). Among these, several papers document earnings smoothing behaviors through realization of securities (Barth et al. 1990; Beatty et al. 1995; Collins et al. 1995; Barth et al. 2015).

[14] Some prior papers (e.g. Bartov, 1993) find that firms sell assets in the 4th quarter to manage earnings. In my sample, I find that the realized gains and losses in the 4th quarter (mean=0.0008) is generally smaller than those in the prior quarters (average mean=0.00013). The discretionary realized gains and losses that calculated in Section 6.3 are not significantly different across four quarters.

more popular earnings smoothing behavior. Since most bank-quarters in my sample have positive earnings before realized gains and losses (only 323 of 4064 bank-quarters have $NIBR_{i,t} < 0$; of these, 145 occur in 2010), I assume that most banks have earnings targets on or above zero and when banks cannot meet the zero target they are more likely to take a "big bath" rather than to increase earnings. Therefore, I predict that banks are more likely to take a big bath if $NIBR_{i,t} < 0$ and do not have sufficient accumulated unrealized gains and losses at the beginning of quarter to offset the negative $NIBR_{i,t}$. Accordingly, Equation (1a) can be transformed into:

$$RGL_{iq} = \beta_1 SmoothNI_{iq} + \beta_2 BigbathNI_{iq} + \beta_3 IndSmooth_{iq} + ControlVariables + FirmFixedEffects \quad (1b)$$

$SmoothNI_{iq}$ equals $NIBR_{iq}$ if $NIBR_{iq} > 0$ or $NIBR_{iq} + AUGL_{q-1} > 0$, and 0 otherwise. $BigbathNI_{iq}$ equals $NIBR_{iq}$ if $NIBR_{iq} < 0$ and $NIBR_{iq} + AUGL_{q-1} < 0$, and 0 otherwise. $IndSmooth_{iq}$ equals 1 if $NIBR_{iq} > 0$ or $NIBR_{iq} + AUGL_{q-1} > 0$, and 0 otherwise. A negative and significant $\beta_1$ indicates earnings smoothing behaviors through selective sales of AFS securities, and a positive and significant $\beta_2$ indicates "big bath" behaviors through selective sales of AFS securities.

To test H1 and H2, I interact indicator variables of treatment banks (*Treat*) and post-update period (*POST*) with earnings items in Equation (1b). Thus, for the primary analyses I estimate Equation (2):

$$RGL_{iq} = \beta_1 SmoothNI_{iq} + \beta_2 BigbathNI_{iq}$$

$$+ \beta_3 Treat \times SmoothNI_{iq} + \beta_4 Treat \times BigbathNI_{iq}$$

$$+ \beta_5 POST \times SmoothNI_{iq} + \beta_6 POST \times BigbathNI_{iq}$$

$$+ \beta_7 Treat \times POST \times SmoothNI_{iq} + \beta_8 Treat \times POST \times BigbathNI_{iq}$$

$$+ \beta_9 AUGL_{i,q-1} + \beta_{10} RegCap_{iq} + \beta_{11} AFS_{iq} + \beta_{12} TED_q + \beta_{13} VIX_q$$

$$+ \beta_{14} POST + \beta_{15} Treat \times POST + \beta_{16} IndSmooth_{iq}$$

$$+ \beta_{17} Treat \times IndSmooth_{iq} + \beta_{18} POST \times IndSmooth_{iq}$$

$$+ \beta_{19} Treat \times POST \times IndSmooth_{iq} + FixedEffects \quad (2)$$

If realized gains and losses on AFS securities are used to smooth earnings, then $SmoothNI_{iq}$ will have a negative association with $RGL_{iq}$. If managers selectively sell AFS securities to take a "big bath", $BigbathNI_{iq}$ will have a positive association with $RGL_{iq}$. I predict that treatment banks have more earnings management through selective sales of AFS securities in the pre-update period relative to control banks (H1); that is, $\beta_3$ is predicted to be negative, and $\beta_4$ to be positive. I also predict that treatment banks have a more pronounced decrease in selective sales of AFS securities after the enactment of ASU 2011-05 (H2); that is, $\beta_7$ is predicted to be positive, and $\beta_8$ to be negative.

I include three variables to control for the other determinants of $RGL_{iq}$. $AUGL_{i,q-1}$ is accumulated unrealized gains or losses on AFS securities at the beginning of the quarter scaled by lagged total assets. I expect $AUGL_{i,q-1}$ to be positively and significantly associated with $RGL_{iq}$. To control for the banks' incentives to manipulate regulatory capital ratios, I include banks' end of quarter

capital ratio ($RegCap_{iq}$), calculated as the sum of allowable Tier 1 and Tier 2 regulatory capital before realized gains and losses on AFS securities and after taxes scaled by the risk-weighted assets. The predicted association is negative. $AFS_{iq}$, which represents the total AFS securities in fair value scaled by the total assets, is included to control for the size of bank's AFS securities. Following Barth et al. (2015), I include the proxy of implied volatility of options on the S&P500 Index (i.e. *VIX* proxy) and the *TED* spread proxy (calculated as the difference between the three-month LIBOR and the three-month T-bill interest rate) to control for the macroeconomic factors. Firm fixed effects are included to control for the firm average realized gains and losses on AFS securities.

## 4. SAMPLE SELECTION

### 4.1. Sample Selection Process

I base my sample mainly on the bank holding companies registered with U.S. Federal Reserve Bank of Chicago in the Bank Regulatory Database (WRDS). This provides quarterly accounting data from forms filed by the regulated depository financial institutions. The main variables of interest are realized gains and losses and unrealized holding gains and losses on AFS securities. To study the reporting position of CI/OCI, I require banks to have CIK codes to collect the reporting position data of CI/OCI in the 10-K and 10-Q filings from the SEC EDGAR system.

Most firms do not switch the reporting position of CI/OCI from period to period after they are required to start reporting CI/OCI in 1998, and always use the

same reporting method in both 10-K and 10-Q filings. To demonstrate, I present the yearly distribution of reporting positions of CI for all bank holding companies registered with SEC in Table 1.[15] Most banks present CI using equity statements until 2011. On average, the percentage of performance statement users is about 21% of all the sample banks from 1998 to 2010. Before 2011, banks seldom switch the reporting position of CI. Most switches occur in 2011 and 2012, when ASU 2011-05 is issued and becomes effective.

<Table 1>

To answer the research question in this paper, I mainly focus on the test period 2010-2014. I start my test period from 2010 to eliminate the influence of financial crisis. From 2010 to 2014, I have 500 unique bank holding companies with 10-K and 10-Q filling data available in the SEC EDGAR system.

<Table 2>

The sample selection process is presented in Table 2 Panel A. To estimate the difference-in-differences research design, I require sample banks to have at least two years of data both prior to and after the enactment of ASU 2011-05 to observe

[15] For the reporting position data in Table 1, I exclude 29 banks that either did not consistently use the same reporting method of CI in their 10-K and 10-Q filings or have a comprehensive income statement that does not immediately follow the income statement. I exclude these banks since it is difficult to classify them as either *Equity Statement Users* (i.e. Method 3 users) or *Performance Statement Users* (i.e. Method 1 or 2 Users). For each fiscal year, Table 1 demonstrates the number of firms presenting CI in the equity statements (Column 1), the number of firms presenting CI in the performance statements (Column 2), the number of firms that switched the reporting position of CI from the performance to the equity statements (Column 3), the number of firms that switched the reporting position of CI from the equity to the performance statements (Column 4) and the total number of sample banks (Column5). This sample does not require firms to have the regression data from the Bank Regulatory Database, and therefore is larger than the primary sample used for the regression tests (see Table 2).

changes in earnings management. I define a bank as a treatment (control) bank if it always reports CI/OCI in the equity statements (performance statements) during their fiscal year 2010 and 2011. I exclude 13 banks that reported CI/OCI in a separate statement not following the income statement (Method 4[16]), and 7 banks that did not consistently use the same reporting method in their 10-Q and 10-K filings prior to ASU 2011-05. In the main tests, I define the pre-update period as 2010–2011, and the post-update period as 2012–2014 (to maximize the statistical power).[17] All the banks are required by ASU 2011-05 to use performance statements (i.e. Method 1 and 2) in their fiscal year start after Dec 15th 2011. I exclude 31 banks that adopted the updates early in 2011 immediately after the announcement of ASU 2011-05 in May and 5 banks that delayed their adoption of ASU 2011-05 to their fiscal year 2013[18]. Finally, I require banks to have necessary data available in Bank Regulatory and Compustat database for at least 4 years from 2010 to 2013. The above process leads to a final sample of 207 banks, of which 175 are treatment banks and 32 are control banks; the primary regression analyses use 4,064 bank-quarters with relevant variables available.

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[16] As suggested in the prior sections, this study focuses on the difference between the reporting choice Method 3 (equity statements) and Methods 1 and 2 (performance statements currently allowed under ASU 2011-05).

[17] In untabulated robustness tests, I conduct the analyses using a balanced panel from 2010–2013; results are similar to those presented in Table 6.

[18] These 5 banks can delay their adoption because that ASU 2011-05 requires all the public firms to apply in their fiscal year start after Dec 15, 2011, and these banks have fiscal year end before December and after May.

4.2 Matched Subsample

One concern of my difference-in-differences research design is that the treatment banks and the control banks are not assigned randomly. That is, control banks voluntarily choose to use performance statements before 2012, and therefore are not affected by the treatment in 2012 (i.e., ASU 2011-05). Thus, the different characteristics between treatment and control banks that drive them to make different reporting decisions might also explain observed differences in how earnings management behavior changes following the exogenous event of ASU 2011-05. Two items mitigate this concern. First, as shown in Table 1, firms' choice of the reporting position of CI is (on average) sticky: few firms switch the reporting position of CI/OCI since they are required to report CI from 1998 under SFAS 130 until they are mandated to change in response to ASU 2011-05. Therefore, the factors that firms base the decision of the reporting position of CI/OCI on in 1998 are less likely to be the main determinants of firms' operations many years later. Second, Lee et al. (2006) and Bamber et al. (2010) both document that the main determinant of firms' choice to report CI/OCI in the equity statement rather than the performance statements is the tendency to smooth earnings using selective sales of AFS securities. Their studies suggest that the popular use of equity statements to report CI/OCI reflects firms' incentives to manage earnings, and my study examines whether firms' earnings management decreases when the change in the reporting position of CI/OCI causes a possible increase in the scrutiny of this type of earnings management.

Nonetheless, to further mitigate the concern of the difference between treatment and control banks, I also conduct regression analyses using a subsample, in which the treatment banks are matched to the control banks based on the quarterly average long-term debt ratio, market-to-book ratio, size, and AFS security level (i.e., *LD*, *MTB*, *SIZE,* and *AFS*) in the pre-update period (2010 to 2011). I choose these four matching variables because 1) except for *AFS*, the other three variables are documented determinants of earnings management behaviors in the prior literature; and 2) treatment banks and control banks significantly differ in the level of *AFS* and *SIZE* in the pre-period. The matching process is presented in Table 3; all variables are defined in Appendix 2.

<Table 3>

Since the treatment banks ($N$ = 175) are more numerous than the control banks ($N$ = 32), I match each control bank to a treatment bank with the closest average quarterly *LD*, *MTB*, *SIZE,* and *AFS* in the pre-update period (2010–2011) using a Mahalanobis matching method. After matching, I have 32 treatment banks and 32 control banks. As shown in Table 3, treatment banks and control banks do not exhibit significant differences in the matching variables in the pre-update period after the matching.[19] Because it is important to observe the changes in earnings management through AFS securities of the whole treatment banks sample after they

[19] Regulatory capital ratios and the indicator variable of Big 4 auditors are not used in the matching process because 1) Regulatory capital ratios do not significantly differ between the treatment banks and the control banks in the pre-update period; and 2) the proportion of banks engaging Big 4 auditors are similar between the treatment banks (84 of 175) and the control banks (14 of 32). After matching, 16 of 32 treatment firms are audited by Big 4 auditors.

are all forced to change the reporting position of CI/OCI, I conduct all the difference-in-differences analyses with both the whole sample (207 banks, with 175 treatment and 32 control) and the matched subsample (64 banks, with equal number of treatment and control).

## 5. RESULTS

### 5.1 Descriptive Statistics

Table 4 compares the descriptive statistics between treatment and control banks before and after matching.

<Table 4>

In general, the descriptive statistics of variables in Equation (2) are similar to those presented in Barth et al. (2015). The average quarterly earnings before realized gains and losses on AFS securities is positive, and not significantly different between treatment and control banks. As shown in Panel A, in general, compared to the control banks, the treatment banks are smaller with less AFS securities, less long-term debt, less institutional ownership and smaller capital ratios before realized gains and losses. Panel B presents the descriptive statistics for the treatment banks after the matching process; most variables do not differ between the treatment and the control banks, except $RegCap_{iq}$ and $Big4_{iq}$. The mean of $RegCap_{iq}$ is about 15% for the matched treatment banks, but close to 16% for the control banks, both of which are much higher than the typical regulatory requirements (e.g., 8% under Basel II). The portion of the matched treatment banks audited by Big 4 firms is 16 of

32, whereas that of control banks is 14 of 32.

<Table 5>

Table 5 presents Pearson correlations for both the whole sample (Panel A) and the matched subsample (Panel B). $RGL_{iq}$ is negatively and significantly associated with earnings before realized gains and losses ($NIBR_{iq}$), consistent with banks using realized gains and losses to smooth earnings. As expected, $RGL_{iq}$ is also positively and significantly associated with the beginning of the period accumulated unrealized gains and losses and total AFS securities level ($AUGL_{iq-1}$and $AFS_{iq}$).

5.2 Difference-in-differences Analyses of Earnings Management Through AFS Securities

Columns (1) and (2) in Table 6 present the regression results of Equation (2) with the whole sample and the matched subsample, respectively; the results are similar across the two samples.

<Table 6>

Consistent with my expectations and the results in Barth et al. (2015), $AUGL_{i,q-1}$ is positively and significantly associated with $RGL_{iq}$, and $RegCap_{iq}$ is negatively and significantly associated with $RGL_{iq}$. The negative association between $RegCap_{iq}$ and $RGL_{iq}$suggests that banks in my sample are using selective sales of AFS securities to manage regulatory capital ratios.

I fail to find evidence of control banks conducting earnings smoothing or big

bath earning management through selective sales of AFS securities in the pre-update period, as the coefficients on $SmoothNI_{iq}$ and $BigbathNI_{iq}$ are both insignificant. I also fail to find evidence that control banks change their earnings smoothing or big bath behaviors in response to ASU 2011-05, as the coefficients on $POST \times SmoothNI_{iq}$ and $POST \times BigbathNI_{iq}$ are both insignificant.

However, consistent with expectations, I do find that the coefficients on $Treat \times SmoothNI_{iq}$ are significantly negative for the whole sample (–0.048, *t*-stat = –2.59) and the matched subsample (–0.090, *t*-stat = –3.23). This suggests that treatment banks exhibit significantly more earnings smoothing through selective sales of AFS securities than control banks in the pre-update period. Results indicate that the sum of the coefficients on $SmoothNI_{iq}$ and $Treat \times SmoothNI_{iq}$, which captures earnings smoothing behavior for the treatment banks in the pre-period, is also significantly negative (–0.066, *t*-stat = –6.31). The coefficient on $Treat \times BigbathNI_{iq}$, which captures the difference between treatment and control banks in "big bath" in the pre-update period, is positive as expected but not significantly different from zero. However, the sum of the coefficients on $BigbathNI_{iq}$ and $Treat \times BigbathNI_{iq}$ in the regression with the whole sample, which captures the "big bath" behavior for the treatment banks in the pre-update period, is positive and significant (0.006, *t*-stat = 1.97). Overall these findings support H1 mainly on earnings smoothing behavior but not on "big bath" behavior.

Regarding H2, coefficients on $Treat \times POST \times SmoothNI_{iq}$ and $Treat \times POST \times$

$BigbathNI_{iq}$ obtain the expected signs for both the whole sample and the matched subsample regressions. Significant coefficients on $Treat{\times}POST{\times}SmoothNI_{iq}$ and $Treat{\times}POST{\times}BigbathNI_{iq}$ support the inference that, relative to control banks, treatment banks exhibit a more pronounced decline in earnings management using selective sales of AFS securities from the pre- to the post-update period.

Focusing on the whole sample, treatment banks' earnings smoothing behavior in the post-update period, captured by the coefficient on $SmoothNI_{iq} + Treat{\times}SmoothNI_{iq} + POST{\times}SmoothNI_{iq} + Treat{\times}POST{\times}SmoothNI_{iq}$ (–0.046, $t$-stat = –4.97), remains negative, but significantly less than that in the pre-update period (captured by the coefficient on $SmoothNI_{iq} + Treat{\times}SmoothNI_{iq}$, –0.066, $t$-stat=–6.31). The difference is captured by the coefficient on $POST{\times}SmoothNI_{iq} + Treat{\times}POST{\times}SmoothNI_{iq}$ (0.020, $t$-stat = 2.08). However, such significant decrease is not found with control banks (captured by the coefficient on $POST{\times}SmoothNI_{iq}$). The regression results with the matched subsample are similar.

I fail to find significant evidence of "big bath" behavior in the post-update period with both the whole sample and matched subsample. In particular, the coefficient on $BigbathNI_{iq} + POST{\times}BigbathNI_{iq}$ and the coefficient on $BigbathNI_{iq} + Treat{\times}BigbathNI_{iq} + POST{\times}BigbathNI_{iq} + Treat{\times}POST{\times}BigbathNI_{iq}$ are both insignificant. One possible explanation for the weak results of

"big bath" earnings management is the lack of bank-quarters exhibiting extremely low earnings.

Figure 1 demonstrates the changes in earnings smoothing behavior, which is captured by the association coefficients that mentioned above, from the pre- to the post-period with the whole sample treatment banks and control banks separately. The solid columns represent significant earnings smoothing behavior that find with treatment banks in the pre- and the post-periods. The dotted columns represent insignificant earnings smoothing behavior that find with control banks in both the pre- and post-update periods.

<Figure 1>

Taken together, the results in Table 6 are consistent with H1 and H2. With both the whole sample and the matched subsample, I find that treatment banks have more pronounced earnings smoothing behavior through selective sales of AFS securities than control banks in the pre-update period (H1). I also find that treatment banks exhibit a larger decrease in earnings smoothing behavior after the enactment of ASU 2011-05, as compared to control banks (H2). Overall, my results suggest that performance reporting of CI/OCI reduces firms' earnings management in this area, but does not completely eliminate it.

## 6. SUPPLEMENTAL ANALYSES

### 6.1 Other Concurrent Events and Placebo Tests

Several important banking industry regulation changes occur at the beginning of my test period (e.g., the issuance of Dodd-Frank Act and the introduction of Basel III). As documented in Barth et al. (2015) and the regression results in Table 6, banks also use selective sales of AFS securities to manage regulatory capital ratios. Since net income is a part of regulatory capital, it is possible that the decline in earnings management observed in my study is driven by the increasingly stringent capital regulations. In Basel III, regulators modified the definition of regulatory capital to include unrealized OCI gains and losses in the capital ratio calculation. This was done to reduce the manipulation of capital ratios through selective sales of AFS securities. However, this change becomes effective for most banks in 2015, which is outside of my test period. In an additional analysis (results are not tabulated), I fail to find that treatment or control banks decrease management of capital ratios, as captured by the association between $RGL_{iq}$ and $RegCap_{iq}$, during the test period.

Several provisions of Dodd-Frank Act went into effect during my test period, which may increase the transparency of banks' disclosure in general and consequently reduce banks' earnings management through AFS securities. However, unlike other earnings management behaviors, the selective sales of securities cannot be restrained by regulators or auditors, and therefore is less likely to be affected by the increased scrutiny. According to my knowledge, there is no

Dodd-Frank provision that specifically applies to the realization of AFS securities. However, the decrease in selective sales of AFS securities might still reflect the trend of increasing accountability and transparency in the banking industry, and the trend might be more pronounced for treatment banks, which are less transparent than control banks. To mitigate this concern, I conduct placebo tests with both the whole sample and the matched subsample. In the placebo tests, I re-estimate Equation (2) with the assumption that the post-update period starts in each quarter during the test period of 2010 to 2014. Table 7 presents the estimations of coefficients on the interaction terms with *POST* in Equation (2) (i.e. $\beta_5$, $\beta_6$, $\beta_7$ and $\beta_8$). The coefficients on $POST \times SmoothNI_{iq}$ and $POST \times BigbathNI_{iq}$ capture the changes in the selective sales of AFS securities for control banks from the pre- to the post-update period. The coefficients on $Treat \times POST \times SmoothNI_{iq}$ and $Treat \times POST \times BigbathNI_{iq}$ capture the additional changes in selective sales of AFS securities for treatment banks relative to control banks. If the significant coefficient on $Treat \times POST \times SmoothNI_{iq}$ observed in Table 6 reflects a trend of increasing accounting quality for the treatment banks, this coefficient would also be significant and positive when the post-period starts in quarters other than the actual one. Table 7 shows the results of the placebo tests with the whole sample and the matched subsample respectively. The bold coefficients and p-values represent coefficients which are significant at a 0.05 level with one-tailed t-tests. Control banks do not have observations with non-zero $BigbathNI_{iq}$ after 2013. Thus, the interpretation of the results in Table 7

mainly focuses on earnings smoothing and big bath behaviors before the 4th quarter of 2013.

<Table 7>

The results in Table 7 demonstrate that the difference-in-differences decrease in earnings smoothing behaviors mainly occurs in 2012 (captured by the coefficient on $Treat \times POST \times SmoothNI_{iq}$), suggesting that this effect is driven by an event in 2012. Of note, there is no significant difference between treatment and control banks' earnings smoothing behaviors trend prior to 2012. The coefficient on $Treat \times POST \times SmoothNI_{iq}$ is more significant when the post-update period starts in the second and the third quarters of 2012, implying that banks may need some time to adjust their earnings smoothing behaviors. Taken together, the placebo tests presented in Table 7 support H2 and are consistent with the inference that ASU 2011-05 reduces earnings management through selective sales of AFS securities.

6.2 Cross-sectional Analyses

Table 6 documents that treatment banks exhibit a significant decrease in earnings smoothing behaviors through selective sales of AFS securities after applying ASU 2011-05. In this section, I identify some firm characteristics that cause the cross-sectional variation in the response to ASU 2011-05. Specifically, I adjust Equation (2) by replacing *Treat* with three firm-characteristic variables: (i) outside scrutiny measured by a Big 4 auditor indicator; (ii) outside scrutiny

measured by the number of analysts following; and (iii) outside scrutiny measured by the level of institutional ownership. I estimate the regressions with only treatment banks to explore whether treatment firms' earnings smoothing behaviors and their response to ASU 2011-05 significantly vary with these three characteristics. The results are presented in Table 8 Panel A to C.

<Table 8>

The results in Table 8 Panel A show that earnings smoothing and big bath behaviors do not differ in the pre-update period across treatment banks that are audited by a Big 4 audit firm and those that are not audited by Big 4 auditor. However, treatment banks that are audited by a Big 4 audit firm significantly decrease their earnings smoothing behavior after applying ASU 2011-05. The results suggest that, within the treatment banks, the decrease in earnings smoothing behavior is mainly observed on banks that are audited by Big 4 audit firms.

The results in Table 8 Panels B and C show that firms with significantly more analysts following or more institutional ownership tend to exhibit less earnings smoothing behavior in the pre-period (captured by $\beta_3$, which is significantly positive in both Panels B and C), and reduce their earnings management in response to ASU 2011-05 (captured by $\beta_7$, which is negative but not statistically significant in both Panels B and C).

It is worth mentioning that coefficient $\beta_8$ in the Table 8 regressions is very significant and always has large magnitudes. $\beta_8$ is expected to capture the additional change in big bath behavior for banks that are audited by Big 4 audit firms, with

significantly more analysts following, or more institutional ownership. For these banks, extremely low earnings in the post-update period is actually very rare. Thus, the coefficient $\beta_8$ in Table 8 is mainly driven by a small number of observations.

6.3 Difference-in-differences Analyses of Discretionary Realized Gains and Losses

In this section I examine the effect of CI/OCI presentation on discretionary realized gains and losses on AFS securities. Several prior studies use discretionary realized gains and losses on investment securities to measure earnings management through selectively selling AFS securities in the banking industry (e.g. Beatty et al., 2002; Cornett et al., 2009 and Cohen et al., 2014). I measure discretionary realized gains and losses on AFS securities (DRGL) based on the Beatty et al. (2002) model with several extensions. I measure the normal portion of realized gains and losses on AFS securities as:

$$RGL_{iq} = \gamma_0 + \gamma_1 1/Assets_{iq} + \gamma_3 AUGL_{i,q-1} + \gamma_4 RegCap_{iq} + \gamma_5 AFS_{iq} + firm\ fixed\ effects + quarterly\ fixed\ effects + \epsilon_{it} \quad (3)$$

where $RGL_{iq}$, $AUGL_{i,q-1}$, $RegCap_{iq}$ and $AFS_{iq}$ are as previously defined. $Assets_{iq}$ represents total assets. Discretionary realized gains and losses ($DRGL_{iq}$) is defined as the difference between actual $RGL_{iq}$ and "normal" realized gains and losses (i.e. $RGL_{iq} - \widehat{RGL_q}$), estimated using the whole sample (N=4064)[20].

I examine how the reporting position of CI/OCI affects both signed discretionary realized gains and losses ($DRGL_{iq}$) and the absolute value of

[20] The adjusted R-squared for the estimated regression of "normal" RGL is 0.175.

discretionary realized gains and losses (i.e. $Abs\_DRGL_{iq}$) using a standard difference-in-differences design:

$$DRGL_{iq}(Abs\_DRGL_{iq}) = \alpha_1 + \alpha_2 Treat_i + \alpha_3 Treat_i \times POST_t + \alpha_4 POST_t + \alpha_5 LD_{iq} + \alpha_6 MTB_{iq} + \alpha_7 SIZE_{iq} + \alpha_8 Big4_{iq} + \alpha_9 AFS_{iq} + \alpha_{10} LogAnal_{iq} + \alpha_{11} LogInst_{iq} + \epsilon_{it} \quad (4)$$

where $LD_{iq}$ is long-term debt scaled by total assets, and $MTB_{iq}$ represents the market to book value ratio. $SIZE_{iq}$ is the natural logarithm of total assets. $Big4_{iq}$ equals 1 if the bank is audited by a Big 4 audit firm. $LogAnal_{iq}$ represents the natural logarithm of one plus the number of average quarterly analysts following. $LogInst_{iq}$ represents the natural logarithm of one plus the number of average quarterly institutional ownership as a percentage of total shares outstanding. For bank-quarters where analysts following or institutional ownership is not available, I assume a zero value. Other variables are as previously defined.

In Equation (4), I use $Treat_i$ to capture the difference in DRGL between the treatment and control banks in the pre-update period. I use $POST_t$ to capture the potential mean shifts in DRGL that are caused by other events during the test period[21]. The coefficient on $Treat_i \times POST_t$ captures the difference-in-differences effect. When positive (negative) $DRGL_{iq}$ is the dependent variable, I expect the coefficient on $Treat_i$ to be positive (negative) and significant (H1), and the coefficient on $Treat_i \times POST_t$ to be negative (positive) and significant (H2). When

[21] In untabulated tests, neither replacing *POST* with year fixed effects nor replacing *Treat* with firm fixed effects changes my inferences.

$Abs\_DRGL_{iq}$ is the dependent variable, I expect the coefficient on $Treat_i$ to be positive and significant (H1), and the coefficient on $Treat_i \times POST_t$ to be negative and significant (H2). The estimation results of Equation (4) using both the whole sample and the matched subsample are presented in Table 9.

<Table 9>

I first estimate Equation (4) without any restrictions on net income before realized gains and losses and find weak results supporting H1 and H2. The results are presented in Table 9 Panel A. In the whole sample, I mainly find a pre-period difference and difference-in-differences effect between treatment and control banks on income-decreasing DRGL. For the matched sample, the effects mainly occur on income-increasing DRGL. Then, I re-estimate Equation (4) using only the bank-quarters in which banks are more likely to smooth earnings rather than to take a "big bath" (i.e. $NIBR_{iq} = SmoothNI_{iq}$). Table 9 Panel B shows that after removing the observations with extremely low $NIBR_{iq}$, there are significant pre-period difference and difference-in-differences between treatment and control banks on both the income-increasing and income-decreasing DRGL, which support both H1 and H2. These results are consistent with what I find in Table 6, in that the reporting position of CI/OCI mainly affects the selective sales of AFS securities to smooth earnings.

## 7. Sensitivity Tests

### 7.1 Sensitivity Tests Using Alternative Model Specifications

#### 7.1.1 Sensitivity Tests Using Alternative Earnings and Regulatory Capital Targets

In the regression analyses of Equation (2), I assume the earnings and regulatory capital targets are banks' average net income and regulatory capital ratio. Following Barth et al. (2015), I also consider industry median net income and regulatory capital ratio in the prior quarter as the alternative earnings and regulatory capital targets. Thus, in this section, I examine whether banks use selective sales of AFS securities to smooth earnings towards the industry median in the prior quarter and how the reporting position of CI/OCI affects this behavior.

Accordingly, I replace $NIBR_{i,t}$ in Equation (1) with the difference between bank-quarterly $NIBR_{i,t}$ and industry median $NIBR_t$ in the prior quarter (i.e. $NIBR_{i,t} - mNIBR_{t-1}$). I also replace $RegCap_{i,t}$ with the difference between bank-quarterly $RegCap_{i,t}$ and industry median $RegCap_t$ in the prior quarter (i.e. $RegCap_{i,t} - mRegCap_{t-1}$). The industry median $NIBR_t$ and the industry median $RegCap_t$ are calculated using all the bank holding companies that registered with SEC. I still assume that banks are more likely to take a big bath if $NIBR_{i,t}$<0 and do not have sufficient accumulated unrealized gains and losses at the beginning of the quarter to offset the negative $NIBR_{i,t}$. Thus, I re-estimate Equation (2) with the following replacements: $SmoothNI_{iq}$ is replaced by $abSmoothNI_{iq}$, which equals $NIBR_{iq} - mNIBR_{q-1}$ if $NIBR_{iq}$ >0 or $NIBR_{iq} + AUGL_{q-1}$ >0 and 0 otherwise;

$BigbathNI_{iq}$ is replaced by $abBigbathNI_{iq}$, which equals $NIBR_{iq} - mNIBR_{q-1}$ if $NIBR_{iq}$<0 and $NIBR_{iq} + AUGL_{q-1}$ <0, and 0 otherwise; $RegCap_{i,q}$ is replaced by $abRegCap_{i,q}$, which equals $RegCap_{iq} - mRegCap_{q-1}$. The regression results are presented in Table 10 Panel A.

The results in Table 10 Panel A are very similar to those displayed in Table 6. The significant and negative coefficients on $Treat \times abSmoothNI_{iq}$ in the tests with both the whole sample and the matched sample (i.e. −0.050 and −0.075 respectively) suggest that before the enactment of ASU 2011-05, banks presenting CI/OCI in the equity statements conduct more earnings smoothing towards the industry median earnings through selective sales of AFS securities than banks presenting CI/OCI in the performance statements. The significant and negative coefficients on $Treat \times POST \times abSmoothNI_{iq}$ in the tests with both the whole sample and the matched sample (i.e., 0.036 and 0.038 respectively) suggest that, compared to the banks that always use performance statements to report CI/OCI, banks that were mandated to switch the reporting position of CI/OCI experienced a more pronounced decrease in earnings smoothing from the pre- to the post-update period.

<Table 10, Panel A>

7.1.2 Sensitivity Tests Using Additional Control Variables

Firms may sell securities to raise cash flow. But cash flow is not included in the main regression analyses of Equation (2) since it is already included in the regulatory capital as a part of liquidity assets. As a sensitivity test, I also estimate Equation (2) by further controlling for the incentive to raise cash. Table 10 Panel B presents the regression results of Equation (2) with variable $Cash_{iq}$ included as a control variable. The variable $Cash_{iq}$ is measured as cash and cash equivalents before sales of investment securities scaled by total assets. The results suggest that including additional control variable $Cash_{iq}$ does not significantly affect the inference of the main results in Table 6.

<Table 10, Panel B>

7.1.3 Sensitivity Tests Using Alternative Dependent Variable

Furthermore, I examine whether the regression results of Equation (2) are robust with the dependent variable (i.e., $RGL_{iq}$) replaced by the discretionary realized gains and losses on AFS securities (i.e., $DRGL_{iq}$). The calculation of $DRGL_{iq}$ is explained in Section 6.3. The results of this sensitivity test using alternative dependent variable are presented in Table 10 Panel C. Replacing the dependent variable $RGL_{iq}$ by $DRGL_{iq}$ does not change the sign and the significance level of the coefficient on $Treat{\times}SmoothNI_{iq}$, which is −0.047 ($t$-stat = −2.65) for the whole sample estimation and −0.091 ($t$-stat = −3.30) for the matched subsample.

Similarly, replacing the dependent variable $RGL_{iq}$ by $DRGL_{iq}$ also does not change the sign and the significance level on $Treat{\times}POST{\times}SmoothNI_{iq}$, which is 0.029 ($t$-stat = 1.90) for the whole sample estimation and 0.044 ($t$-stat = 1.68) for the matched subsample.

However, different from the results in Table 6, the coefficients on $AUGL_{iq-1}$ and $RegCap_{iq}$ in Table 10 Panel C are both insignificant, suggesting the discretionary part of the realized gains and losses on AFS securities are not associated with $AUGL_{iq-1}$ and $RegCap_{iq}$. Note that, replacing the dependent variable $RGL_{iq}$ by $DRGL_{iq}$ also significantly reduces the explanatory power (i.e., R-squared) of the estimation regression.

<Table 10, Panel C>

7.1.4 Sensitivity Tests Using Alternative Definition of Big Bath Earnings Management

In the primary analyses, I assume that banks are more likely to take a big bath if $NIBR_{i,t}$<0 and do not have sufficient accumulated unrealized gains and losses at the beginning of the quarter to offset the negative $NIBR_{i,t}$, while in Barth et al. (2015) the authors simply expect banks with negative $NIBR_{i,t}$ to take a big bath. In order to examine whether the results of my primary analyses are robust with Barth et al. (2015)'s definition of "Big Bath Earnings", I re-estimate the following regression with both the whole sample and the matched subsample:

$$
\begin{aligned}
RGL_{iq} = {} & \beta_1 PosiNI_{iq} + \beta_2 NegNI_{iq} \\
& + \beta_3 Treat{\times}PosiNI_{iq} + \beta_4 Treat \times NegNI_{iq} \\
& + \beta_5 POST{\times}PosiNI_{iq} + \beta_6 POST{\times}NegNI_{iq} \\
& + \beta_7 Treat{\times}POST{\times}PosiNI_{iq} + \beta_8 Treat{\times}POST{\times}NegNI_{iq} \\
& + \beta_9 AUGL_{i,q-1} + \beta_{10} RegCap_{iq} + \beta_{11} AFS_{iq} + \beta_{12} TED_q + \beta_{13} VIX_q \\
& + \beta_{14} POST + \beta_{15} Treat{\times}POST + \beta_{16} IndPosi_{iq} \\
& + \beta_{17} Treat{\times}IndPosi_{iq} + \beta_{18} POST{\times}IndPosi_{iq} \\
& + \beta_{19} Treat{\times}POST{\times}IndPosi_{iq} + FixedEffects \qquad (5)
\end{aligned}
$$

where $PosiNI_{iq}$ equals $NIBR_{iq}$ if $NIBR_{iq}$ >0 and 0 otherwise. $NegNI_{iq}$ equals $NIBR_{iq}$ if $NIBR_{iq}$ <0 and 0 otherwise. $IndPosi_{iq}$ equals 1 if $NIBR_{iq}$ >0 and 0 otherwise. All the other variables are defined the same as those in Equation (2). The results are presented in Table 10 Panel D, which are very similar to those in Table 6.

<Table 10, Panel D>

7.2 Sensitivity Tests Using Alternative Subsamples

First, I examine whether the primary results stand with one-single-statement users excluded. In the primary analyses, I treat one-single-statement reporting (i.e. presenting CI in a single statement with NI) and two-separate-statements reporting (i.e. presenting CI in a separate statement of comprehensive income following the income statement) both as performance statement reporting. Since only a few

banks used one-single statement during the test period (see Footnote 12), I am unable to compare the difference between the one-single-statement users and two-separate-statements users in either the pre-update period or the post-update period. However, it is necessary to examine whether the difference between treatment banks and control banks are driven by the banks that voluntarily used one-single-statement reporting method. Thus, I re-estimate the regressions in Table 6 with both the whole sample and the matched subsample respectively, but excluding the one-single-statement users.

In the whole sample, 8 control banks used one-single-statement reporting in the pre-update period, and 9 treatment banks used one-single-statement reporting in the post-update period. Excluding these banks, I have 3,728 bank-quarters from 24 control banks and 166 treatment banks. I first re-estimate Equation (2) with this subsample and present the results in the Table 11 Panel A.

<Table 11, Panel A>

The results in Table 11 Panel A have the same inference with those in Table 6, suggesting that the difference between treatment and control banks and the difference-in-differences effects are not mainly driven by the difference between one-single-statement users and the other banks.

The regression results are also similar with a matched subsample excluding one-single-statement users. To generate this matched subsample, I match each control bank (No.=24) to a treatment bank with the closest average quarterly *LD*, *MTB*, *SIZE* and *AFS* in the pre-update period (2010–2011) using a Mahalanobis

matching method. After matching, I have 24 treatment banks and 24 control banks. The regression results are presented in Table 11 Panel B.

< Table 11, Panel B>

Second, in the main tests, I exclude the treatment banks that switched the reporting position of CI/OCI in either 2011 or 2013 (No.=31 and 5 respectively). In the former case, the firms voluntarily adopt ASU 2011-05 immediately after it was issued but before the mandatory adoption year. In the latter case, the firms with fiscal year end before December and after May can delay the adoption of ASU 2011-05 until their fiscal year 2013. In the sensitivity tests, I estimate the following regression with the treatment banks that switched the reporting position of CI in 2011, 2012 or 2013 all together:

$$\begin{aligned} RGL_{iq} = {} & \beta_1 SmoothNI_{iq} + \beta_2 BigbathNI_{iq} \\ & + \beta_3 Update \times SmoothNI_{iq} + \beta_4 Update \times BigbathNI_{iq} \\ & + \beta_5 AUGL_{i,q-1} + \beta_6 RegCap_{iq} + \beta_7 AFS_{iq} + \beta_8 TED_q + \beta_9 VIX_q \\ & + \beta_{10} Update + \beta_{11} IndSmooth_{iq} + \beta_{12} Update \times IndSmooth_{iq} \\ & + FixedEffects \end{aligned} \quad (6)$$

The results are presented in Table 11 Panel C. *Update* equals 1 in the quarters after treatment banks adopted ASU 2011-05. The coefficient on $Update \times SmoothNI_{iq}$ is positive and significant (0.026, *t*-stat = 2.68), which suggests that, in general, all the treatment banks including those switched reporting position of CI/OCI in 2011 or 2013, exhibit a significant decrease in earnings smoothing through selective sales of AFS securities after applying ASU 2011-05.

<Table 11, Panel C>

Third, I examine whether very large treatment banks also reduced earnings management in response to ASU 2011-05. The "too big to fail" theory suggests that the biggest companies, especially banks, are so vital to the economy and therefore will be supported by the government when facing failure. According to this theory, the largest banks may have different incentives with those smaller banks in accounting choices. For example, the largest banks may not have the similar incentive to smooth earnings or to change their earnings management behavior based on the scrutiny from investors with those of the smaller banks. I estimate the following equation with a subsample of 38 treatment banks that have average total assets in the test period above 10 billion:

$$\begin{aligned} RGL_{iq} = {} & \beta_1 SmoothNI_{iq} + \beta_2 BigbathNI_{iq} \\ & + \beta_3 POST{\times}SmoothNI_{iq} + \beta_4 POST{\times}BigbathNI_{iq} \\ & + \beta_5 AUGL_{i,q-1} + \beta_6 RegCap_{iq} + \beta_7 AFS_{iq} + \beta_8 TED_q + \beta_9 VIX_q \\ & + \beta_{10} POST + \beta_{11} IndSmooth_{iq} + \beta_{12} POST{\times}IndSmooth_{iq} \\ & + FixedEffects \end{aligned} \quad (7)$$

The results are presented in Table 11 Panel D, suggesting that large treatment banks also engage in earnings smoothing using selective sales of AFS securities (captured by significantly negative coefficient on $SmoothNI_{iq}$) and significantly reduce these behaviors after they are forced to present CI in the performance statements (captured by significantly positive coefficient on $POST{\times}SmoothNI_{iq}$).

<Table 11, Panel D>

7.3 Sensitivity Tests Using Alternative Test Period

For the primary tests in Table 6, I conduct a difference-in-differences design with a test period from 2010 to 2014. The results in Table 6 suggests that banks presenting CI in the equity statement exhibit more earnings management through selective sales of AFS securities than banks presenting CI in the performance statements. To further examine whether the difference in earnings managements between the equity statement users and the performance statement users also exists in the periods prior to 2010, I estimate the following regression with a sample of banks with reporting position data and necessary variables from 1999–2009:

$$\begin{aligned} RGL_{iq} = {} & \beta_1 SmoothNI_{iq} + \beta_2 BigbathNI_{iq} \\ & + \beta_3 Perf \times SmoothNI_{iq} + \beta_4 Perf \times BigbathNI_{iq} \\ & + \beta_5 AUGL_{i,q-1} + \beta_6 RegCap_{iq} + \beta_7 AFS_{iq} + \beta_8 TED_q + \beta_9 VIX_q \\ & + \beta_{10} Perf + \beta_{11} IndSmooth_{iq} + \beta_{12} Perf \times IndSmooth_{iq} \\ & + FixedEffects \end{aligned} \quad (8)$$

$Perf$ equals 1 for the bank-quarters presenting CI in the performance statements, and 0 otherwise. All the other variables are defined the same way as those in Equation (2). I first estimate Equation (8) with a sample of data from 1999 to 2009, which contains 15,207 firm-quarters and 3,306 of them have $Perf$=1. The results are presented in Table 12 Column 1. I then examine whether the estimations are

affected by the financial crisis period 2007–2009. Thus, I split the test period 1999–2009 into two separate sub-periods: 1999–2006 and 2007–2009. For the test with period 1999–2006, I have 11,390 bank-quarters, in which 2,528 of them have $Perf$=1 (see Table 12 Column 2). For the test with period 2007–2009, I have 3,817 bank-quarters, in which 778 of them have $Perf$=1 (see Table 12 Column 3).

<Table 12>

Coefficients on $SmoothNI_{iq}$ ($BigbathNI_{iq}$) capture earnings smoothing (big bath) behaviors of banks presenting CI in the equity statements; the sum of the coefficients on $SmoothNI_{iq}$ and $Perf \times SmoothNI_{iq}$ ( $BigbathNI_{iq}$ and $+Perf \times BigbathNI_{iq}$) captures earnings smoothing (big bath) behaviors of banks presenting CI in the performance statements; and coefficients on $Perf \times SmoothNI_{iq}$ ($Perf \times BigbathNI_{iq}$) capture the difference in earnings smoothing (big bath) behaviors between banks presenting CI in the performance statements and banks presenting CI in the equity statements. The results in Table 12 demonstrate that, in general, except during the financial crisis period (Table 12 Column 3), the banks presenting CI in the equity statements exhibit significant earnings smoothing and big bath behaviors through selective sales of AFS securities (captured by significant coefficients on $SmoothNI_{iq}$ and $BigbathNI_{iq}$). However, I fail to find significant earnings smoothing or big bath behaviors with the banks presenting CI in the performance statements (captured by coefficients on $SmoothNI_{iq} + Perf \times SmoothNI_{iq}$ and $BigbathNI_{iq} + Perf \times BigbathNI_{iq}$ ). The coefficients on

$Perf \times SmoothNI_{iq}$ and $Perf \times BigbathNI_{iq}$ have expected signs, suggesting that banks presenting CI in the performance statements exhibit less earnings management than banks presenting CI in the equity statements. The coefficient on $Perf \times BigbathNI_{iq}$ is generally significant, but the coefficient on $Perf \times SmoothNI_{iq}$ is only significant for the period excluding 2007–2009. In summary, the results in Table 12 are consistent with the inference that banks presenting CI/OCI in the equity statements engage in more management of realized gains and losses on AFS securities compared to banks presenting CI/OCI in the performance statements.

### 7.4 Other Sensitivity Tests

In addition, I also examine whether the main results stand with firm fixed effects removed. The estimation results of Equation (2) are similar when firm fixed effects are replaced by an intercept (untabulated). Finally, I examine whether the main results vary with different cluster methods, and find that using robust standard errors or standard errors that are clustered by bank does not significantly change the inference.

## 8. CONCLUSION

U.S. standard setters recently issued amendment ASU 2011-05, which requires all firms to report comprehensive income (CI) and other comprehensive income (OCI) in the performance statements (either directly in the income statement, or in a separate statement of comprehensive income), and eliminates the

previously-allowed option of providing CI/OCI in a non-performance statement (the statement of shareholders' equity). Accordingly, this paper assesses whether the mandated change to include CI/OCI in the performance statements achieves the standard setter goal of increased transparency, by examining whether this mandate leads to reduced earnings management behavior.

Prior experimental and empirical papers suggest that managers believe presenting CI/OCI in the equity statements inhibits financial statement users' ability to detect earnings management via selective sales of AFS securities. Using hand-collected reporting position data of CI/OCI of public bank-holding companies, I examine the effect of ASU 2011-05, which requires performance reporting of CI/OCI in 2012, on earnings management through selectively selling AFS securities. Employing a difference-in-differences research design, I document three primary findings. First, before the enactment of ASU 2011-05, banks presenting CI/OCI in the equity statements exhibit greater earnings smoothing using selective sales of AFS securities than banks that always present CI/OCI in the performance statements. Second, banks mandated to switch the reporting position of CI/OCI to the performance statements after 2011 also exhibit a more pronounced decrease in earnings smoothing through selective sales of AFS securities from the pre- to the post-update period. Finally, despite this latter decline, the reporting of CI/OCI in the performance statements does not appear to fully eliminate banks' earnings smoothing behaviors using selective sales of AFS securities. These findings are consistent across a number of alternative specifications. Overall, the results suggest

that presenting CI/OCI in the performance statements helps reduce earnings management using selective sales of AFS securities.

This paper makes three contributions. First, it has implications for the reporting policy of CI and OCI. The evidence reveals that ASU 2011-05 helps increase the transparency of CI/OCI as the FASB expected, suggesting presentation can mitigate opportunistic managerial reporting behavior. Second, this is the first study to exploit a natural experiment to examine how the presentation of recognized items in different financial statements affects earning management behaviors. As such, it complements prior research, which focuses on experimental settings (e.g., Hirst and Hopkins 1998). Further, the insights here likely have implications for the broader financial reporting issue of performance reporting, and how this relates to various management reporting behaviors. Finally, this paper contributes to studies investigating earnings management behaviors in banks. Specifically, this paper extends these studies by demonstrating that selective sales of AFS securities are affected by the performance reporting of CI/OCI.[22]

[22] One limitation of this paper is that I am unable to examine the changes in earnings management to meet or beat a specific earnings target. This is because I cannot identify a large enough subsample of firms with earnings before realized gains and losses slightly lower than the potential earnings targets such as analysts' forecasts or prior quarters' earnings.

## APPENDICES

### Appendix 1. Examples of the Reporting of Comprehensive Income

**Method 1:** Report Comprehensive Income in the Income Statement with Net Income (1 page, allowed under ASU 2011-05)

Consolidated Statements of Income and Comprehensive Income (in Thousands)
**Synovus Financial Corp**, Year end December 31, 2012

| | |
|---|---|
| **Interest Income** | |
| Loan, including Fees | $ 924,639 |
| Available-for-sale securities | 68,440 |
| Trading securities | 963 |
| Mortgage loans | 6,201 |
| Federal Reserve Bank balances | 3,451 |
| Other | 446 |
| Total Interest Income | 1,004,140 |
| **Total interest expense** | 150,023 |
| **Net interest income** | 854,117 |
| **Provision for loan losses** | 320,369 |
| **Net interest income after provision for loan losses** | 533,748 |
| **Non-interest Income:** | |
| Service charges on deposit account | 78,203 |
| Asset management fees | 42,503 |
| Brokerage revenue | 26,913 |
| Mortgage banking income | 32,272 |
| Bankcard fees | 34,075 |
| Realized gains (losses) on AFS securities, net | 39,142 |
| Increase (decrease) in fair value of PE investments, net | 8,233 |
| Other non-interest income | 52,625 |
| Total non-interest income | 313,966 |
| **Non-interest expense** | 816,237 |
| **Total Income (loss) before tax** | (31,477) |
| **Tax expense (benefit)** | (798,732) |
| **Net Income** | **830,209** |
| **Net unrealized gains/losses on Cash flow hedges, net of tax** | (849) |
| **Net unrealized gains /losses on Available-for-sale securities, net of tax** | |
| Net unrealized gains (losses) during the period, before tax | 12,296 |
| Reclassification adjustment for (gains) losses realized in net income, before tax | (39,142) |
| Tax expense (benefit) on net realized gains and losses on AFS | 10,340 |

| | |
|---|---|
| securities | |
| Net realized gains (losses) | (16,506) |
| **Adjustment of the post-retirement unfunded health benefit, net of tax** | 363 |
| **Other comprehensive income (losses), net of tax** | (16,992) |
| **Comprehensive Income (loss), net of tax** | **813,217** |

**Method 2:** Report Comprehensive Income in the Statement of Comprehensive Income Following the Income Statement (2 pages, allowed under ASU 2011-05)

Consolidated Statements of Income (in Thousands)
**Synovus Financial Corp**, Year end December 31, 2012

| | |
|---|---|
| **Interest Income** | |
| Loan, including Fees | $ 924,639 |
| Available-for-sale securities | 68,440 |
| Trading securities | 963 |
| Mortgage loans | 6,201 |
| Federal Reserve Bank balances | 3,451 |
| Other | 446 |
| Total Interest Income | 1,004,140 |
| **Total interest expense** | 150,023 |
| **Net interest income** | 854,117 |
| **Provision for loan losses** | 320,369 |
| **Net interest income after provision for loan losses** | 533,748 |
| **Non-interest Income:** | |
| Service charges on deposit account | 78,203 |
| Asset management fees | 42,503 |
| Brokerage revenue | 26,913 |
| Mortgage banking income | 32,272 |
| Bankcard fees | 34,075 |
| Realized gains (losses) on available-for-sale securities, net | 39,142 |
| Increase (decrease) in fair value of PE investments, net | 8,233 |
| Other non-interest income | 52,625 |
| Total non-interest income | 313,966 |
| **Non-interest expense** | 816,237 |
| **Total Income (loss) before tax** | (31,477) |
| **Tax expense (benefit)** | (798,732) |
| **Net Income** | **830,209** |

**Method 2:** Report Comprehensive Income in the Statement of Comprehensive Income Following the Income Statement (2 pages, allowed under ASU 2011-05) (continued)

Consolidated Statements of Comprehensive Income (in Thousands)
**Synovus Financial Corp**, Year end December 31, 2012

| | |
|---|---|
| **Net Income** | 830,209 |
| **Net unrealized gains or losses on Cash flow hedges, net of tax** | (849) |
| **Net unrealized gains /losses on Available-for-sale securities, net of tax:** | |
| Net unrealized gains (losses), before tax | 12,296 |
| Reclassification adjustment for (gains) losses realized in net income, before tax | (39,142) |
| Tax expense (benefit) on net realized gains and losses on AFS securities | 10,340 |
| **Net realized gains (losses)** | (16,506) |
| **Adjustment of post-retirement unfunded health benefit** | 363 |
| **Other comprehensive income, net of tax** | (16,992) |
| **Comprehensive Income (loss), net of tax** | **813,217** |

**Method 3:** Reporting Comprehensive Income in the Equity Statements (not allowed under ASU 2011-05)

Consolidated Statements of Changes in Equity and Comprehensive Income (in Thousands)

**Synovus Financial Corp**, Year end December 31, 2012

| | Total | Preferred Stock | Common Stock | Additional Paid-in Cap. | Treasury Stock | Accumulated OCI |
|---|---|---|---|---|---|---|
| **Balance at Dec 31, 2011** | 2,827,452 | 947,017 | 790,989 | 2,241,171 | (114,176) | 21,093 |
| **Net income** | 830,209 | | | | | |
| Other comprehensive income (loss), net of tax | | | | | | |
| Net unrealized gains (losses) on cash flow hedges | (849) | | | | | (849) |
| Changes in net unrealized gains and losses on available-for-sale securities, net of reclassification adjustment | (16,506) | | | | | (16,506) |
| Adjustment of post-retirement unfunded health benefit | 363 | | | | | 363 |
| Other comprehensive income (loss) | (16,992) | | | | | (16,992) |
| **Comprehensive income (loss)** | **813,217** | | | | | |
| Cash dividends declared on common stock | (31,462) | | | | | |
| Cash dividends paid on preferred stock | (48,394) | | | (48,394) | | |
| Accretion of discount on preferred stock | | 10,310 | | (10,310) | | |
| Restricted share unit activity | | | 1,284 | (1,211) | | |
| Share-based compensation expense | 9,333 | | | 9,333 | | |
| Share-based compensation tax deficiency | (715) | | | (715) | | |
| Balance at Dec 31, 2012 | 3,569,431 | 957,327 | 792,273 | 2,189,874 | (114,176) | 4101 |

## Appendix 2. Variable Definitions

**Variables Used in Matching Samples**

| | |
|---|---|
| $\boldsymbol{AFS_{iq}}$ | = total AFS securities (fair value) scaled by total assets. |
| $\boldsymbol{LD_{iq}}$ | = long-term debt scaled by total assets. |
| $\boldsymbol{MTB_{iq}}$ | = market to book value ratio. |
| $\boldsymbol{SIZE_{iq}}$ | = natural logarithm of total assets. |

**Variables Used in The Primary Analyses in Table 6 and 7**

| | |
|---|---|
| $\boldsymbol{AUGL_{iq-1}}$ | = accumulated unrealized gains or losses on AFS securities at the beginning of the quarter scaled by lagged total assets. |
| $\boldsymbol{BigbathNI_{iq}}$ | = $NIBR_{iq}$ if $NIBR_{iq}$<0 and $NIBR_{iq}$+ $AUGL_{q-1}$<0, and 0 otherwise. |
| $\boldsymbol{IndSmooth}$ | =1 if $NIBR_{iq}$>0 or $NIBR_{iq}$+ $AUGL_{q-1}$>0, and 0 otherwise. |
| $\boldsymbol{NIBR_{iq}}$ | = net income before realized gains and losses on AFS securities, taxes and extraordinary items scaled by the beginning of quarter total assets. |
| $\boldsymbol{POST}$ | = 1 for the fiscal year from 2012, and 0 otherwise. |
| $\boldsymbol{RegCap_{iq}}$ | = bank's end of quarter regulatory capital ratio, which is calculated as allowable Tier 1 plus Tier 2 regulatory capital before $RGL_{iq}$ and after taxes scaled by risk-weighted assets. |
| $\boldsymbol{RGL_{iq}}$ | = realized gains or losses on AFS securities scaled by the beginning of quarter total assets. |
| $\boldsymbol{SmoothNI_{iq}}$ | = $NIBR_{iq}$ if $NIBR_{iq}$>0 or $NIBR_{iq}$+ $AUGL_{q-1}$>0, and 0 otherwise. |
| $\boldsymbol{TED_{q}}$ | = quarterly Ted spread. Ted spread is the difference between the interest rates on interbank loans and on short-term U.S. government debt ("T-bills"). |
| $\boldsymbol{Treat}$ | = 1 if the bank reports OCI in the equity statements before adopting ASU 2011-05 (in all the quarters from 2010 to 2011), and 0 otherwise. |
| $\boldsymbol{VIX_{q}}$ | = quarterly implied volatility of options on the S&P500 Index. |

**Variables Used in The Cross-sectional Analyses in Table 8**

| | |
|---|---|
| $\boldsymbol{Analyst_{iq}}$ | =1 if the bank's quarterly average analysts following is above the 75 percentile of the total treatment banks observations, and 0 otherwise. I generate $Analyst_{iq}$ using the primary treatment bank sample, which contains 3,444 observation from 175 treatment banks. |
| $\boldsymbol{Big4_{iq}}$ | =1 if the bank is audited by Big 4 audit firms, and 0 otherwise. |
| $\boldsymbol{Instown_{iq}}$ | =1 if the bank's quarterly institutional ownership percentage is larger than the 75 percentile of the total treatment banks observations, and 0 otherwise. I generate $Instown_{iq}$ using the |

| | |
|---|---|
| | primary treatment bank sample, which contains 3,444 observation from 175 treatment banks. The institutional ownership percentage is calculated as quarterly average institutional ownership scaled by total shares outstanding. |

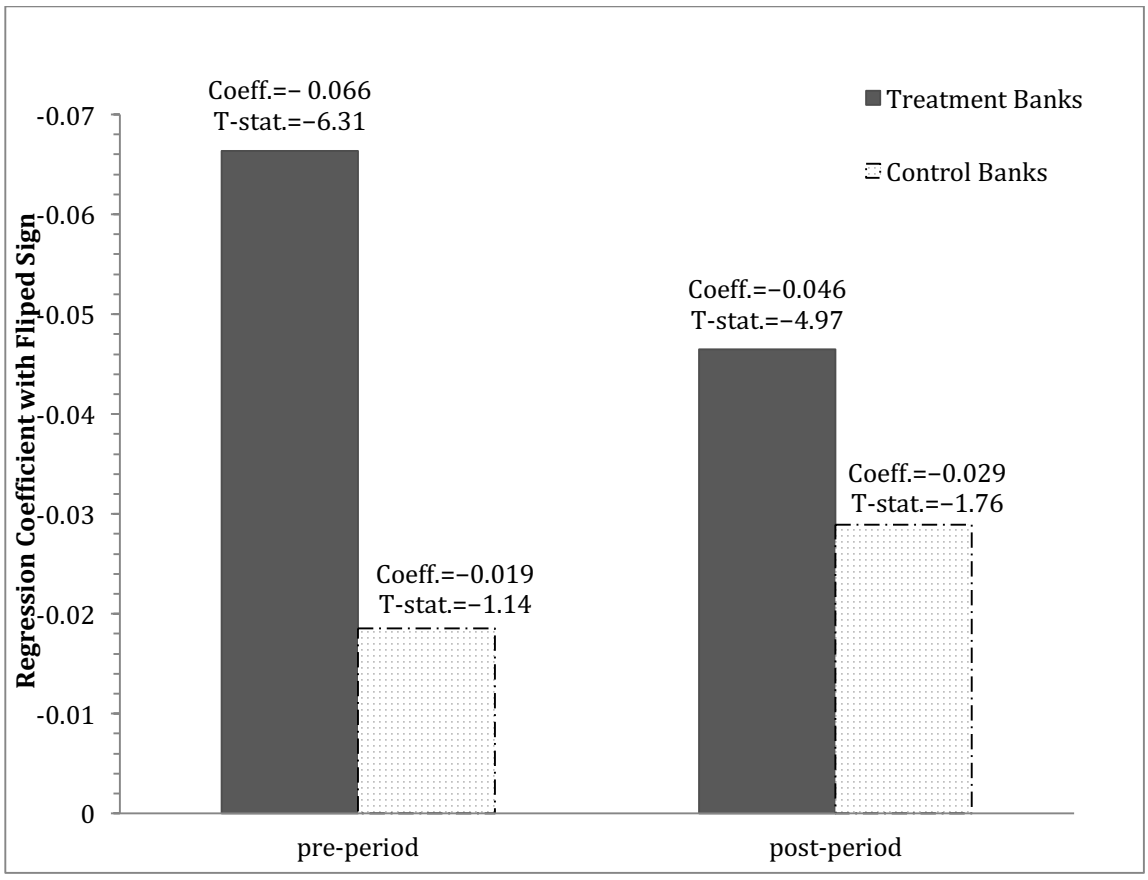
**Variables Used in The Supplementary Analyses in Table 9**

| | |
|---|---|
| $\boldsymbol{Abs\_DRGL_{iq}}$ | = the absolute value of discretionary realized gains and losses on AFS securities. |
| $\boldsymbol{DRGL_{iq}}$ | = discretionary realized gains and losses on AFS securities, which is calculated as the residual of the estimation of "normal" realized gains and losses on AFS securities using Equation (3). |
| $\boldsymbol{LogAnal_{iq}}$ | = natural logarithm of one plus the number of quarterly average analysts following. For the bank-quarters without IBES data, I assume a zero analysts following. |
| $\boldsymbol{LogInst_{iq}}$ | = natural logarithm of one plus the number of quarterly average institutional ownership presented as a percentage of total shares outstanding. For the bank-quarters without IBES data, I assume a zero institutional ownership. |

**Variables Used in The Sensitivity Tests in Table 10-12**

| | |
|---|---|
| $\boldsymbol{abBigbathNI_{iq}}$ | = $NIBR_{iq} - mNIBR_{q-1}$ if $NIBR_{iq}$<0 and $NIBR_{iq}$+ $AUGL_{q-1}$<0, and 0 otherwise, $mNIBR_{q-1}$ is the prior quarter median $NIBR_{iq}$ for all the bank holding companies that registered with SEC. |
| $\boldsymbol{abSmoothNI_{iq}}$ | = $NIBR_{iq} - mNIBR_{q-1}$ if $NIBR_{iq}$>0 or $NIBR_{iq}$+ $AUGL_{q-1}$>0, and 0 otherwise, $mNIBR_{q-1}$ is the prior quarter median $NIBR_{iq}$ for all the bank holding companies that registered with SEC. |
| $\boldsymbol{abRegCap_{iq}}$ | = $RegCap_{iq} - mRegCap_{q-1}$, $mRegCap_{q-1}$ is the prior quarter median $RegCap_{iq}$ for all the bank holding companies that registered with SEC. |
| $\boldsymbol{Cash_{iq}}$ | = cash and cash equivalents before sales of investment securities scaled by total assets. |
| $\boldsymbol{IndPosi_{iq}}$ | = 1 if $NIBR_{iq}$>0 and 0 otherwise. |
| $\boldsymbol{NegNI_{iq}}$ | = $NIBR_{iq}$ if $NIBR_{iq}$<0 and 0 otherwise. |
| $\boldsymbol{Update}$ | = 1in the quarters after treatment banks switched the reporting position of CI from equity statements to performance statements, and 0 otherwise. |
| $\boldsymbol{Perf}$ | = 1 for bank-quarters with CI presented in the performance statements, and 0 otherwise. |
| $\boldsymbol{PosiNI_{iq}}$ | = $NIBR_{iq}$ if $NIBR_{iq}$>0 and 0 otherwise. |

**Figure 1: Earnings Smoothing for Both Treatment Banks and Control Banks in The Pre-period and The Post-period**




This figure displays the Earnings Smoothing behaviors for both Treatment and Control Banks in the pre- and post-update periods.

**Table 1. Reporting Position Distribution of Comprehensive Income for Bank Holding Companies**

| Year | (1) Equity Statements Users | (2) Performance Statements Users | (3) No. of Switches to Equity Statements | (4) No. of Switches to Performance Statements | (5) Total |
|---|---|---|---|---|---|
| 1998 | 256 | 92 | 0 | 0 | 348 |
| 1999 | 281 | 85 | 9 | 0 | 366 |
| 2000 | 288 | 86 | 2 | 2 | 374 |
| 2001 | 296 | 77 | 1 | 0 | 373 |
| 2002 | 305 | 82 | 2 | 4 | 387 |
| 2003 | 308 | 85 | 1 | 3 | 393 |
| 2004 | 303 | 84 | 1 | 2 | 387 |
| 2005 | 321 | 86 | 3 | 6 | 407 |
| 2006 | 314 | 90 | 2 | 3 | 404 |
| 2007 | 306 | 76 | 5 | 4 | 382 |
| 2008 | 305 | 68 | 1 | 0 | 373 |
| 2009 | 297 | 63 | 3 | 5 | 360 |
| 2010 | 285 | 54 | 3 | 1 | 339 |
| 2011 | 231 | 99 | 1 | 39 | 330 |
| 2012 | 12 | 398 | 0 | 206 | 410 |
| 2013 | 0 | 402 | 0 | 12 | 402 |
| 2014 | 0 | 379 | 0 | 0 | 379 |
| Total | 4,108 | 2,306 | 34 | 287 | 6,414 |

This table demonstrates the distribution of reporting positions of CI for all bank holding companies registered with SEC from 1998 to 2014. In order to be included in this sample, the banks need to be covered by both the bank regulatory database and the SEC EDGAR system.

For the reporting position data of CI in Table 1, I exclude 29 banks that either (i) did not consistently use the same reporting method of CI in their 10-K and 10-Q filings or (ii) have a comprehensive income statement that does not immediately follow the income statements (i.e. Method 4). I exclude these banks since it is difficult to classify them as either *Equity Statement Users* (i.e. Method 3 users) or *Performance Statement Users* (i.e. Method 1 or 2 Users).

For each fiscal year, Table 1 demonstrates the number of firms presenting CI in the equity statements (Column 1), the number of firms presenting CI in the performance statements (Column 2), the number of firms that switched the reporting position of

CI from the performance to the equity statements (Column 3), the number of firms that switched the reporting position of CI from the equity to the performance statements (Column 4), and the total number of sample banks (Column 5). This sample does not require firms to have the regression data from the Bank Regulatory Database, and therefore is larger than the primary sample used for the regression tests (see Table 2).

**Table 2. Sample Selection and Distribution**

**Panel A. Sample Selection**

| | Less Firms | Remaining Firms (Firm No.) | Less Obs. | Remaining Obs. (Firm-quarters) |
|---|---|---|---|---|
| Banks with data in the Bank Regulatory Database and 10-K/10-Q filing data with SEC from 2010 to 2014 | | 500 | | 7,704 |
| Less banks: | | | | |
| without 4 years 10-K/10-Q filings or Bank Regulatory data during 2010–2013 | (215)* | 285 | (2,056) | 5,648 |
| reported OCI in a separate statement following the SCSE in the fiscal years before 2012 | (13) | 272 | (256) | 5,392 |
| not using consistent reporting methods of OCI in their 10-K/10-Q filings before 2012 | (7) | 265 | (36) | 5,356 |
| Switched reporting position in the fiscal year 2011 | (31) | 234 | (712) | 4,644 |
| didn't adopt ASU 2011-05 until 2013 | (5) | 229 | (92) | 4,552 |
| without necessary data for the regression estimations | (22) | **207** | (488) | **4,064** |

**Panel B. The Distribution of Treatment and Control Banks**

| | Treatment Banks | Control Banks |
|---|---|---|
| Banks | 175 | 32 |
| Bank-quarter observations for Equation (2) | 3,444 | 620 |

This table presents the sample selection process. I start with all bank holding companies registered with the Federal Reserve Bank of Chicago in Bank Regulatory Database and registered with SEC from 2010 to 2014. I exclude banks (i) without at least 4 years of 10-K/10-Q filing or Bank Regulatory data from 2010 to 2013, (ii) that are difficult to categorize as treatment or control banks, (iii) that switched their reporting position of CI/OCI in 2011 or 2013, and (iv) that do not have necessary data from the Bank Regulatory and COMPUSTAT Databases during 2010–2014.

* Of the 215 banks, 118 do not have 4-years of 10-K/10-Q filings in the SEC Edgar database, and 97 do not have 4 years of Bank Regulatory data.

Treatment banks are those that always report CI/OCI in the equity statements (Method 3 in Appendix 1) before adopting ASU 2011-05 in their 10-Q/10-K filings during 2010–2011. Control banks are those that report CI/OCI in the income statement or a separate statement following the income statement (Methods 1 or 2 in Appendix 1) in their fiscal years 2010–2011.

For the primary analyses (Tables 6 and 7), I have 4,064 observations (207 banks) with the necessary data available, comprising 175 treatment banks (3,444 observations) and 32 control banks (620 observations).

**Table 3. Matching Process**

| | Control Banks $N$ = 256 | Treatment Banks before Matching $N$ = 1,400 | Difference in Mean (1) versus (2) | Treatment Banks after Matching $N$ = 256 | Difference in Mean (1) versus (4) |
|---|---|---|---|---|---|
| | (1) Mean | (2) Mean | (3) $p$-value | (4) Mean | (5) $p$-value |
| **Matching Variables** | | | | | |
| $LD_{iq}$ | 0.078 | 0.072 | 0.19 | 0.075 | 0.66 |
| $MTB_{iq}$ | 0.860 | 0.907 | 0.17 | 0.884 | 0.58 |
| $SIZE_{iq}$ | 15.367 | 15.059 | 0.01 | 15.249 | 0.45 |
| $AFS_{iq}$ | 0.194 | 0.178 | 0.02 | 0.189 | 0.57 |
| **Other Variables** | | | | | |
| $RGL_{iq}$ | 0.000 | 0.000 | 0.99 | 0.000 | 0.29 |
| $NIBR_{iq}$ | 0.002 | 0.001 | 0.24 | 0.001 | 0.15 |
| $AUGL_{iq-1}$ | 0.001 | 0.001 | 0.38 | 0.001 | 0.98 |
| $RegCap_{iq}$ | 0.157 | 0.154 | 0.24 | 0.152 | 0.02 |
| $Big4_{iq}$ | 0.375 | 0.443 | 0.04 | 0.500 | 0.00 |
| $LogAnal_{iq}$ | 0.739 | 0.691 | 0.47 | 0.632 | 0.17 |
| $LogInst_{iq}$ | 0.275 | 0.305 | 0.04 | 0.292 | 0.37 |

This table demonstrates the matching process of treatment banks to control banks using the average quarterly long-term debt ratio, market-to-book ratio, size, and available-for-sale security level—all assessed in the pre-update period (2010 to 2011). All variables are defined in Appendix 2. Column (1) presents the variable means for the control banks in the pre-update period. Column (2) presents the variable means for the treatment banks before matching. Column (3) presents two-sided $p$-values of $t$-tests of the difference between the variable means in Columns (1) and (2). Column (4) presents the variable means for the treatment banks after matching. Column (5) presents two-sided $p$-value of $t$-tests of the difference between the variable means in Columns (1) and (4).

**Table 4. Descriptive Statistics**

| | Panel A Treatment Banks before Matching $N$ = 3,444 | | | Panel B Treatment Banks after Matching $N$ = 628 | | | Panel C Control Banks $N$ = 620 | | |
|---|---|---|---|---|---|---|---|---|---|
| | Mean | Median | Std. Dev. | Mean | Median | Std. Dev. | Mean | Median | Std. Dev. |
| **Matching Variables** | | | | | | | | | |
| $LD_{iq}$ | 0.061** | 0.048 | 0.055 | 0.064 | 0.051 | 0.049 | 0.067 | 0.040 | 0.070 |
| $MTB_{iq}$ | 1.052 | 1.017 | 0.515 | 1.026 | 0.995 | 0.474 | 1.016 | 0.963 | 0.524 |
| $SIZE_{iq}$ | 15.080*** | 14.627 | 1.710 | 15.245 | 14.748 | 1.786 | 15.355 | 14.990 | 1.592 |
| $AFS_{iq}$ | 0.181*** | 0.166 | 0.099 | 0.188 | 0.164 | 0.099 | 0.195 | 0.171 | 0.118 |
| **Other Variables** | | | | | | | | | |
| $RGL_{iq}$ | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| $NIBR_{iq}$ | 0.002 | 0.003 | 0.004 | 0.002* | 0.003 | 0.005 | 0.002 | 0.003 | 0.004 |
| $AUGL_{iq-1}$ | 0.001 | 0.001 | 0.003 | 0.001 | 0.001 | 0.002 | 0.001 | 0.001 | 0.003 |
| $RegCap_{iq}$ | 0.155*** | 0.149 | 0.035 | 0.153*** | 0.148 | 0.029 | 0.160 | 0.158 | 0.030 |
| $Big4_{iq}$ | 0.436*** | 0.000 | 0.496 | 0.478*** | 0.000 | 0.491 | 0.355 | 0.000 | 0.479 |
| $LogAnal_{iq}$ | 0.000 | −0.000 | 0.000 | 0.632* | 0.000 | 0.859 | 0.000 | −0.000 | 0.000 |
| $LogInst_{iq}$ | 0.688*** | 0.000 | 0.963 | 0.302* | 0.284 | 0.188 | 0.730 | 0.000 | 0.935 |

This table presents the descriptive statistics for the variables used to generate the matched treatment sample and the variables used in the regression analyses of Equations (2) and (4). Two quarterly time-series variables are not included in the above table: *VIX* (volatility index) and *TED* (Ted spread). The average quarterly *VIX* proxy in my test period is 17.58 and the average quarterly *TED* proxy in my test period is 0.26. All variables are defined in Appendix 2. Panel A provides the descriptive statistics for treatment banks before matching (175 banks). Panel B presents the descriptive statistics for treatment banks after matching (32 banks). Panel C presents the descriptive statistics for control banks (32 banks). *, ** and *** denote variable means that are significantly different across treatment and control banks.

## Table 5. Pearson Correlation Table

**Panel A: Pearson Correlations of the Whole Sample (*N* =4,064 )**

| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | $Treat$ | 1.00 | | | | | | | | | | | | | |
| 2 | $Post$ | 0.00 | 1.00 | | | | | | | | | | | | |
| 3 | $RGL_{iq}$ | 0.01 | **−0.07** | 1.00 | | | | | | | | | | | |
| 4 | $NIBR_{iq}$ | −0.02 | **0.19** | **−0.15** | 1.00 | | | | | | | | | | |
| 5 | $AUGL_{iq-1}$ | −0.01 | **−0.04** | **0.17** | **0.04** | 1.00 | | | | | | | | | |
| 6 | $RegCap_{iq}$ | **−0.05** | 0.02 | −0.02 | **0.23** | **0.10** | 1.00 | | | | | | | | |
| 7 | $AFS_{iq}$ | **−0.05** | 0.02 | **0.11** | 0.02 | **0.31** | **0.25** | 1.00 | | | | | | | |
| 8 | $TED_q$ | 0.00 | **0.06** | **0.08** | −0.01 | **0.21** | **0.05** | **0.05** | 1.00 | | | | | | |
| 9 | $VIX_q$ | 0.00 | **−0.74** | **0.11** | **−0.15** | **0.15** | 0.00 | 0.01 | **0.46** | 1.00 | | | | | |
| 10 | $LD_{iq}$ | **−0.03** | **−0.15** | **0.06** | 0.01 | **−0.07** | **0.05** | **−0.09** | 0.00 | **0.11** | 1.00 | | | | |
| 11 | $MTB_{iq}$ | 0.02 | **0.24** | **−0.09** | **0.36** | **0.10** | **0.08** | **0.07** | **−0.14** | **−0.27** | **−0.08** | 1.00 | | | |
| 12 | $SIZE_{iq}$ | **−0.06** | 0.01 | −0.01 | **0.14** | 0.02 | **−0.06** | **−0.04** | 0.01 | 0.00 | **0.23** | **0.19** | 1.00 | | |
| 13 | $Big4_{iq}$ | **0.06** | −0.02 | −0.01 | **0.12** | **0.06** | −0.01 | 0.00 | 0.00 | 0.01 | **0.09** | **0.23** | **0.62** | 1.00 | |
| 14 | $LogAnal_{iq}$ | −0.02 | 0.00 | −0.01 | **0.12** | **0.03** | 0.01 | −0.01 | 0.00 | 0.00 | 0.01 | **0.14** | **0.25** | **0.28** | 1.00 |
| 15 | $LogInst_{iq}$ | **0.05** | 0.02 | **−0.03** | **0.19** | **0.06** | **0.06** | **−0.05** | 0.00 | −0.01 | −0.02 | **0.32** | **0.58** | **0.45** | **0.40** |

**Table 5. Pearson Correlation Table** - *Continued*

**Panel B: Pearson Correlations of the Matched Sample (*N* =1,248)**

| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | $Treat$ | 1.00 | | | | | | | | | | | | | |
| 2 | $Post$ | 0.01 | 1.00 | | | | | | | | | | | | |
| 3 | $RGL_{iq}$ | 0.04 | **−0.12** | 1.00 | | | | | | | | | | | |
| 4 | $NIBR_{iq}$ | **−0.06** | **0.16** | **−0.18** | 1.00 | | | | | | | | | | |
| 5 | $AUGL_{iq-1}$ | 0.02 | −0.05 | **0.14** | **0.08** | 1.00 | | | | | | | | | |
| 6 | $RegCap_{iq}$ | **−0.12** | 0.05 | 0.04 | **0.26** | **0.15** | 1.00 | | | | | | | | |
| 7 | $AFS_{iq}$ | −0.03 | 0.00 | **0.13** | **0.12** | **0.31** | **0.21** | 1.00 | | | | | | | |
| 8 | $TED_q$ | 0.00 | **0.06** | **0.07** | −0.04 | **0.24** | 0.04 | 0.05 | 1.00 | | | | | | |
| 9 | $VIX_q$ | −0.01 | **−0.74** | **0.13** | **−0.14** | **0.18** | −0.02 | 0.02 | **0.46** | 1.00 | | | | | |
| 10 | $LD_{iq}$ | −0.02 | **−0.15** | 0.05 | **0.06** | **−0.09** | **0.06** | **−0.20** | 0.00 | **0.12** | 1.00 | | | | |
| 11 | $MTB_{iq}$ | 0.01 | **0.25** | **−0.14** | **0.34** | **0.16** | 0.05 | **0.21** | **−0.17** | **−0.29** | **−0.11** | 1.00 | | | |
| 12 | $SIZE_{iq}$ | −0.03 | 0.00 | −0.02 | **0.16** | **−0.06** | −0.04 | **−0.08** | 0.01 | 0.01 | **0.38** | **0.19** | 1.00 | | |
| 13 | $Big4_{iq}$ | **0.12** | −0.04 | −0.02 | **0.12** | 0.04 | **−0.15** | **0.06** | 0.00 | 0.03 | **0.25** | **0.27** | **0.65** | 1.00 | |
| 14 | $LogAnal_{iq}$ | −0.05 | 0.00 | −0.05 | **0.13** | **0.08** | 0.03 | **0.07** | 0.01 | 0.01 | **−0.07** | **0.11** | **0.07** | **0.16** | 1.00 |
| 15 | $LogInst_{iq}$ | 0.05 | 0.03 | −0.03 | **0.16** | **0.09** | **−0.08** | −0.02 | −0.02 | −0.03 | 0.00 | **0.38** | **0.48** | **0.45** | **0.45** |

This table presents Pearson correlations for the whole bank sample (175 treatment plus 32 control banks) in Panel A, and for the matched bank sample (32 treatment plus 32 control banks) in Panel B. Significant correlation coefficients are bolded at the 0.05 level. Matching variables and all the control variables used in the regression analyses of Equations (2) and (4) are included in Panel A and B.

**Table 6. Reporting Positions of CI/OCI and Selective Sales of AFS securities**

| | | Exp. | (1) Whole Sample | | (2) Matched Sample | |
|---|---|---|---|---|---|---|
| | | Sign | Coefficient | *T*-stat | Coefficient | *T*-stat |
| $SmoothNI_{iq}$ | $\beta_1$ | **?** | −0.01851 | −1.14 | −0.01871 | −1.19 |
| $BigbathNI_{iq}$ | $\beta_2$ | **?** | −0.00996 | −0.96 | −0.01008 | −0.83 |
| $\boldsymbol{Treat \times SmoothNI_{iq}}$ **(H1)** | $\boldsymbol{\beta_3}$ | **–** | **−0.04784*****| **−2.59** | **−0.09019***** | **−3.23** |
| $\boldsymbol{Treat \times BigbathNI_{iq}}$ **(H1)** | $\boldsymbol{\beta_4}$ | **+** | **0.01612** | **1.22** | **0.01679** | **0.88** |
| $POST \times SmoothNI_{iq}$ | $\beta_5$ | **?** | −0.01040 | −0.67 | −0.01055 | −0.70 |
| $POST \times BigbathNI_{iq}$ | $\beta_6$ | **?** | 0.02616 | 1.46 | 0.02666 | 1.41 |
| $\boldsymbol{Treat \times POST \times SmoothNI_{iq}}$ **(H2)** | $\boldsymbol{\beta_7}$ | **+** | **0.03027**** | **1.95** | **0.04562**** | **1.74** |
| $\boldsymbol{Treat \times POST \times BigbathNI_{iq}}$ **(H2)** | $\boldsymbol{\beta_8}$ | **–** | **−0.04067**** | **−1.78** | **−0.05055*** | **−1.50** |
| $AUGL_{iq-1}$ | $\beta_9$ | + | 0.02559*** | 5.62 | 0.02622*** | 3.29 |
| $RegCap_{iq}$ | $\beta_{10}$ | – | −0.00071** | −2.26 | −0.00032 | −0.50 |
| $AFS_{iq}$ | $\beta_{11}$ | **?** | 0.00014 | 0.59 | −0.00001 | −0.03 |
| $TED_q$ | $\beta_{12}$ | **?** | 0.00009 | 0.42 | 0.00004 | 0.19 |
| $VIX_q$ | $\beta_{13}$ | **?** | 0.00000 | 0.73 | 0.00000 | 0.60 |
| $POST$ | $\beta_{14}$ | **?** | 0.00004 | 0.19 | 0.00003 | 0.16 |
| $Treat \times POST$ | $\beta_{15}$ | **?** | −0.00021 | −1.06 | −0.00009 | −0.28 |
| $IndSmooth$ | $\beta_{16}$ | **?** | −0.00002 | −0.17 | −0.00002 | −0.21 |
| $Treat \times IndSmooth$ | $\beta_{17}$ | **?** | 0.00003 | 0.30 | 0.00007 | 0.38 |
| $Post \times IndSmooth$ | $\beta_{18}$ | **?** | −0.00001 | −0.08 | −0.00002 | −0.12 |
| $Treat \times Post \times IndSmooth$ | $\beta_{19}$ | **?** | 0.00016 | 0.93 | −0.00001 | −0.04 |
| *Firm Fixed Effects* | | | Yes | | Yes | |
| *N* | | | 4,064 | | 1,248 | |
| *Adj. R-squared* | | | 0.268 | | 0.325 | |
| $\beta_1 + \beta_3$ | | – | −0.06635*** | −6.31 | −0.10890*** | −4.29 |
| $\beta_1 + \beta_3 + \beta_5 + \beta_7$ | | ? | −0.04648*** | −4.97 | −0.07383*** | −3.42 |

| | | | | | |
|---|---|---|---|---|---|
| $\beta_5+\beta_7$ | + | 0.01987** | 2.08 | 0.03507* | 1.63 |
| $\beta_2+\beta_4$ | + | 0.00616** | 1.97 | 0.00672 | 0.48 |
| $\beta_2+\beta_4+\beta_6+\beta_8$ | ? | −0.00835 | −0.63 | −0.01718 | −0.75 |
| $\beta_6+\beta_8$ | – | −0.01452 | −1.14 | −0.02390 | −0.93 |

This table presents the estimation results of Equation (2) with the whole sample (Column 1) and the matched subsample (Column 2). For both tests, the dependent variable is $RGL_{iq}$. For the whole sample, $N$ = 3,444 bank quarters for treatment banks and 620 for control banks. For the matched sample, $N$ = 628 bank quarters for treatment banks and 620 for control banks. $T$-statistics are based on standard errors clustered by bank and quarter. ***, **, * indicate variables significant at the 0.01, 0.05 and 0.1 level, using one-sided (two-sided) t-tests for variables having predicted signs (no predicted signs).

**Table 7. Placebo Tests**

**Panel A: Placebo Test with the Whole Sample**

| Post-period | (1) $POST \times SmoothNI_{iq}$ | | (2) $POST \times BigbathNI_{iq}$ | | (3) $Treat \times POST \times SmoothNI_{iq}$ | | (4) $Treat \times POST \times BigbathNI_{iq}$ | |
|---|---|---|---|---|---|---|---|---|
| starts from: | $\beta_5$ | P-value | $\beta_6$ | P-value | $\beta_7$ (+) | P-value | $\beta_8$ (−) | P-value |
| 2010q3 | 0.001 | 0.937 | 0.053 | 0.379 | 0.012 | 0.240 | −0.068 | 0.150 |
| 2010q4 | 0.010 | 0.665 | 0.118 | 0.235 | 0.006 | 0.407 | −0.134 | 0.091 |
| 2011q1 | 0.002 | 0.923 | 0.025 | 0.587 | 0.015 | 0.266 | −0.032 | 0.269 |
| 2011q2 | −0.001 | 0.950 | 0.032 | 0.546 | 0.010 | 0.326 | −0.043 | 0.224 |
| 2011q3 | −0.011 | 0.580 | 0.020 | 0.499 | 0.015 | 0.250 | −0.036 | 0.139 |
| 2011q4 | −0.007 | 0.695 | 0.019 | 0.413 | 0.019 | 0.166 | −0.032 | 0.119 |
| 2012q1 | −0.010 | 0.510 | 0.026 | 0.160 | **0.030** | **0.033** | **−0.041** | **0.045** |
| 2012q2 | −0.014 | 0.265 | 0.025 | 0.174 | **0.038** | **0.001** | −0.027 | 0.106 |
| 2012q3 | −0.020 | 0.186 | 0.027 | 0.168 | **0.045** | **0.001** | −0.025 | 0.137 |
| 2012q4 | −0.003 | 0.798 | −0.003 | 0.849 | **0.029** | **0.009** | 0.008 | 0.648 |
| 2013q1 | 0.011 | 0.481 | 0.004 | 0.815 | 0.017 | 0.165 | −0.008 | 0.355 |
| 2013q2 | 0.008 | 0.588 | 0.004 | 0.790 | 0.021 | 0.101 | −0.009 | 0.332 |
| 2013q3 | 0.015 | 0.119 | −0.003 | 0.769 | 0.013 | 0.167 | −0.001 | 0.478 |
| 2013q4 | 0.012 | 0.217 | 0.058 | 0.000 | 0.014 | 0.173 | −0.072 | 0.000 |
| 2014q1 | 0.015 | 0.219 | −0.017 | 0.190 | 0.004 | 0.391 | 0.000 | N.A. |
| 2014q2 | 0.001 | 0.968 | −0.024 | 0.120 | 0.018 | 0.265 | 0.000 | N.A. |
| 2014q3 | −0.018 | 0.341 | −0.042 | 0.054 | 0.041 | 0.010 | 0.000 | N.A. |

**Table 7. Placebo Tests** - *Continued*

**Panel B: Placebo Test with the Matched Subsample**

| Post-period | (1) $POST \times SmoothNI_{iq}$ | | (2) $POST \times BigbathNI_{iq}$ | | (3) $Treat \times POST \times SmoothNI_{iq}$ | | (4) $Treat \times POST \times BigbathNI_{iq}$ | |
|---|---|---|---|---|---|---|---|---|
| starts from: | $\beta_5$ | P-value | $\beta_6$ | P-value | $\beta_7$ (+) | P-value | $\beta_8$ (−) | P-value |
| 2010q3 | −0.001 | 0.942 | 0.050 | 0.370 | −0.054 | 0.871 | −0.088 | 0.094 |
| 2010q4 | 0.008 | 0.724 | 0.104 | 0.239 | 0.002 | 0.482 | −0.136 | 0.069 |
| 2011q1 | 0.001 | 0.954 | 0.024 | 0.612 | 0.049 | 0.144 | −0.055 | 0.168 |
| 2011q2 | −0.002 | 0.925 | 0.031 | 0.567 | 0.034 | 0.232 | −0.062 | 0.163 |
| 2011q3 | −0.011 | 0.579 | 0.020 | 0.516 | 0.034 | 0.192 | −0.058 | 0.090 |
| 2011q4 | −0.007 | 0.691 | 0.020 | 0.435 | 0.043 | 0.073 | −0.057 | 0.070 |
| 2012q1 | −0.011 | 0.494 | 0.027 | 0.176 | **0.046** | **0.049** | −0.051 | 0.076 |
| 2012q2 | −0.014 | 0.225 | 0.026 | 0.186 | **0.063** | **0.002** | −0.023 | 0.211 |
| 2012q3 | −0.020 | 0.161 | 0.027 | 0.183 | **0.058** | **0.006** | −0.019 | 0.259 |
| 2012q4 | −0.003 | 0.839 | −0.003 | 0.883 | 0.030 | 0.106 | 0.014 | 0.703 |
| 2013q1 | 0.012 | 0.475 | 0.003 | 0.848 | 0.014 | 0.293 | 0.145 | 0.786 |
| 2013q2 | 0.008 | 0.597 | 0.003 | 0.836 | 0.008 | 0.372 | 0.143 | 0.784 |
| 2013q3 | 0.015 | 0.124 | −0.004 | 0.631 | 0.001 | 0.482 | 0.149 | 0.801 |
| 2013q4 | 0.014 | 0.185 | 0.060 | 0.000 | 0.000 | 0.494 | −0.226 | 0.000 |
| 2014q1 | 0.016 | 0.194 | −0.175 | 0.000 | −0.019 | 0.877 | 0.000 | N.A. |
| 2014q2 | 0.003 | 0.903 | −0.174 | 0.000 | −0.001 | 0.512 | 0.000 | N.A. |
| 2014q3 | −0.016 | 0.391 | 0.379 | 0.030 | 0.019 | 0.099 | 0.000 | N.A. |

This table presents the placebo tests results of Equation (2) with both the whole sample and the matched subsample. P-values are based on t-tests (two-sided without a signed prediction and one-sided with a signed prediction), with standard errors clustered by bank and quarter. The significant coefficients at 0.05 are bolded in Panel A and Panel B. Control banks do not have one observation with non-zero $BigbathNI_{iq}$ in 2014.

**Table 8. Cross-sectional Tests with the Treatment Banks**

**Panel A. Cross-sectional Test: Big4 and non-Big4 Audited**

| | | Exp. | Y-variable=$RGL_{iq}$ | |
|---|---|---|---|---|
| | | Sign | Coefficient | $T$-stat. |
| $SmoothNI_{iq}$ | $\beta_1$ | − | −0.06663*** | −4.80 |
| $BigbathNI_{iq}$ | $\beta_2$ | + | 0.00362 | 1.04 |
| $\boldsymbol{Big4 \times SmoothNI_{iq}}$ | $\boldsymbol{\beta_3}$ | ? | **0.01813** | **0.83** |
| $\boldsymbol{Big4 \times BigbathNI_{iq}}$ | $\boldsymbol{\beta_4}$ | ? | **0.00086** | **0.28** |
| $POST \times SmoothNI_{iq}$ | $\beta_5$ | + | 0.00810 | 0.62 |
| $POST \times BigbathNI_{iq}$ | $\beta_6$ | − | 0.00058 | 0.09 |
| $\boldsymbol{Big4 \times POST \times SmoothNI_{iq}}$ | $\boldsymbol{\beta_7}$ | ? | **0.02702*** | **2.03** |
| $\boldsymbol{Big4 \times POST \times BigbathNI_{iq}}$ | $\boldsymbol{\beta_8}$ | ? | **−0.06608***** | **−3.43** |
| *Other Controls and Interaction Terms* | | | Yes | |
| *Firm fixed effects* | | | Yes | |
| *N* | | | 3,444 | |
| *Adj. R-squared* | | | 0.268 | |

**Panel B. Cross-sectional Test: The Effects of Institutional Ownership**

| | | Exp. | Y-variable=$RGL_{iq}$ | |
|---|---|---|---|---|
| | | Sign | Coefficient | $T$-stat. |
| $SmoothNI_{iq}$ | $\beta_1$ | − | −0.07730*** | −5.62 |
| $BigbathNI_{iq}$ | $\beta_2$ | + | 0.00320 | 0.86 |
| $\boldsymbol{Instown \times SmoothNI_{iq}}$ | $\boldsymbol{\beta_3}$ | ? | **0.04819**** | **2.63** |
| $\boldsymbol{Instown \times BigbathNI_{iq}}$ | $\boldsymbol{\beta_4}$ | ? | **0.00385** | **0.55** |
| $POST \times SmoothNI_{iq}$ | $\beta_5$ | + | 0.03393*** | 2.67 |
| $POST \times BigbathNI_{iq}$ | $\beta_6$ | − | −0.00051 | −0.08 |
| $\boldsymbol{Instown \times POST \times SmoothNI_{iq}}$ | $\boldsymbol{\beta_7}$ | ? | **−0.02370** | **−1.43** |
| $\boldsymbol{Instown \times POST \times BigbathNI_{iq}}$ | $\boldsymbol{\beta_8}$ | ? | **−0.07338***** | **−5.61** |
| *Other Controls and Interaction Terms* | | | Yes | |
| *Firm fixed effects* | | | Yes | |
| *N* | | | 3,444 | |
| *Adj. R-squared* | | | 0.268 | |

**Table 8. Cross-sectional Tests with the Treatment Banks** - *Continued*

**Panel C. Cross-sectional Test: The Effect of Analysts Following**

| | | Exp. | Y-variable=$RGL_{iq}$ | |
|---|---|---|---|---|
| | | Sign | Coefficient | *T*-stat. |
| $SmoothNI_{iq}$ | $\beta_1$ | – | −0.07473*** | −6.09 |
| $BigbathNI_{iq}$ | $\beta_2$ | + | 0.00489 | 1.42 |
| $\boldsymbol{Analyst \times SmoothNI_{iq}}$ | $\boldsymbol{\beta_3}$ | ? | **0.07006*** ** | **4.94** |
| $\boldsymbol{Analyst \times BigbathNI_{iq}}$ | $\boldsymbol{\beta_4}$ | ? | **0.00101** | **0.10** |
| $POST \times SmoothNI_{iq}$ | $\beta_5$ | + | 0.02468** | 2.26 |
| $POST \times BigbathNI_{iq}$ | $\beta_6$ | – | −0.01488 | −1.17 |
| $\boldsymbol{Analyst \times POST \times SmoothNI_{iq}}$ | $\boldsymbol{\beta_7}$ | ? | **−0.01554** | **−0.90** |
| $\boldsymbol{Analyst \times POST \times BigbathNI_{iq}}$ | $\boldsymbol{\beta_8}$ | ? | **0.05983*** ** | **3.19** |
| *Other Controls and Interaction Terms* | | | Yes | |
| *Firm fixed effects* | | | Yes | |
| *N* | | | 3,444 | |
| *Adj. R-squared* | | | 0.266 | |

This table presents results of cross-sectional tests for a subsample of treatment banks (i.e. 175 treatment banks with 3,444 observations). I estimate Equation (2) with the indicator variable *Treat* replaced by (1) an indicator variable of using a Big 4 auditor (i.e. *Big4* in Panel A); (2) an indicator variable of having a high percentage of institutional ownership (i.e. *Instown* in Panel B); and (3) an indicator variable of having a large number of analysts following (i.e. *Analyst* in Panel C).

In all the above regression analyses, the dependent variable is $RGL_{iq}$. In Panel A, *Big4*=1 if a bank is audited by a Big 4 audit firm, and 0 otherwise. Within the treatment bank sample, 84 of 175 treatment banks have *Big4*=1. In Panel B, *Instown*=1 if the bank's institutional ownership percentage is larger than the 75 percentile of the total treatment banks observations. Within the treatment bank sample, 861 of 3,444 observations have *Instown*=1. In Panel C, *Analyst*=1 if the bank's quarterly average analysts following is above the 75 percentile of the total treatment bank observations. Within the treatment bank sample, 773 of 3,444 observations have *Analyst*=1. All other variables are defined in Appendix 2.

*T*-statistics are based on standard errors clustered by bank and quarter. ***, **, * indicate variables significant at the 0.01, 0.05 and 0.1 level, using one-sided (two-sided) tests for variables having predicted signs (no predicted signs).

**Table 9. Reporting Position of CI/OCI and Discretionary Realized Gains and Losses**

**Panel A. Estimations without Restrictions on $NIBR_{iq}$**

| | | | Whole Sample | | | Matched Sample | | |
|---|---|---|---|---|---|---|---|---|
| | | Exp. | $DRGL_{iq}$>0 | $DRGL_{iq}$<0 | $Abs\_DRGL_{iq}$ | $DRGL_{iq}$>0 | $DRGL_{iq}$<0 | $Abs\_DRGL_{iq}$ |
| | | Sign | (1) | (2) | (3) | (4) | (5) | (6) |
| *Intercept* | $\alpha_1$ | +/− | 0.026 | −0.015** | 0.020*** | 0.022 | −0.015* | 0.018 |
| | | | (1.63) | (−2.31) | (2.27) | (1.14) | (−1.67) | (1.51) |
| ***Treat (H1)*** | **$\alpha_2$** | **+/−** | **0.007** | **−0.004**** | **0.005**** | **0.013*** | **−0.001** | **0.004** |
| | | | **(1.15)** | **(−2.14)** | **(1.76)** | **(1.71)** | **(−0.57)** | **(1.22)** |
| ***Treat × POST (H2)*** | **$\alpha_3$** | **−/+** | **−0.006** | **0.004**** | **−0.004**** | **−0.013*** | **0.000** | **−0.004*** |
| | | | **(−0.89)** | **(2.26)** | **(−1.78)** | **(−1.71)** | **(0.31)** | **(−1.43)** |
| *POST* | $\alpha_4$ | ? | −0.007 | 0.000 | −0.003 | −0.005 | 0.001 | −0.003 |
| | | | (−0.91) | (0.08) | (−0.95) | (−0.84) | (0.67) | (−1.08) |
| $LD_{iq}$ | $\alpha_5$ | ? | 0.042 | −0.032* | 0.039** | 0.027 | −0.002 | 0.011 |
| | | | (1.66) | (−2.02) | (2.54) | (0.84) | (−0.17) | (0.66) |
| $MTB_{iq}$ | $\alpha_6$ | ? | −0.008** | 0.003* | −0.005** | −0.013** | 0.003 | −0.007** |
| | | | (−2.66) | (1.83) | (−2.75) | (−2.35) | (1.52) | (−2.42) |
| $SIZE_{iq}$ | $\alpha_7$ | ? | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | | | (−0.36) | (0.62) | (−0.64) | (−0.19) | (0.31) | (−0.21) |
| $Big4_{iq}$ | $\alpha_8$ | ? | −0.001 | 0.001 | −0.001 | −0.006 | 0.000 | −0.002 |
| | | | (−0.23) | (0.59) | (−0.42) | (−1.09) | (0.18) | (−0.72) |
| $AFS_{iq}$ | $\alpha_9$ | ? | 0.051*** | −0.032*** | 0.040*** | 0.074** | −0.035*** | 0.050*** |
| | | | (3.82) | (−4.99) | (5.28) | (2.64) | (−4.70) | (4.50) |
| $LogAnal_{iq}$ | $\alpha_{10}$ | ? | −0.001 | 0.000 | 0.000 | −0.003 | 0.002 | −0.003* |
| | | | (−0.79) | (−0.06) | (−0.48) | (−1.49) | (1.69) | (−1.84) |
| $LogInst_{iq}$ | $\alpha_{11}$ | ? | 0.001 | 0.008** | −0.004 | 0.024** | 0.000 | 0.010 |
| | | | (0.22) | (2.21) | (−0.96) | (2.11) | (0.07) | (1.38) |
| *N* | | | 1,674 | 2,390 | 4,064 | 506 | 742 | 1,248 |
| *Adj R−squared* | | | 0.098 | 0.061 | 0.068 | 0.127 | 0.093 | 0.078 |

**Panel B. Estimations without $NIBR_{iq}$= $BigbathNI_{iq}$**

| | | | Whole Sample | | | Matched Sample | | |
|---|---|---|---|---|---|---|---|---|
| | | Exp. Sign | $DRGL_{iq}$>0 (1) | $DRGL_{iq}$<0 (2) | $Abs\_DRGL_{iq}$ (3) | $DRGL_{iq}$>0 (4) | $DRGL_{iq}$<0 (5) | $Abs\_DRGL_{iq}$ (6) |
| *Intercept* | $\alpha_1$ | +/− | 0.018 | −0.012** | 0.015** | 0.006 | −0.015** | 0.011 |
| | | | (1.17) | (−2.17) | (1.85) | (0.32) | (−1.74) | (1.00) |
| ***Treat (H1)*** | **$\alpha_2$** | **+/−** | **0.007*** | **−0.005**** | **0.005***** | **0.012*** | **−0.002** | **0.005*** |
| | | | **(1.56)** | **(−2.51)** | **(2.71)** | **(1.69)** | **(−0.85)** | **(1.55)** |
| ***Treat × POST (H2)*** | **$\alpha_3$** | **−/+** | **−0.007*** | **0.005***** | **−0.005***** | **−0.013**** | **0.001** | **−0.005**** |
| | | | **(−1.34)** | **(2.93)** | **(−3.09)** | **(−2.11)** | **(0.67)** | **(−2.14)** |
| *POST* | $\alpha_4$ | ? | −0.004 | −0.001 | −0.001 | −0.004 | 0.000 | −0.002 |
| | | | (−0.71) | (−0.47) | (−0.55) | (−0.75) | (0.15) | (−0.69) |
| $LD_{iq}$ | $\alpha_5$ | ? | 0.036* | −0.028** | 0.033** | 0.016 | −0.005 | 0.009 |
| | | | (1.91) | (−2.15) | (2.56) | (0.54) | (−0.43) | (0.55) |
| $MTB_{iq}$ | $\alpha_6$ | ? | −0.007** | 0.002 | −0.004** | −0.010** | 0.003 | −0.006** |
| | | | (−2.39) | (1.47) | (−2.28) | (−2.13) | (1.34) | (−2.10) |
| $SIZE_{iq}$ | $\alpha_7$ | ? | 0.000 | 0.000 | 0.000 | 0.001 | 0.000 | 0.000 |
| | | | (−0.15) | (0.43) | (−0.41) | (0.53) | (0.60) | (0.14) |
| $Big4_{iq}$ | $\alpha_8$ | ? | −0.001 | 0.001 | −0.001 | −0.006 | 0.000 | −0.003 |
| | | | (−0.33) | (0.66) | (−0.52) | (−1.28) | (0.14) | (−1.07) |
| $AFS_{iq}$ | $\alpha_9$ | ? | 0.055*** | −0.031*** | 0.041*** | 0.071** | −0.035*** | 0.048*** |
| | | | (3.92) | (−5.10) | (5.40) | (2.62) | (−5.03) | (4.86) |
| $LogAnal_{iq}$ | $\alpha_{10}$ | ? | −0.001 | 0.000 | 0.000 | −0.002 | 0.002* | −0.002 |
| | | | (−0.68) | (−0.01) | (−0.47) | (−0.94) | (1.88) | (−1.58) |
| $LogInst_{iq}$ | $\alpha_{11}$ | ? | 0.003 | 0.007* | −0.003 | 0.014 | −0.003 | 0.007 |
| | | | (0.55) | (2.03) | (−0.67) | (1.33) | (−0.60) | (1.12) |
| *N* | | | 1,562 | 2,179 | 3,741 | 466 | 682 | 1,148 |
| *Adj R-squared* | | | 0.094 | 0.057 | 0.066 | 0.126 | 0.099 | 0.083 |

This table presents the estimation results of Equation (4) in Section 6.3. Panel A presents the regression results without any restrictions on earnings before realized gains and losses ($NIBR_{iq}$). Panel B presents the regression results excluding observations that have extremely low earnings (i.e. $NIBR_{iq}$= $SmoothNI_{iq}$). All variables are defined in Appendix 2. Coefficient estimates are provided with *T*-statistics in parentheses. Coefficient estimates are multiplied by 100 for expositional convenience. Standard errors are clustered by bank and quarter. ***, **, * indicate variables significant at the 0.01,0.05 and 0.1 level, using one-sided (two-sided) t-tests for variables having predicted signs (no predicted signs).

When positive (negative) $DRGL_{iq}$ is the dependent variable, I expect the coefficient on $Treat_i$ to be positive (negative) and significant (H1) and the coefficient on $Treat_i \times POST_t$ to be negative (positive) and significant (H2). When $Abs\_DRGL_{iq}$ is the dependent variable, I expect the coefficient on $Treat_i$ to be positive and significant (H1) and the coefficient on $Treat_i \times POST_t$ to be negative and significant (H2).

**Table 10. Sensitivity Tests Using Alternative Model Specifications**

**Panel A. Alternative Earnings and Regulatory Capital Targets (Dependent Variable = $RGL_{iq}$)**

| | | Exp. | (1) Whole Sample | | (2) Matched Sample | |
|---|---|---|---|---|---|---|
| | | Sign | Coefficient | *T*-stat | Coefficient | *T*-stat |
| $abSmoothNI_{iq}$ | $\beta_1$ | **?** | −0.01280 | −0.99 | −0.01364 | −1.09 |
| $abBigbathNI_{iq}$ | $\beta_2$ | **?** | −0.00491 | −0.45 | −0.00629 | −0.51 |
| **$Treat \times abSmoothNI_{iq}$ (H1)** | **$\beta_3$** | **−** | **−0.05025*****| **−3.26** | **−0.07487**** | **−2.44** |
| **$Treat \times abBigbathNI_{iq}$ (H1)** | **$\beta_4$** | **+** | **0.01076** | **0.78** | **0.01174** | **0.61** |
| $POST \times abSmoothNI_{iq}$ | $\beta_5$ | **?** | −0.01525 | −1.04 | −0.01397 | −0.92 |
| $POST \times abBigbathNI_{iq}$ | $\beta_6$ | **?** | 0.02100 | 1.17 | 0.02261 | 1.20 |
| **$Treat \times POST \times abSmoothNI_{iq}$ (H2)** | **$\beta_7$** | **+** | **0.03555***** | **2.47** | **0.03839*** | **1.44** |
| **$Treat \times POST \times abBigbathNI_{iq}$ (H2)** | **$\beta_8$** | **−** | **−0.03469*** | **−1.55** | **−0.04491*** | **−1.36** |
| $AUGL_{iq-1}$ | $\beta_9$ | + | 0.02614*** | 5.36 | 0.02647*** | 3.24 |
| $abRegCap_{iq}$ | $\beta_{10}$ | − | −0.00072** | −2.29 | −0.00028 | −0.44 |
| $AFS_{iq}$ | $\beta_{11}$ | **?** | 0.00014 | 0.58 | 0.00001 | 0.02 |
| $TED_q$ | $\beta_{12}$ | **?** | 0.00009 | 0.37 | 0.00004 | 0.17 |
| $VIX_q$ | $\beta_{13}$ | **?** | 0.00000 | 0.58 | 0.00000 | 0.30 |
| $POST$ | $\beta_{14}$ | **?** | 0.00005 | 0.26 | 0.00005 | 0.30 |
| $Treat \times POST$ | $\beta_{15}$ | **?** | −0.00026 | −1.20 | −0.00017 | −0.44 |
| $IndSmooth$ | $\beta_{16}$ | **?** | −0.00006 | −0.58 | −0.00005 | −0.60 |
| $Treat \times IndSmooth$ | $\beta_{17}$ | **?** | −0.00004 | −0.33 | −0.00008 | −0.40 |
| $Post \times IndSmooth$ | $\beta_{18}$ | **?** | −0.00008 | −0.50 | −0.00010 | −0.62 |
| $Treat \times Post \times IndSmooth$ | $\beta_{19}$ | **?** | 0.00025 | 1.17 | 0.00010 | 0.26 |
| *Firm Fixed Effects* | | | Yes | | Yes | |
| *N* | | | 4,064 | | 1,248 | |
| *Adj. R-squared* | | | 0.266 | | 0.316 | |

**Table 10. Sensitivity Tests Using Alternative Model Specifications** - *Continued*

**Panel B. Controlling for Cash and Cash Equivalent (Dependent Variable = $RGL_{iq}$)**

| | | Exp. | (1) Whole Sample | | (2) Matched Sample | |
|---|---|---|---|---|---|---|
| | | Sign | Coefficient | *T*-stat | Coefficient | *T*-stat |
| $SmoothNI_{iq}$ | $\beta_1$ | ? | −0.01925 | −1.18 | −0.02030 | −1.26 |
| $BigbathNI_{iq}$ | $\beta_2$ | ? | −0.01011 | −0.97 | −0.01013 | −0.83 |
| **$Treat \times SmoothNI_{iq}$ (H1)** | **$\beta_3$** | **−** | **−0.04743*** ** | **−2.58** | **−0.08690*** ** | **−3.16** |
| **$Treat \times BigbathNI_{iq}$ (H1)** | **$\beta_4$** | **+** | **0.01632** | **1.22** | **0.01673** | **0.89** |
| $POST \times SmoothNI_{iq}$ | $\beta_5$ | ? | −0.00998 | −0.64 | −0.00969 | −0.63 |
| $POST \times BigbathNI_{iq}$ | $\beta_6$ | ? | 0.02648 | 1.48 | 0.02705 | 1.41 |
| **$Treat \times POST \times SmoothNI_{iq}$ (H2)** | **$\beta_7$** | **+** | **0.03049** ** | **1.97** | **0.04535** ** | **1.75** |
| **$Treat \times POST \times BigbathNI_{iq}$ (H2)** | **$\beta_8$** | **−** | **−0.04126** ** | **−1.80** | **−0.05125* ** | **−1.51** |
| $AUGL_{iq-1}$ | $\beta_9$ | + | 0.02553*** | 5.60 | 0.02629*** | 3.31 |
| $RegCap_{iq}$ | $\beta_{10}$ | − | −0.00054* | −1.66 | −0.00005 | −0.07 |
| $AFS_{iq}$ | $\beta_{11}$ | ? | 0.00012 | 0.49 | −0.00002 | −0.06 |
| $TED_q$ | $\beta_{12}$ | ? | 0.00009 | 0.40 | 0.00003 | 0.15 |
| $VIX_q$ | $\beta_{13}$ | ? | 0.00000 | 0.73 | 0.00000 | 0.61 |
| $POST$ | $\beta_{14}$ | ? | 0.00004 | 0.19 | 0.00002 | 0.15 |
| $Treat \times POST$ | $\beta_{15}$ | ? | −0.00021 | −1.07 | −0.00010 | −0.30 |
| $IndSmooth$ | $\beta_{16}$ | ? | −0.00002 | −0.19 | −0.00003 | −0.27 |
| $Treat \times IndSmooth$ | $\beta_{17}$ | ? | 0.00003 | 0.31 | 0.00007 | 0.38 |
| $Post \times IndSmooth$ | $\beta_{18}$ | ? | −0.00001 | −0.08 | −0.00001 | −0.10 |
| $Treat \times Post \times IndSmooth$ | $\beta_{19}$ | ? | 0.00016 | 0.93 | −0.00001 | −0.03 |
| $Cash_{iq}$ | $\beta_{20}$ | ? | −0.00123 | −0.87 | −0.00257 | −1.58 |
| *Firm Fixed Effects* | | | Yes | | Yes | |
| *N* | | | 4,064 | | 1,248 | |
| *Adj. R-squared* | | | 0.268 | | 0.325 | |

**Table 10. Sensitivity Tests with Alternative Models** - *Continued*

**Panel C. Alternative Dependent Variable (Dependent Variable = $DRGL_{iq}$)**

| | | Exp. | (1) Whole Sample | | (2) Matched Sample | |
|---|---|---|---|---|---|---|
| | | Sign | Coefficient | *T*-stat | Coefficient | *T*-stat |
| $SmoothNI_{iq}$ | $\beta_1$ | **?** | −0.02040 | −1.30 | −0.01968 | −1.32 |
| $BigbathNI_{iq}$ | $\beta_2$ | **?** | −0.00902 | −0.74 | −0.01243 | −0.88 |
| **$Treat \times SmoothNI_{iq}$ (H1)** | **$\beta_3$** | **−** | **−0.04684*****| **−2.65** | **−0.09125***** | **−3.30** |
| **$Treat \times BigbathNI_{iq}$ (H1)** | **$\beta_4$** | **+** | **0.01525** | **1.05** | **0.01892** | **0.90** |
| $POST \times SmoothNI_{iq}$ | $\beta_5$ | **?** | −0.01003 | −0.67 | −0.00913 | −0.61 |
| $POST \times BigbathNI_{iq}$ | $\beta_6$ | **?** | 0.02314 | 1.25 | 0.02641 | 1.34 |
| **$Treat \times POST \times SmoothNI_{iq}$ (H2)** | **$\beta_7$** | **+** | **0.02856**** | **1.90** | **0.04407*** | **1.68** |
| **$Treat \times POST \times BigbathNI_{iq}$ (H2)** | **$\beta_8$** | **−** | **−0.03686*** | **−1.58** | **−0.05026*** | **−1.43** |
| $AUGL_{iq-1}$ | $\beta_9$ | + | −0.00175 | −0.45 | −0.00080 | −0.10 |
| $RegCap_{iq}$ | $\beta_{10}$ | − | 0.00015 | 0.43 | 0.00072 | 1.27 |
| $AFS_{iq}$ | $\beta_{11}$ | **?** | 0.00001 | 0.04 | −0.00005 | −0.15 |
| $TED_q$ | $\beta_{12}$ | **?** | −0.00004 | −0.74 | −0.00014 | −1.31 |
| $VIX_q$ | $\beta_{13}$ | **?** | 0.00000 | 1.01 | 0.00000 | 0.41 |
| $POST$ | $\beta_{14}$ | **?** | 0.00006 | 0.36 | 0.00008 | 0.54 |
| $Treat \times POST$ | $\beta_{15}$ | **?** | −0.00019 | −0.93 | −0.00013 | −0.38 |
| $IndSmooth$ | $\beta_{16}$ | **?** | −0.00002 | −0.20 | −0.00000 | −0.02 |
| $Treat \times IndSmooth$ | $\beta_{17}$ | **?** | 0.00004 | 0.35 | 0.00004 | 0.21 |
| $Post \times IndSmooth$ | $\beta_{18}$ | **?** | 0.00000 | 0.01 | −0.00002 | −0.16 |
| $Treat \times Post \times IndSmooth$ | $\beta_{19}$ | **?** | 0.00014 | 0.78 | 0.00003 | 0.08 |
| *Firm Fixed Effects* | | | Yes | | Yes | |
| *N* | | | 4,064 | | 1,248 | |
| *R-squared* | | | 0.044 | | 0.074 | |

**Table 10. Sensitivity Tests with Alternative Models** - *Continued*

**Panel D. Alternative Definition of Big Bath Earnings Management (Dependent Variable = $RGL_{iq}$)**

| | | Exp. | (1) Whole Sample | | (2) Matched Sample | |
|---|---|---|---|---|---|---|
| | | Sign | Coefficient | *T*-stat | Coefficient | *T*-stat |
| $PosiNI_{iq}$ | $\beta_1$ | **?** | −0.00963 | −0.73 | −0.00975 | −0.83 |
| $NegNI_{iq}$ | $\beta_2$ | **?** | −0.00363 | −0.27 | −0.00380 | −0.26 |
| **$Treat \times PosiNI_{iq}$ (H1)** | **$\beta_3$** | **−** | **−0.04667*** ** | **−2.67** | **−0.08110*** ** | **−2.63** |
| **$Treat \times NegNI_{iq}$ (H1)** | **$\beta_4$** | **+** | **0.01330** | **0.88** | **0.01708** | **0.87** |
| $POST \times PosiNI_{iq}$ | $\beta_5$ | **?** | −0.00494 | −0.38 | −0.00493 | −0.42 |
| $POST \times NegNI_{iq}$ | $\beta_6$ | **?** | 0.03737** | 2.10 | 0.03836** | 2.07 |
| **$Treat \times POST \times PosiNI_{iq}$ (H2)** | **$\beta_7$** | **+** | **0.02455**** | **1.79** | **0.02502** | **1.01** |
| **$Treat \times POST \times NegNI_{iq}$ (H2)** | **$\beta_8$** | **−** | **−0.04410**** | **−2.23** | **−0.06929*** ** | **−2.14** |
| $AUGL_{iq-1}$ | $\beta_9$ | + | 0.02585*** | 5.66 | 0.02461*** | 3.10 |
| $RegCap_{iq}$ | $\beta_{10}$ | − | −0.00055* | −1.67 | −0.00011 | −0.17 |
| $AFS_{iq}$ | $\beta_{11}$ | **?** | 0.00020 | 0.87 | 0.00003 | 0.11 |
| $TED_q$ | $\beta_{12}$ | **?** | 0.00008 | 0.38 | 0.00000 | 0.02 |
| $VIX_q$ | $\beta_{13}$ | **?** | 0.00000 | 0.71 | 0.00000 | 0.67 |
| $POST$ | $\beta_{14}$ | **?** | 0.00018 | 1.26 | 0.00017 | 1.49 |
| $Treat \times POST$ | $\beta_{15}$ | **?** | −0.00026 | −1.59 | −0.00039 | −1.34 |
| $IndPosi$ | $\beta_{16}$ | **?** | −0.00012** | −2.23 | −0.00012** | −2.53 |
| $Treat \times IndPosi$ | $\beta_{17}$ | **?** | 0.00001 | 0.25 | −0.00004 | −0.28 |
| $Post \times IndPosi$ | $\beta_{18}$ | **?** | −0.00017* | −1.85 | −0.00018** | −2.17 |
| $Treat \times Post \times IndPosi$ | $\beta_{19}$ | **?** | 0.00024 | 1.73 | 0.00035 | 1.23 |
| *Firm Fixed Effects* | | | Yes | | Yes | |
| *N* | | | 4,064 | | 1,248 | |
| *Adj. R-squared* | | | 0.267 | | 0.333 | |

This table presents the sensitivity analyses with several transforms of Equation (2). In each Panel, the analyses are conducted on both the whole sample and the matched subsample.

In Panel A, $abSmoothNI_{iq}$ equals $NIBR_{iq} - mNIBR_{q-1}$ if $NIBR_{iq}$ >0 or $NIBR_{iq} + AUGL_{q-1}$ >0 and 0 otherwise; $abBigbathNI_{iq}$ equals $NIBR_{iq} - mNIBR_{q-1}$ if $NIBR_{iq}$ <0 and $NIBR_{iq} + AUGL_{q-1}$ <0, and 0 otherwise; $abRegCap_{i,q}$equals $RegCap_{iq} - mRegCap_{q-1}$. $mNIBR_{q-1}$ ($mRegCap_{q-1}$) represents the prior quarter median $NIBR$ ($RegCap$) of all bank holding companies that registered with SEC. All other variables used in the regression analyses in Panel A are defined the same way as those in Table 6.

Panel B presents the sensitivity analyses with an additional control variable $Cash_{iq}$. $Cash_{iq}$ is defined as cash and cash equivalents before sales of investment securities scaled by total assets. All the other variables used in the regression analyses in Panel B are defined the same way as those in Table 6.

Panel C presents the regression analyses of Equation (2) with the dependent variable replaced by $DRGL_{iq}$. $DRGL_{iq}$ represents discretionary realized gains and losses on AFS securities, the calculation of which is explained in Section 6.3. All the other variables used in the regression analyses in Panel C are defined the same way as those in Table 6.

Panel D presents the regression analyses of Equation (2) with *NIBR* split into *PosiNI* and *NegNI*. *PosiNI*(*NegNI*) equals *NIBR* if *NIBR* is greater(less) than zero. *IndPosi* equals 1 for firm-quarters with positive *NIBR*. All the other variables used in the regression analyses in Panel D are defined the same way as the those in Table 6.

For the whole sample, *N* = 3,444 bank quarters for treatment banks and 620 for control banks. For the matched sample, *N* = 628 bank quarters for treatment banks and 620 for control banks. All continuous variables are winsorized at the 1st and 99th percentiles. *T*-statistics are based on standard errors clustered by bank and quarter. ***, **, * indicate variables significant at the 0.01, 0.05 and 0.1 level, using one-sided (two-sided) t-tests for variables having predicted signs (no predicted signs).

**Table 11. Sensitivity Tests with Alternative Subsamples**

**Panel A. Alternative Sample without One-single-statement Users**

| | | Exp. | Y-variable=$RGL_{iq}$ | |
|---|---|---|---|---|
| | | Sign | Coefficient | $T$-stat. |
| $SmoothNI_{iq}$ | $\beta_1$ | ? | −0.02539 | −0.98 |
| $BigbathNI_{iq}$ | $\beta_2$ | ? | −0.01103 | −0.51 |
| $\boldsymbol{Treat \times SmoothNI_{iq}}$ | $\boldsymbol{\beta_3}$ | **−** | **−0.04024*** | **−1.49** |
| $\boldsymbol{Treat \times BigbathNI_{iq}}$ | $\boldsymbol{\beta_4}$ | **+** | **0.01662** | **0.69** |
| $POST \times SmoothNI_{iq}$ | $\beta_5$ | ? | −0.01532 | −0.75 |
| $POST \times BigbathNI_{iq}$ | $\beta_6$ | ? | 0.02769 | 1.05 |
| $\boldsymbol{Treat \times POST \times SmoothNI_{iq}}$ | $\boldsymbol{\beta_7}$ | **+** | **0.03444**** | **1.78** |
| $\boldsymbol{Treat \times POST \times BigbathNI_{iq}}$ | $\boldsymbol{\beta_8}$ | **−** | **−0.04170*** | **−1.41** |
| *Other Controls and Interaction Terms* | | | Yes | |
| *Firm fixed effects* | | | Yes | |
| *N* | | | 3,728 | |
| *Adj. R-squared* | | | 0.267 | |

**Panel B. Alternative Matched Subsample without One-single-statement Users**

| | | Exp. | Y-variable=$RGL_{iq}$ | |
|---|---|---|---|---|
| | | Sign | Coefficient | $T$-stat. |
| $SmoothNI_{iq}$ | $\beta_1$ | ? | −0.02685 | −1.02 |
| $BigbathNI_{iq}$ | $\beta_2$ | ? | −0.01016 | −0.52 |
| $\boldsymbol{Treat \times SmoothNI_{iq}}$ | $\boldsymbol{\beta_3}$ | **−** | **−0.05056*** | **−1.63** |
| $\boldsymbol{Treat \times BigbathNI_{iq}}$ | $\boldsymbol{\beta_4}$ | **+** | **0.03760**** | **1.79** |
| $POST \times SmoothNI_{iq}$ | $\beta_5$ | ? | −0.01507 | −0.73 |
| $POST \times BigbathNI_{iq}$ | $\beta_6$ | ? | 0.02680 | 1.17 |
| $\boldsymbol{Treat \times POST \times SmoothNI_{iq}}$ | $\boldsymbol{\beta_7}$ | **+** | **0.04049**** | **1.73** |
| $\boldsymbol{Treat \times POST \times BigbathNI_{iq}}$ | $\boldsymbol{\beta_8}$ | **−** | **−0.04309*** | **−1.54** |
| *Other Controls and Interaction Terms* | | | Yes | |
| *Firm fixed effects* | | | Yes | |
| *N* | | | 936 | |
| *Adj. R-squared* | | | 0.289 | |

**Table 11. Sensitivity Tests with Alternative Subsamples** - *Continued*

**Panel C. All Treatment Banks Subsample**

| | | Exp. | Y-variable=$RGL_{iq}$ | |
|---|---|---|---|---|
| | | Sign | Coefficient | $T$-stat. |
| $SmoothNI_{iq}$ | $\beta_1$ | − | −0.04720*** | −3.73 |
| $BigbathNI_{iq}$ | $\beta_2$ | + | 0.00567 | 0.84 |
| $\boldsymbol{Update \times SmoothNI_{iq}}$ | $\boldsymbol{\beta_3}$ | + | **0.02587**** | **2.68** |
| $\boldsymbol{Update \times BigbathNI_{iq}}$ | $\boldsymbol{\beta_4}$ | − | **0.00344** | **0.24** |
| $AUGL_{iq-1}$ | $\beta_5$ | + | 0.02583*** | 5.62 |
| $RegCap_{iq}$ | $\beta_6$ | − | −0.00021 | −0.40 |
| $AFS_{iq}$ | $\beta_7$ | ? | 0.00011 | 0.39 |
| $TED_q$ | $\beta_8$ | ? | −0.00006 | −0.36 |
| $VIX_q$ | $\beta_9$ | ? | 0.00001** | 2.14 |
| $Update$ | $\beta_{10}$ | ? | −0.00003 | −0.37 |
| $IndSmooth$ | $\beta_{11}$ | ? | 0.00005 | 0.75 |
| $Update \times IndSmooth$ | $\beta_{12}$ | ? | 0.00001 | 0.10 |
| *Firm fixed effects* | | | Yes | |
| *N* | | | 4,068 | |
| *Adj. R-squared* | | | 0.233 | |

**Panel D. Largest Treatment Banks Subsample**

| | | Exp. | Y-variable=$RGL_{iq}$ | |
|---|---|---|---|---|
| | | Sign | Coefficient | $T$-stat. |
| $SmoothNI_{iq}$ | $\beta_1$ | − | −0.04785*** | −2.90 |
| $BigbathNI_{iq}$ | $\beta_2$ | + | 0.01341 | 0.41 |
| $\boldsymbol{POST \times SmoothNI_{iq}}$ | $\boldsymbol{\beta_3}$ | + | **0.03541**** | **2.14** |
| $\boldsymbol{POST \times BigbathNI_{iq}}$ | $\boldsymbol{\beta_4}$ | − | **−0.08395**** | **−2.16** |
| $AUGL_{iq-1}$ | $\beta_5$ | + | 0.01158* | 1.36 |
| $RegCap_{iq}$ | $\beta_6$ | − | 0.00010 | 0.13 |
| $AFS_{iq}$ | $\beta_7$ | ? | 0.00052 | 0.64 |
| $TED_q$ | $\beta_8$ | ? | −0.00006 | −0.23 |
| $VIX_q$ | $\beta_9$ | ? | 0.00001 | 1.23 |
| $POST$ | $\beta_{10}$ | ? | −0.00013 | −0.47 |
| $IndSmooth$ | $\beta_{11}$ | ? | 0.00025 | 1.52 |
| $POST \times IndSmooth$ | $\beta_{12}$ | ? | 0.00002 | 0.10 |
| *Firm fixed effects* | | | Yes | |
| *N* | | | 744 | |
| *Adj. R-squared* | | | 0.254 | |

This table presents the sensitivity tests with several alternative subsamples. Panels A and B present the regression analyses of Equation (2) excluding the one-single-statement users. The regression analyses in Panel C examine changes in the earnings management of treatment banks that switched the reporting position in 2011, 2012 and 2013. The regression analyses in Panel D examine changes in the earnings management of an extremely large treatment banks subsample.

For the regression analyses in Panel A, I exclude 8 control banks that used one-single-statement reporting in the pre-update period, and 9 treatment banks that used one-single-statement reporting in the post-update period. The final sample for the regression analyses in Table 11 Panel A includes 3,728 bank-quarters from 24 control banks and 166 treatment banks.

For the regression analyses in Panel B, I used a matched subsample excluding the one-single-statement users, in which I have 24 control banks and 24 treatment banks. To generate this matched subsample, I match each control bank to a treatment bank with the closest average quarterly *LD*, *MTB*, *SIZE* and *AFS* in the pre-update period using a Mahalanobis matching method. *LD*, *MTB*, *SIZE* and *AFS* are defined in Appendix 2. The final sample for the regression analyses in Table 11 Panel B contains 936 bank-quarters.

Panel C presents the regression results of Equation (6) with all the banks that changed their reporting position of CI from the equity statements to the performance statements during the test period following ASU-2011-05, which includes the banks that switched the reporting position in 2011 (31 banks), 2012 (175 banks) and 2013 (5 banks). *Update*=1 in the quarters after treatment banks adopted ASU-2011-05. The final sample for the regression analyses in Table 11 Panel C contains 4,068 bank-quarters.

Panel D presents the regression results of Equation (7) with 38 treatment banks that have average total assets in the test period above 10 billion. The final sample for the regression analyses in Table 11 Panel D contains 744 bank-quarters.

All variables are defined in Appendix 2. *T*-statistics are based on standard errors clustered by bank and quarter. ***, **, * indicate variables significant at the 0.01, 0.05 and 0.1 level, using one-sided (two-sided) t-tests for variables having predicted signs (no predicted signs).

**Table 12. Sensitivity Tests with Alternative Test Periods**

| | | Exp. | (1) Period 99-09 | | (2) Period 99-06 | | (3) Period 07-09 | |
|---|---|---|---|---|---|---|---|---|
| | | Sign | Coefficient | *T*-stat. | Coefficient | *T*-stat. | Coefficient | *T*-stat. |
| $SmoothNI_{iq}$ | $\beta_1$ | − | −0.01470*** | −2.47 | −0.02193*** | −2.81 | −0.00910 | −0.84 |
| $BigbathNI_{iq}$ | $\beta_2$ | + | 0.01053** | 2.37 | 0.03043** | 2.29 | 0.00939** | 2.61 |
| $\boldsymbol{Perf \times SmoothNI_{iq}}$ | $\boldsymbol{\beta_3}$ | + | **0.01122** | **1.01** | **0.02316*** | **1.36** | **0.00625** | **0.81** |
| $\boldsymbol{Perf \times BigbathNI_{iq}}$ | $\boldsymbol{\beta_4}$ | − | **−0.01914***** | **−2.61** | **−0.04535**** | **−1.91** | **−0.01127*** | **−1.51** |
| $AUGL_{iq-1}$ | $\beta_5$ | + | 0.03310*** | 6.26 | 0.02226*** | 6.33 | 0.07589*** | 6.49 |
| $RegCap_{iq}$ | $\beta_6$ | − | −0.00088*** | −2.81 | −0.00097*** | −3.89 | −0.00317** | −2.51 |
| $AFS_{iq}$ | $\beta_7$ | ? | 0.00051*** | 4.43 | 0.00039*** | 3.56 | 0.00089** | 2.22 |
| $TED_q$ | $\beta_8$ | ? | −0.00009** | −2.61 | −0.00004 | −1.40 | −0.00012* | −1.81 |
| $VIX_q$ | $\beta_9$ | ? | 0.00000 | 1.20 | 0.00000*** | 3.41 | 0.00000 | 0.88 |
| $Perf$ | $\beta_{10}$ | ? | −0.00003 | −0.37 | −0.00015 | −1.31 | 0.00010 | 0.69 |
| $IndSmooth$ | $\beta_{11}$ | ? | 0.00011*** | 2.98 | 0.00018** | 2.31 | 0.00002 | 0.82 |
| $Perf \times IndSmooth$ | $\beta_{12}$ | ? | −0.00001 | −0.16 | 0.00006 | 0.79 | 0.00001 | 0.09 |
| $\beta_1 + \beta_3$ | | | −0.00349 | −0.28 | −0.00124 | 0.07 | 0.00285 | −0.26 |
| $\beta_2 + \beta_4$ | | | −0.00862 | −1.56 | −0.01492 | −0.70 | −0.00188 | −0.25 |
| *Firm fixed effects* | | | Yes | | Yes | | Yes | |
| *N* | | | 15,207 | | 11,390 | | 3,817 | |
| *Adj. R-squared* | | | 0.157 | | 0.186 | | 0.246 | |

This table presents the estimation results of Equation (8) with data in the following test periods: 1999–2009, 1999–2006 and 2007–2009. The samples contain bank-quarters with reporting position data of CI in SEC EDGAR system and necessary regression variables in the bank regulatory database.

$Perf$=1 for bank-quarters with CI presented in the performance statements. All other variables are defined the same way as those in Equation (2). Period 1999 to 2009 has 15,207 bank-quarters and 3,306 of them have $Perf$=1 (Table 12

Column 1). Period 1999–2006 has 11,390 bank-quarters and 2,528 of them have $Perf$=1 (Table 12 Column 2). Period 2007–2009 has 3,817 bank-quarters and 778 of them have $Perf$=1 (Table 12 Column 3).

$T$-statistics are based on standard errors clustered by bank and quarter. ***, **, * indicate variables significant at the 0.01, 0.05 and 0.1 level, using one-sided (two-sided) t-tests for variables having predicted signs (no predicted signs).

## BIBLIOGRAPHY


Badertscher, B., Burks, J., and Easton, P., 2011. A convenient scapegoat: Fair value accounting by commercial banks during the financial crisis. *The Accounting Review* 87, 59–90.

Bamber, L., Jiang, J., Petroni, K., and Wang, I., 2010. Comprehensive income: Who's afraid of performance reporting? *The Accounting Review* 85, 97–126.

Barth, M., Beaver, W., and Wolfson, M., 1990. Components of earnings and the structure of bank share prices. *Financial Analysts Journal* 46, 53–60.

Barth, M., Gómez Biscarri, J., Kasznik, R. and López-Espinosa, G., 2015. Bank earnings and regulatory capital management using available for sale securities. *Available at SSRN 2448482*.

Barton, J., Hansen, T. and Pownall, G., 2010. Which performance measures do investors around the world value the most-And why? *The Accounting Review* 85, 753–789.

Bartov, E., 1993. The timing of asset sales and earnings manipulation. *The Accounting Review* 68, 840–855.

Beatty, A., Chamberlain, S. and Magliolo, J., 1995. Managing financial reports of commercial banks: The influence of taxes, regulatory capital, and earnings. *Journal of Accounting Research* 33, 231–261.

Beatty, A., Ke, B., Petronti, K., 2002. Differential earnings management to avoid earnings declines and losses across publicly and privately held banks. *The Accounting Review* 77, 547–570.

Beatty, A. and Harris, D, 1999. The effects of taxes, agency costs and information asymmetry on earnings management: A comparison of public and private firms. *Review of Accounting Studies* 4, 299–326.

Beaver, W., Eger, C., Ryan, S. and Wolfson, M., 1989. Financial reporting, supplemental disclosures, and bank share prices. *Journal of Accounting Research* 27, 157–178.

Black, D., 2016. Other comprehensive income: a review and directions for future research. *Accounting & Finance* 56, 9–45.

Biddle, G., Choi, J., 2006. Is comprehensive income useful? *Journal of Contemporary Accounting & Economics* 2, 1–32.

Cahan, S., Courtenay, S., Gronewoller, P., Upton, D., 2000. Value relevance of mandated comprehensive income disclosures. *Journal of Business Finance & Accounting* 27, 1273–1301.

Chambers, D., Linsmeier, T., Shakespeare, C., Sougiannis, T., 2007. An evaluation of SFAS No. 130 comprehensive income disclosures. *Review of Accounting Studies* 12, 557–593.

Cohen, L., Cornett, M., Marcus, A. and Tehranian, H., 2014. Bank earnings management and tail risk during the financial crisis. *Journal of Money, Credit and Banking* 46, 171–197.

Collins, J., Shackelford, D. and Wahlen, J., 1995. Bank differences in the coordination of regulatory capital, earnings, and taxes. *Journal of Accounting Research* 33, 263–291.

Cornett, M., McNutt, J. and Tehranian, H., 2009. Corporate governance and earnings management at large US bank holding companies. *Journal of Corporate Finance* 15, 412–430.

Dichev, I.D., Graham, J.R., Harvey, C.R. and Rajgopal, S., 2013. Earnings quality: Evidence from the field. *Journal of Accounting and Economics*, *56*, 1–33.

Dong, M., Ryan, S. and Zhang, X., 2014. Preserving amortized costs within a fair-value-accounting framework: reclassification of gains and losses on available-for-sale securities upon realization. *Review of Accounting Studies* 19, 242–280.

Fields, T., Lys, T. and Vincent, L., 2001. Empirical research on accounting choice. *Journal of Accounting and Economics* 31, 255–307.

Financial Accounting Standard Board. 1993. *Statement of Financial Accounting Standards No. 115:* Accounting for Certain Investments in Debt and Equity Securities. Norwalk, CT: FASB.

_____. 1997. *Statement of Financial Accounting Standards No. 130*: Reporting Comprehensive Income. Norwalk, CT: FASB.

Gebhardt, W., Lee, C. and Swaminathan, B., 2001. Toward an implied cost of capital. *Journal of Accounting Research* 39, 135–176.

Greenawalt, M. and Sinkey Jr, J., 1988. Bank loan-loss provisions and the income-smoothing hypothesis: an empirical analysis, 1976–1984. *Journal of Financial Services Research* 1, 301–318.

Hirst, D. and Hopkins, P., 1998. Comprehensive income reporting and analysts' valuation judgments. *Journal of Accounting Research* 36, 47–75.

Hirst, D., Jackson, K. and Koonce, L., 2003. Improving financial reports by revealing the accuracy of prior estimates. *Contemporary Accounting Research* 20, 165–193.

Hodder, L., Hopkins, P. and Wahlen, J., 2006. Risk-relevance of fair-value income measures for commercial banks. *The Accounting Review* 81, 337–375.

Jones, D. A., and Smith K. J., 2011. Comparing the value relevance, predictive value, and persistence of other comprehensive income and special items. *The Accounting Review* 86, 2047–2073.

Jordan, C. and Clark, S., 2011. Comprehensive Income: How Is It Being Reported And What Are Its Effects? *Journal of Applied Business Research* [Online],18,2.

Khan, S. and Bradbury, M., 2014. Volatility and risk relevance of comprehensive income. *Journal of Contemporary Accounting & Economics* 10, 76–85.

Kanagaretnam, K., Lobo, G. and Mathieu, R., 2003. Managerial incentives for income smoothing through bank loan loss provisions. *Review of Quantitative Finance and Accounting* 20, 63–80.

Kanagaretnam, K., Lobo, G. and Yang, D., 2004. Joint tests of signaling and income smoothing through bank loan loss provisions. *Contemporary Accounting Research* 21, 843–884.

Kanagaretnam, K., Mathieu, R. and Shehata, M., 2009. Usefulness of comprehensive income reporting in Canada. *Journal of Accounting and Public Policy* 28, 349–365.

Kilic, E., Lobo, G., Ranasinghe, T. and Sivaramakrishnan, K., 2012. The impact of SFAS 133 on income smoothing by banks through loan loss provisions. *The Accounting Review* 88, 233–260.

Lee, Y., Petroni, K. and Shen, M., 2006. Cherry picking, disclosure quality, and comprehensive income reporting choices: the case of property-liability insurers. *Contemporary Accounting Research* 23, 655–692.

Lifschutz, S., 2011. The effect of SFAS 115 on earnings management in the banking industry. *Journal of Applied Business Research* 18.

Liu, C. and Ryan, S., 2006. Income smoothing over the business cycle: Changes in banks' coordinated management of provisions for loan losses and loan charge-offs from the pre-1990 bust to the 1990s boom. *The Accounting Review* 81, 421–441.

Lundholm, R. 1999. Reporting on the past: A new approach to improving accounting today. *Accounting Horizons* 13, 315–22.

Maines, L. and McDaniel, L., 2000. Effects of comprehensive-income characteristics on nonprofessional investors' judgments: The role of financial-statement presentation format. *The Accounting Review* 75, 179–207.

Schaberl, P. and Victoravich, L., 2015. Reporting location and the value relevance of accounting information: the case of other comprehensive income. *Advances in Accounting* 31, 239–246.

Scholes, M., Wilson, G. and Wolfson, M., 1990. Tax planning, regulatory capital planning, and financial reporting strategy for commercial banks. *Review of Financial Studies* 3, 625–650.

Wahlen, J., 1994. The nature of information in commercial bank loan loss disclosures. *The Accounting Review* 69, 455–478.

Yen, A., Hirst, D. and Hopkins, P., 2007. A content analysis of the comprehensive income exposure draft comment letters. *Research in Accounting Regulation* 19, 53–79.

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