2013

Fair value measurements and earnings management: evidence from the banking industry

Xiaolu Xu

ABSTRACT

I examine the association between fair value measurements and bank earnings management using financial data for a sample of U.S. bank holding companies from 2009 to 2012. I follow the methodology in Beatty et al. (2002) and find that banks reporting higher recurring basis fair values, especially level 2 fair values and banks reporting increased fair values are more likely to report small earnings increases both in the current year and one-year ahead after controlling for discretionary loan loss provisions, discretionary security gains and losses, and other bank-specific characteristics. By decomposing the fair values into different types, I find that the positive association between fair value measurements and earnings management is primarily driven by available-for-sale assets. This relation can be found in both public banks and private banks. I also distinguish upward earnings management from downward earnings management and find that level 2 fair values are positively associated with upward earnings management and with downward earnings management via discretionary security gains and losses. By examining the relation between earnings volatility and fair value measurements, I find that banks recognizing more level 2 fair value assets and liabilities report smoother earnings over the time.

Key words: earnings management, fair value measurements, SFAS 157, fair value option, SFAS 159, discretionary loan loss provisions, discretionary security gains and losses

Data availability: The data is available from public sources

FAIR VALUE MEASUREMENTS AND EARNINGS MANAGEMENT: EVIDENCE FROM THE BANKING INDUSTRY

By

Xiaolu Xu

B.B.A. Nanjing Audit University, 2005
M.A. Binghamton University, 2007

DISSERTATION

Submitted in partial fulfillment of the requirements for the degree of
Doctor of Philosophy in Business Administration in the
Whitman School of Management of Syracuse University

Syracuse University
June 2013

ACKNOWLEDGEMENTS

This dissertation would not have been completed without the support of many people. I would like to take this opportunity to acknowledge my parents who have always supported and believed in me. Thank you especially to Tao Cong, my fiancé, who has always encouraged me with patience when I faced difficulties and challenges.

I would like to express my deepest appreciation to my advisor and dissertation committee chair, Professor Randy Elder, for his great insight, inspiration and guidance. I greatly appreciate my dissertation committee co-chair, Professor Susan Albring, for her suggestions and edits on my dissertation and for her support and encouragement on my research. I would like to thank my committee members Professors Craig Nichols, Lihong Liang, Shawn Huang for their constructive suggestions. I appreciate Professors David Harris, Joe Comprix, Kofi Okyere for their helpful comments. I also thank Professor Milena Petrova for her service as my oral exam committee chair.

I thank Professors Ravi Dharwadkar, Badi Baltagi, Alex Thevaranjan, Eunkyu Lee, Mitch Franklin and Michel Benaroch for their intelligent contributions in my PhD study and teaching.

I appreciate the superb support from Carolyn Hilleges, Agnes Magnarelli, Mary Jo Chase, and Patricia Morgan.

I would like to thank my fellow classmates Linna Shi, Huichi Huang, Willie Reddic, Joey Hamilton, Alfred Yebba, Ravindra Ramchandra Bangar, Chao Chen, Emily Cokeley, Michael Hyman, Dave Witesman, Adam Wang, Hongyu Song, Insun Yang and Michael Shafer for their support and help.

Lastly, I appreciate two anonymous reviewers for the 2013 FARS Midyear Meeting and 2013 AAA Annual Meeting for their helpful comments and suggestions. A paper based on this dissertation has been accepted for presentation at the 2013 AAA Annual Meeting.

TABLE OF CONTENTS

LIST OF APPENDICES

LIST OF FIGURES

LIST OF TABLES

1. Introduction

This dissertation studies the association between fair value accounting in current financial reporting practice and banks earnings management. The ideal concept of fair value accounting is that all assets and liabilities of a firm are measured at fair value instead of historical cost and any change in the fair value of an asset or a liability is reported in the current period net income. Proponents of fair value accounting argue that it better reflects how much a firm's assets and liabilities are worth, therefore, it provides more relevant information to investors. Opponents think that fair value is not as objective or reliable as historical cost. Fair value accounting requires more subjective judgments in the process of preparing accounting information, which may bring inaccuracy and uncertainty. The debate over fair value accounting never stops; nevertheless, it is the trend that fair value accounting will be used more extensively. A recently issued standard, SFAS 157 Fair Value Measurements, provides practical guidance on how to consistently measure fair values within the scope of existing standards on fair value accounting. Moreover, SFAS 157 requires firms to measure fair value assets and liabilities into three levels. The subsequently issued standard, SFAS 159 Fair Value Option, brings fair value accounting into a new stage by allowing firms to measure many other assets and liabilities at fair value. As fair value accounting evolves, the current financial reporting practice is a mix of fair value accounting and historical cost accounting. Some assets are reported at fair value with changes in fair value recognized in net income, e.g., trading assets and certain derivatives. Some assets are measured at fair value with changes in fair value reported in equity, e.g., available-for-sale assets. Some assets are measured at amortized cost, e.g., held-to-maturity assets. The objective of this research is to use fair value information disclosed under standards 157 and 159 to detect earnings management. I examine earnings management in the banking industry because banks hold large

amounts of financial assets and liabilities, which are most affected by current fair value accounting standards.

Recent research on fair value measurements finds that value relevance is decreasing (Song et al. 2010) and information risk is increasing (Riedl and Serafeim 2011) across the level 1, level 2 and level 3 fair values.1 Studies on the impact of fair value measurements on audit fees show that audit fees increase as the extent of fair value measurements increases, especially level 3 fair values (Ettredge et al. 2010, Chen et al. 2010). Fiechter and Meyer (2010) study a sample of public U.S. bank holding companies from Q1 2008 to Q1 2009 and find evidence of a bath taking behavior via level 3 unrealized security gains and losses. Song (2008) examines characteristics of a sample of public banks which adopt the fair value option. The univariate tests in his study show that fair value option adopters are more likely to meet earnings benchmarks for the same quarter of prior years and market expectations.

This study is motivated by the critiques and concerns on fair value accounting and explores the relation between fair value measurements described in SFAS 157 and earnings management. Researchers and practitioners believe that fair values, especially fair values based on inputs which are not directly observed, are subject to manipulation (Benston 2008, Benson and Teclezion 2007). Following Beatty et al. (2002), I measure earnings management as small earnings increases. The literature on meeting or beating earnings benchmarks show that firms use discretionary accounting choices to avoid earnings decreases, losses or missing market expectations. Hence, firms whose earnings just meet or beat benchmarks can be considered as manipulating earnings (Burgstahler and Dichev 1997, Degeorge et al. 1999, Beatty et al. 2002).

[1] SFAS157 describes a fair value hierarchy based on the inputs of fair value measurement. Level 1 fair value inputs are quoted prices directly observable from active markets for identical assets and liabilities. Level 2 fair value inputs can be directly or indirectly observable, and exclude the level 1 inputs. Level 3 fair value inputs are unobservable allowing firms to use internal models and assumptions (SFAS 157, paragraph 22-31).

Graham et al. (2005) show that about 85.1% of the surveyed CFOs in their sample consider earnings in the same quarter of the prior year to be important. I expect that firms reporting higher fair values are more likely to report small earnings increases, consistent with the concerns expressed by scholars and practitioners.

I select a sample of U.S. public and private bank holding companies during the period 2009-2012 from the Federal Reserve Bank Holding Company Database which have available fair value assets and liabilities information and other necessary financial data. I use a logistic regression model and examine the association between fair values and the probability of reporting small earnings increases.

Following Burglestahler and Dichev (1997), I first examine the distributions of earnings changes for the high fair value and the low fair value group. I find a discontinuity around zero in the earnings change distributions of both the high fair value group and the low fair value group, however, the kink for the high fair value group is significantly larger than the kink for the low fair value group. The multivariate test shows that banks with higher recurring basis fair values are more likely to report small earnings increases both in the current year and one-year ahead after controlling for discretionary loan loss provisions, discretionary security gains and losses as well as other bank-specific characteristics. By decomposing the total fair values into three levels based on the fair value hierarchy specified in SFAS 157, I find that higher level 2 fair values significantly increase the probability that a firm reports small earnings increases, while level 1 and level 3 fair values do not affect that probability. I further decompose fair values into different types.2 The findings suggest that the positive association between fair values and the probability of reporting small earnings increases is driven by level 2 available-for-sale assets. I

[2] The classification of different types of assets and liabilities is based on Schedule HC-Q, Financial Assets and Liabilities Measured at Fair Value of the call form, such as, loans, trading assets, available-for-sale assets, Federal funds securities, deposits, trading liabilities, loan commitments, and all other assets and liabilities, etc.

also find that increases in level 2 fair values are positively associated with the probability of reporting small earnings increases. Next, I investigate bank-years which report small earnings changes before discretionary loan loss provisions or before discretionary security gains and losses in the high fair value subsample and in the low fair value subsample. The results show that high fair value bank-years are more likely to manage earnings upward to beat prior year earnings targets by reducing the discretionary loan loss provisions or increasing discretionary security gains and losses.

To distinguish upward earnings management from downward earnings management, I define upward earnings management as bank-years which have earnings decreases before discretionary loan loss provisions or discretionary security gains and losses, but have small earnings increases after. I define downward earnings management as bank-years which have large earnings increases before discretionary loan loss provisions or discretionary security gains and losses, and have small earnings increases after. I find that high level 2 fair values are positively associated with upward earnings management through both accounting choices. Level 2 fair values are positively associated with downward earnings management only through discretionary security gains and losses.

Then I examine the factors which determine the net changes in fair values recognized in earnings. This test considers earnings management through net changes in fair values as a third channel separately from discretionary loan loss provisions and discretionary security gains and losses. In a subsample of 324 bank-years reporting change in fair values of assets and liabilities elected for fair value options, I find that net changes in fair values recognized in earnings are negatively associated with the income before net changes in fair values, consistent with earnings

smoothing. I also find that net changes in fair values are positively associated with level 2 fair value assets.

Finally, I examine the association between earnings volatility and fair value measurements. I find that banks recognizing more overall (level 2) fair value assets and liabilities report smoother earnings over the time.

My study contributes to two streams of research. I contribute to the literature examining earnings management of banks. Beatty et al. (2002) provide evidence that public banks report more small earnings increases and less small earnings decreases than private firms by reporting lower discretionary loan loss provisions and higher discretionary security gains and losses. Beatty and Harris (1999) provide evidence that public banks are more likely to manipulate security gains to smooth earnings than private banks. I contribute to this line of research on using fair value information disclosed in the financial statements regulated by SFAS 157 to detect earnings management. Specifically, I show that banks with higher overall (level 2) fair values or banks with increased overall (level 2) fair values are more likely to beat prior year earnings targets.

I also contribute to the literature on fair value measurements. Prior studies find that level 3 fair values are less value relevant (Song et al. 2010), associated with a higher cost of capital (Riedl and Serafeim 2011) and associated with an increase in audit fees (Ettredge et al. 2010). Fiechter and Meyer (2010) find that banks take a big bath via level 3 unrealized gains and losses during the financial crisis. Liao et al. (2010) document a positive association between information asymmetry and all three levels of fair value net assets and loan loss provisions during the financial crisis. I contribute to this line of research by examining the association between three level fair values, especially level 2 fair values, and the probability that a bank

reports small earnings increases. My findings suggest that investors, analysts or auditors should pay attention to banks with large level 2 fair values assets, especially large level 2 available for sale assets and with large increases in level 2 fair values as those banks are more likely to engage in earnings management.

The rest of this paper is organized as follows. Section 2 discusses the background and motivation of this study. Section 3 reviews prior research on earnings management of banks and research on fair value accounting. Section 4 discusses the research methodology and sample selection. Section 5 presents and discusses the empirical results. Section 6 concludes.

2. Background and motivation

The Financial Accounting Standards Board issued Statement of Financial Accounting Standards No. 157 *Fair Value Measurements* in September 2006, which was effective on November 15, 2007. SFAS 157 "defines fair value, establishes a framework for measuring fair value, and expands disclosures about fair value measurements" (SFAS 157, p.6 paragraph 1).[3] SFAS 157 "does not require any new fair value measurements" but consolidates the different definitions and applications of fair value in previously issued standards on fair value accounting (SFAS 157, p.2). This statement describes a fair value hierarchy based on the inputs of fair value measurement. Level 1 fair value inputs are quoted prices directly observable from active markets for identical assets and liabilities. Level 2 fair value inputs can be directly or indirectly observable, and exclude the level 1 inputs. Level 3 fair value inputs are unobservable allowing firms to use internal models and assumptions (SFAS 157, paragraph 22-31). Firms are required to disclose in their financial reports the assets and liabilities measured at fair value in each level.

[3] SFAS 157 defines fair value as "the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date." (SFAS 157, p.6 paragraph 5)

Appendix C presents an example of fair value measurements disclosure in the 10-K of Wells Fargo & Company (WFC) on Dec. 31, 2012. WFC reports $358,659 million in assets at fair value and $22,390 million in liabilities at fair value. Specifically, it reports $13,561 million level 1 assets, $355,327 million level 2 assets, $51,879 million level 3 assets, $5,732 million level 1 liabilities, $84,670 million level 2 liabilities, and $3,104 million level 3 liabilities. Some researchers and practitioners criticize the difficulties in applying and verifying fair value measurements. For example, Benston (2008) points out that "fair values other than those taken from quoted prices (level 1) could be readily manipulated by opportunistic and overoptimistic managers, would be costly to make, and very difficult for auditors to verify and challenge" (Benston 2008, p.104). The following is a quotation from a newsletter of *i*Comp, LLC, a company providing services on firm, asset, and liabilities valuation:

"*The additional levels of discretion allotted management under this regulation, in the presence of limited valuation guidance, will, ultimately, increase their ability to manage earnings over time. This ability will increase directly with the proportion of Level 2 and Level 3 assets (liabilities) held by the firm."*

Although managers have discretion over both level 2 and level 3 fair values, it may be easier to manipulate level 2 fair values than level 3 fair values for two reasons. First, companies hold a higher dollar value of level 2 assets and liabilities than level 3 assets and liabilities. Take the sample in this study as an example. Level 2 fair values account for about 76% of the total fair values, on average, while level 3 fair values account for only about 3%. This implies that there is more room to manage earnings through level 2 fair values. Within level 2 fair values, about 91% of level 2 fair values are available-for-sale assets. Second, there is mandatory detailed disclosure for level 3 fair values but no such disclosure requirement for level 2 fair values. SFAS 157

requires companies to reconcile the beginning and ending balances and to disclose changes due to 1) total gains and losses for the period; 2) purchases, sales, issuances, and settlements; 3) transfers in and out of level 3 (SFAS157, p.12). Appendix D presents the disclosure of changes in level 3 assets and liabilities measured at fair value of Wells Fargo & Company for the year ended Dec. 31, 2012. This disclosure is not required for level 1 or level 2 assets and liabilities. Among 276 public banks in my sample, only two banks provide such disclosure for level 1 and level 2 assets and liabilities. The more detailed disclosure requirement for level 3 fair values makes it more difficult to manipulate level 3 fair values since level 3 fair values will receive more attention from investors, auditors and regulators. Ryan (2008, p.1628) points out that "The required disclosures are considerably more detailed for level 3 fair value measurements" and "These disclosures make the effects of level 3 measurements on the financial statements considerably more transparent than they would have been under prior GAAP." He also mentions that "Indeed, given the poor quality market signals currently being generated, I believe level 3 fair value measurements supported by disclosures of critical inputs and the sensitivity of the measurements to the inputs often would be considerably more informative to users of financial reports than poor quality level 2 fair value measurements." (Ryan 2008, p.1628) In addition, discussion with practitioners indicates that level 3 fair values have small dollar values and managers are conservative in reporting level 3 fair values. Hence, I expect that firms reporting higher fair values, especially higher level 2 fair values are more likely to engage in and are more effective in earnings management.

Following prior literature, I use beating prior year earnings targets to proxy for earnings management. According to Burgstahler and Dichev (1997), there are two underlying theories explaining why managers have strong incentives to beat or meet earnings benchmarks. First,

according to transaction cost theory, meeting earnings targets reduces transaction costs. Second, prospect theory shows that an individual's value function is assumed to be concave in gains and convex in losses, therefore, the increase in value is greatest when beating the earnings target. In practice, managers care about earnings benchmarks. Graham et al (2005) show that about 85.1% of the CFOs in their sample consider earnings in the same quarter of the prior year to be important. To summarize, I expect that banks recognizing higher fair value assets and liabilities are more likely to beat prior year earnings targets.

3. Literature and hypotheses

This study follows two streams of research: 1) research on bank earnings management; and 2) research on fair value accounting. In this section, I briefly review the two streams of research.

3.1 Earnings management of banks

There is a rich literature on earnings manipulation practices and financial accounting choices of bank holding companies. Early studies show that banks have incentives to meet regulatory capital requirements and earnings targets, and to reduce taxes. The objectives can be achieved by managing accruals such as loan loss provisions, loan charge-offs, security gains and losses or adjusting investment strategies (Moyer 1990, Scholes et al. 1990, Collins et al. 1995, Beatty et al. 1995, Ahmed et al. 1999, Beatty and Harris 1999, Beatty et al. 2002). Banks have an incentive to manipulate earnings because accounting earnings convey firm information to investors and play an important role in firm performance evaluation and accounting-based contracting (Warfield et al. 1995).

Although the earnings management incentive exists in the entire banking industry, there is variation across different types of banks. Some studies find that public banks have greater incentive to manipulate earnings and engage in more earnings management. Beatty and Harris (1999) find that public banks engage in more earnings manipulation through security gains and losses than private banks. The authors argue that banks manage earnings not only in response to regulatory requirements, but also to reduce agency costs and information asymmetry. Beatty et al. (2002) provide evidence that public banks report more small earnings increases than private banks. The authors further show that public banks are more likely to use loan loss provisions and security gains and losses to avoid earnings decreases than private banks. Alternatively, prior studies show that public banks demand higher level verifiable accounting information so that they are able to recognize losses more timely than gains. Nichols et al. (2009) compare public banks and private banks in terms of conservative accounting and provide evidence that public banks exhibit greater conditional conservatism. In addition, prior research finds that banks' incentive to manage earnings is linked to managers' compensation. Dechow et al. (2010) show that managers have a compensation incentive to manipulate securitization gains under SFAS 140.

Among the research on financial reporting in the banking industry, some studies specifically examine discretionary choice on loan loss provisions which are an important accrual of bank holding companies. The studies find that loan loss provisions can be decomposed into a component which can be predicted and another component which is subject to managerial discretion. The market prices these two components differently (Beaver and Engel 1996). Wahlen (1994) finds a positive association between discretionary loan loss provisions and future cash flow increases after controlling for the unexpected change in non-performing loans and unexpected loan charge-offs. Beaver and Engel (1996) also find a positive association between

discretionary loan loss provisions and stock returns, supporting the signaling effect of discretionary loan loss provisions. Kanagaretnam et al. (2009) find that auditor expertise drives the positive market reactions, suggesting that investors perceive discretionary loan loss provisions disclosed by banks to convey more valuable information when the bank is audited by specialists in the banking industry.

Banks have various incentives to manage loan loss provisions. Prior research provides evidence that banks use loan loss provisions to manage capital (Kim and Kross 1998; Ahmed et al. 1999) and to smooth earnings (Kanagaretnam et al. 2003). Lobo and Yang (2001) jointly test the signaling effect, capital management effect and earnings management effect of loan loss provisions. Their findings suggest that the income smoothing effect is supported by all the models but the signaling effect is sensitive to different model specifications.

3.2 Fair value accounting

There has been a long-lived debate over fair value accounting. Early studies primarily focus on the value relevance of fair value disclosure. Barth (1994) provides evidence that the fair value of investment securities provides incremental power in explaining stock returns compared with historical book value. Barth et al. (1995) examine fair value based earnings and regulatory capital measures under SFAS 115, *Accounting for Certain Investments in Debt and Equity Securities*. They find that fair value based earnings are more volatile and banks under fair value accounting violate regulatory capital requirements more frequently. Both Nelson (1996) and Barth et al. (1996) study the value relevance of fair value estimates under SFAS 107, *Disclosures about Fair Value of Financial Instruments*, but find conflicting results. Nelson (1996) shows that fair value measures are value irrelevant after controlling for future profitability while Barth et al. (1996) include non-performing loans and interest-sensitive assets and liabilities as control

variables and find the opposite results. Liang and Riedl (2011) examine the impact of fair value accounting on analyst forecasts. They find that UK firms have more accurate net asset value forecasts based on firm-supplied fair values while US firms have more accurate EPS forecasts based on historical cost reporting. Blankespoor et al. (2013) show that leverage ratios using fair value information better explain banks credit risk which is measured by bond spread and bank failure.

The recent issuance of SFAS 157 *Fair Value Measurements* as well as the financial crisis in 2008-2009 provoked a large amount of research on fair value accounting based on the fair value disclosure requirements and recommendations under SFAS 157. Song et al. (2010) find that level 1 and level 2 fair values are more value relevant than level 3 fair values. In addition, good governance increases the value relevance of fair values, especially level 3 fair values. Riedl and Serafeim (2011) document a higher cost of capital for financial institutions with more level 3 fair value assets. They also find that the differences in cost of capital across the three levels of fair value assets are smaller for financial institutions which have better information environments. Liao et al. (2010) document a positive association between information asymmetry, measured by the bid-ask spread, and both fair value net assets and loan loss provisions during the financial crisis.

Researchers have expressed concerns that fair value measurements described in SFAS 157 give managers more discretion over asset and liability valuation and fair values are more difficult and costly to audit (Benston 2008). Ryan (2008) argues that it is hard to implement the fair value measurements described in SFAS 157 during the subprime crisis. Martin et al. (2006) conclude from a stream of judgment and decision-making research that there are unintentional and intentional biases when managers prepare fair values. Specific knowledge and skills are

required but very difficult to gain in order to audit fair values. In response to these concerns, recent studies examine how fair value measurements in SFAS 157 affect earnings manipulation and auditing. Fiechter and Meyer (2010) find that banks take a big bath via level 3 unrealized gains and losses during the financial crisis. Ettredge et al. (2010) examine the impact of fair value measurements on audit fees. They find that fair value assets, especially level 3 assets, increase audit fees. Chen et al. (2010) study the relation between fair value measurements and loan loss provisions but fail to find a direct association. Heflin and Valencia (2012) examine managerial discretion over level 3 estimates under SFAS 157. They do not find evidence of capital management through level 3 fair values but provide evidence that banks manage level 3 inputs to exceed zero and prior quarter earnings. Contrary to their results, I find a positive association between level 2 fair values and reporting small earnings increases but no significant association between level 3 fair values and reporting small earnings increases.

There are two concurrent studies which are most related to this paper. Bratten et al. (2012) examine the association between the magnitude of fair value reporting and bank earnings management through discretionary loan loss provisions and discretionary security gains and losses. Their results show that bank holding companies with more fair value reporting rely more on discretionary security gains and losses than discretionary loan loss provisions to smooth earnings. Further, they show that banks whose auditors are industry specialists are less likely to manage earnings. Barth et al. (2012) provide evidence that banks use gains on available-for-sale assets to smooth earnings and capital. In addition, they find that banks' holding available-for-sale assets are related to banks' earnings management through realized gains and losses on available-for-sale assets. In other words, the more available-for-sales assets a bank holds, the greater "opportunity" that a bank uses realized gains and losses to smooth earnings. My study is similar

to these papers in that it also examines the association between fair value accounting and bank earnings management, however, my study is different in the following ways: 1) The scope of fair value assets and liabilities in my study is different. Bratten et al. (2012) consider all assets and liabilities both recognized at fair value on balance sheets and disclosed at fair value in the footnotes. Barth et al. (2012) only studies available-for-sale assets. I focus on fair value assets and liabilities recognized and reported on balance sheets. SFAS 157 requires disclosure on inputs of fair value assets and liabilities recognized in the consolidated balance sheet, but not on inputs of assets and liabilities for which the fair values are disclosed in the footnote.[4] For example, held-to-maturity assets are reported at their amortized costs and their fair values are disclosed in the footnote. Therefore, the fair value variables in this study do not include the fair values of held-to-maturity assets. Ryan (2007) mentions that "gains trading is generally not possible using HTM securities, because these securities cannot be sold without giving up the right to classify securities as HTM…" (Ryan 2007, p.152); 2) they focus on income smoothing while I proxy for earnings management with beating prior year earnings benchmarks; 3) the sample period in my study is more recent because one of my research objectives is to examine the impact of different levels of fair value on earnings management based on the fair value hierarchy in SFAS 157; 4) I also examine changes in fair values on other types of assets and liabilities, eg. trading assets, assets and liabilities recognized for fair value options. Compared to Barth et al (2012), this paper has incremental contribution by providing evidence that banks engage in earnings management through level 2 available-for-sale assets, not level 1 or level 3 available-for-sale assets.

Motivated by the critiques and concerns regarding fair value measurements described in SFAS 157 (Benston 2008, Ryan 2008, Martin et al. 2006), this study follows the two streams of

[4] SFAS 157 mentions that "The reporting entity is encouraged, but not required, to combine the fair value information disclosed under this Statement with the fair value information disclosed under other accounting pronouncements." (SFAS157, p.13 paragraph 35)

research reviewed above to examine the impact of fair value measurements defined in SFAS 157 on earnings management, proxied by reporting small earnings increases (Beatty et al. 2002), controlling for discretionary loan loss provisions, discretionary security gains and losses as well as other bank-specific characteristics. Especially, I argue that managers are more likely to manipulate earnings through level 2 fair values because of the higher dollar values and less extensive disclosure for level 2 fair values. I express the testable hypotheses in this study as follows:

H1: Banks reporting higher fair values are more likely to report small earnings increases, controlling for discretionary loan loss provisions, discretionary security gains and losses as well as other bank-specific characteristics.

H2: Banks reporting higher level 2 fair values are more likely to report small earnings increases, controlling for discretionary loan loss provisions, discretionary security gains and losses as well as other bank-specific characteristics.

4. Research design and sample selection

In this section, I discuss the research methodology, variable construction and the sample selection procedure.

4.1 Discretionary loan loss provisions and discretionary security gains and losses

I use the following models to estimate the discretionary loan loss provisions and discretionary security gains and losses, which are similar to the models in Beatty et al. (2002).

$$LLP_{it} = \alpha + \beta_1 Log(ASSET)_{it} + \beta_2 \Delta NPL_{it} + \beta_3 LLR_{it} + \beta_4 LOANR_{it} + \beta_5 LOANC_{it} + \beta_6 LOAND_{it} + \beta_7 LOANA_{it} + \beta_8 LOANI_{it} + \beta_9 LOANO_{it} + YEARDUMMY_{it} + \varepsilon_{it} \quad (1)$$

$$RSGL_{it} = \alpha + \beta_1 Log(ASSET)_{it} + \beta_2 TSGL_{it} + YEARDUMMY_{it} + \varepsilon_{it} \quad (2)$$

Definition of all variables is presented in appendix A.

According to prior research, I expect that the loan loss provisions are increasing in bank size (Beatty et al. 2002), change in nonperforming loans (Wahlen 1994; Beaver and Engel 1996; Ahmed et al. 1999; Lobo and Yang 2001; Beatty et al. 2002; Kanagaretnam et al. 2009) and loan size (Wahlen 1994; Beaver and Engel 1996; Beatty et al. 2002). I also expect that the realized security gains and losses are increasing in the total security gains and losses (Beatty and Harris 1999, Beatty et al 2002). The residual estimated from equation (1) is the discretionary component of loan loss provisions. The residual estimated from equation (2) is the discretionary component of security gains and losses. The residuals are used in the logistic regression analysis.

4.2 Fair value measurements

I use the following two logistic regression models to test the association between fair value measurements on the probability that a bank reports small increases in return on assets.

$$\begin{aligned}\Delta ROAINC_{it} = {} & \alpha + \beta_1 PUBLIC + \beta_2 FV_{it} + \beta_3 Log(ASSET)_{it} + \beta_4 \Delta ASSET_{it} + \beta_5 \Delta CF_{it} + \\ & \beta_6 \Delta NPL_{it} + \beta_7 \Delta LOANR_{it} + \beta_8 \Delta LOANC_{it} + \beta_9 \Delta LOAND_{it} + \beta_{10} \Delta LOANA_{it} + \\ & \beta_{11} \Delta LOANI_{it} + \beta_{12} \Delta LOANO_{it} + \beta_{13} DLLP_{it} + \beta_{14} DRSGL_{it} + YEARDUMMY_{it} + \varepsilon_{it}\end{aligned} \quad (3)$$

$$\begin{aligned}\Delta ROAINC_{it} = {} & \alpha + \beta_1 PUBLIC + \beta_2 L1FV_{it} + \beta_3 L2FV_{it} + \beta_4 L3FV_{it} + \beta_5 Log(ASSET)_{it} + \\ & \beta_6 \Delta ASSET_{it} + \beta_7 \Delta CF_{it} + \beta_8 \Delta NPL_{it} + \beta_9 \Delta LOANR_{it} + \beta_{10} \Delta LOANC_{it} + \beta_{11} \Delta LOAND_{it} + \\ & \beta_{12} \Delta LOANA_{it} + \beta_{13} \Delta LOANI_{it} + \beta_{14} \Delta LOANO_{it} + \beta_{15} DLLP_{it} + \beta_{16} DRSGL_{it} + \\ & YEARDUMMY_{it} + \varepsilon_{it}\end{aligned} \quad (4)$$

Definition of all variables is presented in the appendix A.[5]

[5] The dependent variable $\Delta ROAINC_{it}$ is a dichotomous variable equal to one if the firm's *ΔROA* is between 0 and 0.0014, and zero otherwise; where *ΔROA* is calculated as net income at year t minus net income at year t-1, divided by total assets at year t-2.

The two regression models above are variations of the model in Beatty et al. (2002) and include variables for fair value measurements. Equation (3) tests the overall impact of total fair values. In additional tests, I test equation (3) with *FV* replaced by a dichotomous variable *HFV*. I test equation (4) with *L1FV*, *L2FV* and *L3FV* replaced by dichotomous variables *L1HFV*, *L2HFV* and *L3HFV*. I expect that the coefficient of *FV* or *HFV* is positive and significant, suggesting that banks reporting high fair values on their balance sheet are more likely to report small earnings increases.

Equation (4) tests the impact of the three fair value levels separately. According to the fair value hierarchy, the inputs of level 1 fair value assets and liabilities are directly observable from active markets, implying that managers have little discretion when valuing level 1 fair value assets and liabilities. Hence, I expect that level 1 fair value assets and liabilities will have not have a significant impact on earnings management. In contrast, managers use inputs indirectly observed from inactive markets or use internal models and assumptions when they value level 2 and level 3 assets and liabilities, implying that managers have more discretion over level 2 and level 3 fair value measures. Hence, I expect that the coefficient of *L2FV* or *L2HFV* is positive and significant. Although managers have discretion over level 3 fair values, banks may not be able to manage earnings effectively through level 3 fair values. First, banks usually report small dollar amounts of level 3 fair value assets and liabilities, implying that banks have limited room to manipulate earnings through level 3 fair values. Second, SFAS157 requires more detailed disclosure in level 3 fair values which restrains managerial incentive to manipulate earnings through level 3 fair values. Therefore, I do not predict the direction of the coefficient on the level 3 fair value variable.

The independent variable FV_{it} is calculated as total assets and liabilities reported at fair value at year t divided by the total assets at year t-1. So any change in total fair value assets and liabilities would not affect the value of ΔROA through the denominator.

For banks which manipulate earnings to beat prior year earnings targets, they are more likely to undercharge loan loss provisions. Thus, I expect that there is a negative association between discretionary loan loss provisions and the probability that a bank reports small earnings increases. Following Beatty et al. (2002), I also control for bank type, change in bank size, change in cash flow, change in nonperforming loans and change in loan size. In additional tests, I also control for realized security gains and losses to test if the loading of available-for-sale assets is partially due to the realized security gains and losses on available-for-sale assets. Finally, I include year dichotomous variables to control for the time fixed effects. I also adjust for firm-level clustering when estimating the standard errors.

4.3 Data and sample selection

Table 1 Panel A shows the sample selection procedure. The initial sample contains all domestic bank holding companies from the Bank Holding Company Database maintained by Federal Reserve Bank of Chicago during the period 2005-2012. The Bank Holding Company Data includes financial information of bank holding companies filed in the form FR Y-9C. SFAS 157 was effective for financial statements which are issued for the fiscal year beginning on and after November 5, 2007 (SFAS 157). I chose the initial sample year from 2005 to calculate change in ROA starting from the year 2007. The initial sample includes 43,945 bank-year observations for 7,061 unique banks. I require the sample companies to have necessary financial data to calculate discretionary loan loss provisions, discretionary security gains and losses as well as change in ROA. The sample at this stage has 5,311 bank-years for 1,147 banks[6]. I use this sample to calculate the bin width when examining the distributions of change in return on

[6] The primary reason of data loss is that many basic financial data items have missing values in the original database. For example, among 43,945 bank-year observations, only 9,409 observations have available total assets (BHCK2170), net income (BHCK4340), net loans (BHCK2122), loan loss reserve (BHCKB522), loan loss provisions (BHCK4230), realized gains and losses on available-for-sale securities (BHCK3196) and realized gains and losses on held-to-maturity securities (BHCK3521).

assets.[7] Then I exclude all bank-year observations with missing data on fair value assets and fair value liabilities. I found that many banks do not report fair value assets and liabilities in the year 2007 and 2008. This is because Schedule HC-Q Financial Assets and Liabilities Measured at Fair Value is required to be completed by all bank holding companies since 2009.[8] In order to mitigate the self-selection issue, I deleted observations in the year 2007 and 2008. Finally, I removed banks with missing years from 2009 to 2012.[9] The final sample consists of 2,896 bank-year observations for 724 unique banks.

Table 1 Panel B presents the distributions of banks across years for the high fair value group and the low fair value group. The final sample is a balanced panel. There are 724 observations in each year, including 362 observations in the high fair value group and 362 observations in the low fair value group.

Insert Table 1

Table 2 compares the descriptive statistics for fair value variables and control variables between the low fair value group and high fair value group. All continuous variables are winsorized at the top and bottom 1%. In the high fair value group 22.0% of the bank-years report small earnings increases while in the low fair value group only 16.1% of the bank-years report small earnings increases. The difference is significant at the 1% level. The dichotomous variables EM_UP1 and EM_UP2 capture banks that manage earnings upward through discretionary loan loss provisions and discretionary security gains and losses respectively. The dichotomous variables EM_DN1 and EM_DN2 capture banks that manage earnings downward through discretionary loan loss provisions and discretionary security gains and losses

[7] The calculation of bin width is discussed in Section 4.
[8] An example of Schedule HC-Q from FR Y-9C is in the appendix.
[9] I also keep these observations in the sample and the results are qualitatively unchanged.

respectively. The percentage of bank-years which manage earnings upward using the two methods are significantly higher for the high fair value group (13.6% and 5% respectively) than the low fair value group (8% and 2.3% respectively). Although there is not a significant difference in the percent of bank-years that manage earnings downward through discretionary loan loss provisions between the two groups, there are more bank-years which manage earnings downward through discretionary gains and losses for the high fair value group (8.4%) than the low fair value group (5%). The earnings volatility is significantly lower for the high fair value sample (0.2%) than the low fair value sample (0.3%). In the low fair value group 36.3% of the banks are public banks, while in the high fair value group 40% of the banks are public banks. The descriptive statistics for the fair value variables show that the high fair value banks measure more assets and liabilities at fair value in all three levels than the low fair value banks. I also find that level 2 fair values account for the largest component of the total fair value. On average, banks report very small amounts of level 3 assets and liabilities. In the high fair value sample, fair values increase by 7.9% of the total assets at the beginning of the year while in the low fair value sample, fair values increase only by 1.6% of the total assets. The distribution of fair value assets and liabilities in the sample are consistent with other studies on fair value measurements (Song et al. 2010, Chen et al. 2010, Bratten et al. 2012).

On average, high fair value banks have significantly lower discretionary loan loss provisions and higher discretionary security gains and losses than the low fair value banks. The mean differences are -0.2% of the average loans and 0.02% of total assets respectively. High fair value banks have significantly higher realized gains and losses than low fair value banks. The results are consistent with the expectation that the high fair value banks are more likely to engage in earnings management through discretionary loan loss provisions and discretionary security

gains and losses than low fair value banks. Additionally, high fair value banks are larger, experience a significantly larger increase in total assets and a larger increase in cash flow than the low fair value banks. Lastly, high fair value banks experience smaller decreases in real estate loans and commercial loans.

Insert Table 2

5. Empirical results

5.1 Composition of fair value assets and liabilities

I first examine the composition of fair value assets and liabilities in each level. Figure 1 panel A shows that on average, about 97% of fair values are assets and only 3% of fair values are liabilities. Level 2 fair value assets account for about 75% of total fair values, and are the biggest component of fair values. The second biggest component is level 1 fair value assets, which account for 18% of total fair values. Level 3 fair value assets account for 3% of total fair values, respectively. Figure 1 panels B through D present the composition of fair values for each level by the type of assets and liabilities. The classification of fair value assets and liabilities are based on the Schedule HC-Q in the form FY9-C. For level 1 fair values, the biggest component is available-for-sale assets, which accounts for 86% of the level 1 fair value. The second biggest component is deposits, which accounts for 6% of the level 1 fair value. For level 2 fair values, the largest component is also available-for-sale assets, which accounts for 91% of the level 2 fair value. The second and third largest components are trading assets and trading liabilities, which account for 3% and 2% of the level 2 fair values respectively. For level 3 fair values, the largest component is loans, which accounts for 41% of the level 3 fair value. Figure 1 shows that the

largest component of recurring basis fair values is level 2 fair value assets in terms of fair value hierarchy and available-for-sale assets in terms of asset type.

Insert Figure 1

Figure 2 presents the growth of fair value assets and liabilities in the three levels from 2009 to 2012. The average level 2 fair value assets increase from 14% of the total assets in the year 2009 to about 18% of the total assets in the year 2012. The average level 1 fair value assets decrease slightly from 2009 to 2012. Level 3 fair value assets and three level fair value liabilities stay constant across the years.

Insert Figure 2

5.2 Earnings change distributions

Following Burgstahler and Dichev (1997) and Beatty et al. (2002), I examine the distributions of change in return on assets in my sample. The bin width is calculated following the approach in Degeorge et al. (1999). They suggest "a bin width positively related to the variability of the data and negatively related to the number of observations" (Degeorge et al. 1999, p. 18). I calculate the bin width as $2M\ (n^{-1/3})$, where M is the sample interquartile range of the ΔROA and n is the sample size. The bin width in this study is 0.0007. Bin(0) indicates an earnings change ranges between 0 and 0.0007 and bin(-1) indicates an earnings change ranges between -0.0007 and 0. In the logistic regression test, I use twice the bin width to indicate a small increase in return on assets. Figure 3 panel A plots the distributions of change in return on assets for the low fair value sample (on the top of the panel) and the high fair value sample (on the bottom of the panel). There are 1,448 bank-year observations with fair values above the median of earnings changes each year and 1,448 bank-year observations with fair values below the median. The distribution of the low fair value sample is smoother than the high fair value

sample around bin(0). There is a discontinuity of the distribution of Δ*ROA* around zero for the high fair value sample, shown as unexpectedly high frequency of bank-years in bin(0) and unexpectedly low frequency of bank-years in bin(-1), but such discontinuity around zero is less apparent for the low fair value sample, suggesting that there are a larger proportion of bank-years reporting small increases in return on assets for the high fair value sample than the low fair value sample.

Figure 3 panel B compares distributions of Δ*ROA* between the high level 2 fair value banks and the low level 2 fair value banks. Panel C compares distributions of Δ*ROA* between the banks with large amounts of available-for-sale assets and banks with small amounts of available-for-sale assets. Similar to panel A, there is a larger kink around bin(0) in the distribution of earnings changes for the banks with high level 2 fair values or for banks with large amounts of available-for-sale assets.

Panels D and E compare distributions of Δ*ROA* between the high level 1 (level 3) fair value banks and the low level 1 (level 3) fair value banks. It can be observed that the distribution of change in return on assets for both subsamples have apparent discontinuities around bin(0), indicating that level 1 and level 3 fair values are less likely to be managed to beat prior year earnings targets.

Insert Figure 3

5.3 Univariate tests

Table 3 presents the Pearson correlation coefficients among main variables used in the logistic regression models. The correlation between Δ*ROAINC* and *FV* is 0.062 and significant at the 1% level. The correlation between Δ*ROAINC* and *HFV* is 0.076 and significant at the 1% level. Δ*ROAINC* is positively correlated with *L2FV* and *L2HFV*. The correlation coefficients are

0.095 and 0.062 respectively and both are significant at the 1% level. The correlations between *DLLP* and Δ*ROAINC* are significantly negative (-0.075) implying that low discretionary loan loss provisions are correlated with small earnings increases. The variables *FV, L2FV, HFV, and L2HFV* are negatively correlated with *DLLP* and positively correlated with *DRSGL* and RSGL, suggesting that high fair value banks, especially high level 2 fair value banks are more likely to inflate earnings through discretionary loan loss provisions, discretionary security gains and losses and realized security gains and losses.

Insert Table 3

Table 4 reports standardized differences in bin(-1) and bin(0) between the high fair value sample and the low fair value sample, similar to the analysis in Beatty et al. (2002).[10] The standardized difference in bin(-1) is more negative for the high fair value sample (-4.094) than the low fair value sample (-3.717) and the standardized difference in bin(0) is significantly more positive for the high fair value sample (4.692) than the low fair value sample (2.385). The standardized difference in bin(-1) is more negative for the high level 2 fair value sample (-4.075) than the low level 2 fair value sample (-3.835) and the standardized difference in bin(0) is significantly more positive for the high level 2 fair value sample (5.070) than the low fair value sample (1.986). The standardized difference in bin(-1) is more negative for the sample with more available-for-sale assets (-4.179) than the sample with less available-for-sale assets (-3.776) and the standardized difference in bin(0) is significantly more positive for the sample with more available-for-sale assets (5.294) than the sample with less available-for-sale assets (1.597). The results above show that there are unexpectedly more bank-years reporting small earnings increases and unexpectedly less bank-years reporting small earnings decreases in the high fair

[10] Standardized difference of a bin is calculated as the difference between the actual frequency of bank-years observed in a bin and the expected frequency of bank-years in a bin divided by the standard deviation of the differences. The expected frequency of bank-years in a bin is the average of the frequencies in the bin on the left and the bin on the right.

value sample, high level 2 fair value sample and the sample with more available-for-sale assets than in the low fair value sample, low level 2 fair value sample and the sample with less available-for-sale assets. Panels D and F show that the standardized differences in bin(-1) and in bin(0) are not different between the high level 1(level 3) fair value sample and the low level 1(level 3) fair value sample.

Table 4 panel F tests the significance of kinks around bin(0) shown in figure 3. I calculate the kink as the difference in percent of bank-years between bin(0) and bin(-1).[11] A larger number indicates a bigger kink. The difference in percent of bank-years between bin(0) and bin(-1) is 6.96% for the high fair value subsample, which is significantly higher than the difference in percent for the low fair value subsample. In other words, the kink around bin(0) of the high fair value banks is significantly bigger than the kink for the low fair value banks. Similarly, the kinks around bin(0) of the high level 2 fair value banks and banks with more available-for-sale assets are significantly bigger than the kinks of the low level 2 fair value banks and banks with less available-for-sale assets. In contrast, there is no significant difference between the kink around bin(0) for the high level 1(level 3) fair value banks and the kink of low level 1(level 3) fair value banks. Taken together, we observe more bank-years just beating prior year earnings targets in the subsample with high fair values, high level 2 fair values and more available-for-sale assets.

Insert Table 4

5.4 Multivariate tests

5.4.1 Discretionary loan loss provisions and discretionary security gains and losses

The estimation results of discretionary loan loss provisions and discretionary security gains and losses are presented in table 5. The second column presents the estimation result of

[11] I calculate this difference for each two adjacent bins. The significance of a kink around zero is calculated as the difference in percent of bank-years between bin(0) and bin(-1) divided by the standard deviation of the differences.

discretionary loan loss provisions. The model has an adjusted R-square equal to 41.8%. Loan loss provisions can be predicted by factors such as bank size, change in nonperforming loans, loan loss reserves at the beginning of the year, and size for different types of loans. The coefficients on ΔNPL and LLR are 0.209 and 0.721 ($p<0.001$), suggesting that banks which increase nonperforming loans during the year and have a large loan loss reserve at the beginning of the year report larger loan loss provisions. Loan loss provisions are also positively and significantly associated with bank size. The third column presents the estimation result of discretionary security gains and losses. The model has an adjusted R-square equal to 21.3%. The coefficient of total security gains and losses is positive and significant at the 1% level. Overall, the estimated results are consistent with discretionary loan loss provision models and discretionary security gains and losses models in prior research (e.g., Beatty and Harris 1999; Beatty et al. 2002; Beaver and Engel 1996).

Insert Table 5

5.4.2 The association between small earnings increases and fair value measurements

Table 6 reports the logistic regression results of the likelihood of reporting small earnings increases on fair value variables. The dependent variable $\Delta ROAINC$ is equal to 1 if ΔROA of a bank falls between 0 (inclusive) and 0.0014 (exclusive), and 0 otherwise. There are 2,896 bank-year observations used in the regressions, including 552 observations with ΔROA in the interval [0, 0.0014) and 2,344 observations outside the interval. In the first model, the estimated coefficient on FV is positive ($\beta_2 = 0.972$) and significant ($p = 0.011$), suggesting that banks reporting more fair value assets and liabilities are more likely to report small earnings increases. This finding supports the first hypothesis. The coefficient on ΔNPL is negative ($\beta_6 = -14.007$) and significant ($p = 0.000$), suggesting that banks which increase nonperforming loans are less

likely to report small earnings increases. Banks which increase real estate loans are more likely to report small earnings increases, consistent with the notion that banks which increase real estate loans are more likely to manage earnings during the financial crisis. *DLLP* is negatively (β_{13} = -17.470) and significantly (p<0.001) associated with the likelihood that a bank reports small earnings increases, which is consistent with the notion that banks manage earnings upward to avoid earnings decline by charging lower discretionary loan loss provisions (Beatty et al. 2002).

In the second model, I examine the impact of the three levels of fair values separately. The pseudo R-square is 7.2%. The coefficient on *L1FV* is positive but insignificant, consistent with the contention that managers have little discretion over level 1 fair values because the inputs of level 1 assets and liabilities are directly observable from active markets. Consistent with my second hypothesis, the coefficient on *L2FV* is positive (β_3 = 1.868) and significant (p = 0.000), indicating that banks reporting large level 2 fair value assets and liabilities are more likely to manage earnings to avoid earnings declines. The coefficient on *L3FV* is negative and insignificant (β_4 = -4.382). Level 3 fair values account for a very small proportion of the total fair values, so the positive association between small earnings increases and total fair values is likely driven by the level 2 fair values. Similar to the first model, Δ*NPL* and *DLLP* are both negative and significantly associated with the likelihood that a bank reports small earnings increases (β_8 = -14.153, β_{15} = -16.849). The coefficient of Δ*LOANR* is positive and significant at the 1% level.

In model 3, I replace *FV* with a dummy variable *HFV.* In model 4, I replace *L1FV, L2FV* and *L3FV* with three dichotomous variables *L1HFV, L2HFV* and *L3HFV*. The results are qualitatively unchanged. The results in table 6 indicate that banks which report larger fair value

assets and liabilities, especially larger level 2 fair value assets and liabilities, are more likely to manage earnings in terms of reporting small earnings increases, after controlling for discretionary loan loss provisions, discretionary security gains and losses, and other bank-specific characteristics.

Insert Table 6

Change in fair value of some assets may affect future earnings, e.g., available-for-sale assets. Table 7 presents the logistic regression results of small earnings increases one-year ahead on fair value variables. Similar to table 6, coefficients on *L2FV, HFV* and *L2HFV* are positive and significant. The coefficient on *FV* is positive and insignificant. In panel B, coefficients on *RSGL* are positive and significant, suggesting that realized security gains and losses are positively associated with small earnings increases one-year ahead.

Insert Table 7

Table 8 and table 9 document the logistic regression results of small earnings increases in the current year and one-year ahead on changes in fair value assets and liabilities. Changes in fair values capture both changes in assets and liabilities reported at fair value and changes in fair values of the incumbent assets and liabilities. The variable *ΔFV* is defined as change in total fair value of assets and liabilities divided by the total assets at the beginning of the prior year. The variables *ΔL1FV*, *ΔL2FV* and *ΔL3FV* are calculated as change in fair value assets and liabilities in each level divided by total assets at the beginning of the prior year. Overall, change in fair values is positively and significantly associated with small earnings increases in the current year. Change in level 2 fair values is positively and significantly associated with small earnings increases both in the current year and one-year ahead. The results suggest that banks reporting

increases in fair values, especially increases level 2 fair values, are more likely to report small earnings increases both in the current year and one-year ahead.

Insert Table 8

Insert Table 9

In table 10 and table 11, I examine the association between small earnings increases and different types of fair value assets and liabilities. Starting from the year 2009, all banks are required to complete Schedule HC-Q, Financial Assets and Liabilities Measured at Fair Value of the call form. Banks need to report the dollar amount in loans, trading assets, available-for-sale assets, Federal funds securities, deposits, trading liabilities, loan commitments, and all other assets and liabilities are reported at fair value. Based on the reporting requirement of Schedule HC-Q, I classify fair value assets into five categories: loans, trading assets, available for sale assets, Fed funds purchased, and all other assets. I classify fair value liabilities into three categories: deposits, trading liabilities, and other liabilities. For each category within each level, I calculate the percentage of total assets reported at fair value. In table 10, I control for discretionary security gains and losses and realized security gains and losses respectively. In table 11, I decompose realized security gains and losses into the portion on available-for-sale assets and the other portion on held-to-maturity assets. The most interesting result documented in table 10 and table 11 is that level 2 available-for-sales assets are positively and significantly associated with small earnings increases in both the current year and one-year ahead. This result shows that the positive association between level 2 fair values and small earnings increases is primarily driven by available-for-sale assets. This result is consistent with the evidence provided in Barth et al. (2012). In addition, coefficients on *L2TRADEA* are positive and significant at the 1%

level in the models of one-year ahead small earnings increases, which provides evidence that banks beat prior year earnings targets by managing change in the fair value of trading assets.

In order to test if the positive effect of available-for-sale assets is associated with realized gains and losses on available-for-sale assets, I decompose realized gains and losses into realized gains and losses on available-for-sale assets and realized gains and losses on held-to-maturity assets. Then I compared the factor loading of *RSGL_AFS* with and without *L2AFS* in the model. The results are documented in table 11. The first two models show that when the dependent variable is small earnings increases in the current year, the coefficient on *RSGL_AFS* increases from 16.553 to 40.054 and the p-value decreases from 0.543 to 0.167. The last two models show that when the dependent variable is small earnings increases one-year ahead, the coefficient on *RSGL_AFS* increases from 40.486 to 55.411 and the p-value decreases from 0.175 to 0.075 (significant at the 10% level). The results imply that the positive effect of level 2 available-for-sale assets is partially associated with realized gains and losses on available-for-sale assets.

Insert Table 10

Insert Table 11

5.5 Additional tests

5.5.1 Earnings management through discretionary loan loss provisions and discretionary security gains and losses

In the additional tests, I first compare the discretionary accounting choices of bank-year observations with small changes in return on assets before *DLLP* or *DRSGL* between the high fair value sample and the low fair value sample, similar to Beatty et al. (2002). The univariate test results are presented in table 12. Panel A compares the discretionary loan loss provisions of bank-years which have small earnings changes before *DLLP* between the two groups. In the high

fair value sample, there are 138 bank-year observations with small negative earnings changes, defined as Δ*ROA* before *DLLP* in bin(-2) and bin(-1), and 136 bank-year observations with small positive earnings changes, defined as Δ*ROA* before *DLLP* in bin(0) and bin(1). In the low fair value sample, there are 111 bank-year observations with small negative earnings changes and 139 bank-year observations with small positive earnings changes.

In the high fair value sample, the bank-years with small negative earnings changes before *DLLP* (left top cell) have more negative discretionary loan loss provisions on average than the bank-years with small positive earnings changes before *DLLP* (right top cell). The mean values are significantly different at the 1% level. In the low fair value sample, the bank-years with small negative earnings changes before *DLLP* (left bottom cell) have smaller discretionary loan loss provisions on average than the bank-years with small positive earnings changes before *DLLP* (right bottom cell), however the mean values are not significantly different. For the bank-year observations with small negative earnings changes before *DLLP*, the high fair value group (left top cell) experiences more negative discretionary loan loss provisions on average than the low fair value group (left bottom cell). The mean values of *DLLP* are -0.0026 and -0.0006 respectively and the t-statistic of the difference is significant at the 5% level. For the bank-year observations with small positive earnings changes before *DLLP*, the mean *DLLP* of the high fair value banks (right top cell) is not significantly different from the low fair value banks (right bottom cell).

Table 12 panel B documents the results of the same analysis for discretionary security gains and losses. In the high fair value sample, there are 155 bank-year observations with small negative earnings changes, defined as Δ*ROA* before *DRSGL* in bin(-2) and bin(-1), and 218 bank-year observations with small positive earnings changes, defined as Δ*ROA* before *DRSGL* in

bin(0) and bin(1). In the low fair value sample, there are 136 bank-year observations with small negative earnings changes and 196 bank-year observations with small positive earnings changes *DRSGL*. In the high fair value sample, the bank-years with small negative earnings changes before *DRSGL* (left top cell) have larger discretionary security gains and losses on average than the bank-years with small positive earnings changes before *DRSGL* (right top cell). The mean values are significantly different at the 1% level. For the bank-year observations with small negative earnings changes before *DRSGL*, the high fair value group (left top cell) has larger discretionary security gains and losses on average than the low fair value group (left bottom cell). The mean values of *DRSGL* are 0.0004 and 0.0000 respectively and the t-statistic of the difference is significant at the 5% level. For the bank-year observations with small positive earnings changes before *DRSGL*, the high fair value group (right top cell) is insignificantly different from the low fair value group (right bottom cell) in terms of discretionary security gains and losses.

In summary, the results in table 12 show that the high fair value banks are more likely to manage earnings upward by choosing more negative discretionary loan loss provisions and more positive discretionary security gains and losses than the low fair value banks.

Insert Table 12

5.5.2 Upward earnings management and downward earnings management

Earnings management has two directions. Banks missing the earnings targets before earnings management have incentives to inflate earnings to beat the targets while other banks that have already met the targets have an incentive to deflate earnings to save for the next period (Degeorge et al. 1999). In table 13, I examine whether the upward and downward earnings management are associated with high fair values. In the first two models, I use two dichotomous

variables to further capture bank-years which are most likely to manage earnings upward. I define a new variable *EM_UP1* to equal one if a bank reports negative earnings changes before *DLLP* ($\Delta ROA<0$), and reports small positive earnings changes after *DLLP* ($0\leq \Delta ROA<0.0014$), and zero otherwise. Similarly, the dependent variable in the second model *EM_UP2* is an indicator variable equal to one if a bank has an earnings decrease before *DRSGL* and reports a small earnings increase after *DRSGL*, and zero otherwise. In the third model, the dependent variable *EM_DN1* is an indicator variable equal to one if a bank has large earnings increases before *DLLP* ($\Delta ROA>=0.0014$) but reports small earnings increases after *DLLP* ($0\leq \Delta ROA<0.0014$), and zero otherwise. In the last model, the dependent variable *EM_DN2* is an indicator variable equal to one if a bank has large earnings increases before *DRSGL* but reports small earnings increases after *DRSGL*, and zero otherwise. I replace $\Delta ROAINC$ with *EM* and re-do the multivariate analyses.

Table 13 presents the logistic regression results of both upward earnings management and downward earnings management on fair value measurements. The pseudo-R squares range from 13.2% to 18.8%. In the first two models, the coefficients on *L2FV* are positive (β = 2.140 and 2.696 respectively) and significant at the 1% level. Neither *L1FV* nor *L3FV* has a significant coefficient. In the third model, the coefficients on *L1FV* and *L2FV* are insignificant and the coefficient on *L3FV* is negative and significant at the 5% level. In the last model, the coefficient on *L2HFV* is positive and significant at the 1% level. The results in table 13 suggest that banks which report high level 2 fair values are more likely to manage earnings upward or to manage earnings downward through discretionary security gains and losses.

Insert Table 13

5.5.3 Public banks and private banks

Public banks have an incentive to manage earnings because markets penalize those firms which miss earnings targets. Private banks may also have an incentive to beat earnings targets in order to secure contracts or to reduce their financing cost. In table 6, I control for different types of banks but do not find a significant difference between public banks and private banks in terms of reporting small earnings increases. In table 14, I examine the association between small earnings increases and fair value variables in the subsample of public banks and in the subsample of private banks separately. The results are similar to the main results. The coefficients on *L2FV* and *L2HFV* are positive and significant in both public banks and private banks, which suggests that the positive association between fair values and small earnings increases is not driven by the difference between public banks and private banks. This is consistent with Barth et al. (2012) which finds earnings management and capital management in both listed and non-listed banks.

Insert Table 14

5.5.4 Net changes in fair values included in earnings for banks which elect fair value options

I examine the factors which determine the net changes in fair values recognized in earnings. Per FR Y-9C, bank holding companies are required to report net gains or losses recognized in earnings if they elect to account for assets and liabilities under a fair value option (SFAS 159). The amounts reflect "reported interest included in interest income and revaluation adjustment included in noninterest income" (Instructions for Preparation of Reporting Form FR Y-9C, p. HI-27). The assets and liabilities elected to be reported at fair value under a fair value option do not include those assets and liabilities which are required to be recognized at fair value in other accounting standards. For example, Wells Fargo and Company elected fair value option to measure certain mortgages held for sale, loans, and consolidated VIEs in the year 2012. Assets

and liabilities such as trading assets and available-for-sale securities are regulated in SFAS 115, so they are excluded from fair value assets and liabilities under a fair value option. In my sample, only 324 bank-years elected the fair value option and recognized gains and losses in earnings. The variable *NCFV* is the net gains or losses on assets and liabilities reported in Schedule HI divided by the total assets at the beginning of the year. The mean value of *NCFV* is 0.02% and the maximum value of *NCFV* is only 1.4%. Table 15 presents the logistic regression results of small earnings increases on fair value variables in a subsample of 324 bank-years which elect the fair value option. None of the fair value variables is significant.[12] Table 16 presents the OLS regression results of net changes in fair values. The independent variable *IBFV* is the earnings before net changes in fair values, measured as net income minus net changes in fair values divided by total assets at the beginning of the year. The independent variable *CAPITAL_FVO* is total risk-based capital before net change in fair values deflated by total assets at the beginning of the year. I include *CAPITAL_FVO* in the model to examine whether net changes in fair values are associated with capital management. Other variables are defined as before. The adjusted R-square is 17.5%. The coefficient on *IBFV* is -0.035 and significant at the 5% level, suggesting that banks with lower earnings before *NCFV* would recognize larger *NCFV* into earnings and banks with higher earnings before *NCFV* would recognize smaller *NCFV* into earnings. This result suggests that the net changes in fair values recognized in earnings under fair value options are used to smooth earnings. Level 2 fair value assets are positively associated with *NCFV*, while fair value liabilities are negatively associated with *NCFV*. Discretionary loan loss provisions are negatively associated with *NCFV*, suggesting that fair values and discretionary loan loss

[12] I manually collected level 3 gains and losses from 10Ks for 276 public banks in 2009-2012. There are 475 bank-years with nonzero level 3 gains and losses. I test the association between small earnings increases and fair value measurements in a subsample of these 475 bank-years. The coefficient on *L3HFV* is negative and significant at 1% level. Overall fair value variables and level 2 fair value variables are all insignificant.

provisions are complementary techniques to manage earnings. The coefficient on *CAPITAL_FVO* is insignificant, implying that net changes in fair values are not significantly associated with capital management. Table 15 and table 16 together suggest that bank-years which elect fair value options manage change in fair values to smooth earnings; however, they cannot explain the phenomenon of beating prior year earnings targets.[13]

Insert Table 15

Insert Table 16

5.5.5 Bank-years which recognize non-zero realized gains and losses on available-for-sale assets

Table 17 documents the logistic regression results in a subsample of bank-years which recognize non-zero realized gains and losses on available-for-sale assets. The results are similar to the main test results in table 6. The coefficients on *L2FV, L2HFV* and *ΔL2FV* are 2.186, 0.330 and 2.117. They are all significant at 1% level.

Insert Table 17

5.5.6 Association between earnings volatility and fair value variables

Finally, I examine the association between reported earnings volatility and fair value measurements. The dependent variable *Volatility* is calculated as the standard deviation of quarterly *ROA* from 2009 to 2012 for each bank. This variable is regressed on bank type, fair value variables, bank size and bank leverage. I expect that banks measuring more assets and liabilities at fair value, especially level 2 fair values, report smoother earnings. Therefore, I expect that the coefficient on *FV, L2FV, HFV* and *L2HFV* are negative and significant. The results show that *FV, L2FV, HFV* and *L2HFV* are negatively and significantly associated with earnings volatility, consistent with my prediction. The coefficients on *L3FV* and *L3HFV* are

[13] This could be due to the small sample size and small magnitude of net changes in fair values included in earnings. The likelihood ratios of the regressions are small and p-values show that the overall models are insignificant in this small sample.

positive and significant, suggesting that banks reporting more level 3 fair value assets and liabilities have more volatile earnings

Insert Table 18

6. Conclusions

This study examines the association between fair value measurements and earnings management using regulatory financial data from 2009 to 2012 for a sample of U.S. public and private bank holding companies. Following the methodology in Beatty et al. (2002), I find that banks recognizing more recurring basis fair value assets and liabilities, especially more level 2 fair value assets and liabilities and banks reporting increased level 2 fair value assets and liabilities are more likely to report small earnings increases after controlling for discretionary loan loss provisions, discretionary security gains and losses, and other bank-specific characteristics. By decomposing fair values into different types, I find that banks recognizing large amounts of available-for-sale assets are more likely to report small earnings increases. This association is partially driven by realized gains and losses on available-for-sale assets. I also distinguish upward earnings management from downward earnings management. The results show that level 2 fair values are positively associated with both upward and downward earnings management through discretionary security gains and losses but are not associated with downward earnings management through discretionary loan loss provisions.

In addition, I investigate bank-years which report small earnings changes before discretionary loan loss provisions or before discretionary security gains and losses in the high fair value sample and in the low fair value sample respectively. The results suggest that high fair value bank-years are more likely to manage earnings upward to beat prior year earnings targets by reducing the discretionary loan loss provisions or increasing discretionary security gains and

losses. By examining the factors which determine the net changes in fair values recognized in earnings, I find that net changes in fair values recognized in earnings are negatively associated with the income before net changes in fair values, which is consistent with earnings smoothing. Finally, I examine the association between earnings volatility and fair value variables and find that overall fair values and level 2 fair values are negatively associated with earnings volatility while level 3 fair values are positively associated with earnings volatility. The results imply that banks with high overall fair values or high level 2 fair values are more likely to report smoother earnings.

APPENDICES

Appendix A: Definition of Variables

Variables	Definitions
Dependent variables	
ΔROAINC	a dichotomous variable equal to one if the firm has ΔROA between 0 (inclusive) and 0.0014 (exclusive), an earnings range defining small earnings increases, and zero otherwise; where ΔROA is defined as current year's net income minus previous year's net income, divided by total assets at the beginning of the previous year
EM_UP1	an indicator variable equal to one if a bank-year observation reports a negative earning change before discretionary loan loss provisions (ΔROA<0), and reports a small positive earning change after discretionary loan loss provisions (0≤ ΔROA<0.0014), and zero otherwise
EM_UP2	an indicator variable equal to one if a bank has an earnings decrease before discretionary security gains and losses and reports a small earnings increase after discretionary security gains and losses, and zero otherwise
EM_DN1	an indicator variable equal to one if a bank has a large earnings increase before discretionary loan loss provisions (ΔROA>=0.0014) but reports a small earnings increase after discretionary loan loss provisions (0≤ ΔROA<0.0014), and zero otherwise
EM_DN2	an indicator variable equal to one if a bank has a large earnings increase before discretionary security gains and losses but reports a small earnings increase after discretionary security gains and losses, and zero otherwise
NCFV	net recognized gains and losses on assets and liabilities elected for fair value options, divided by total assets at the beginning of the year
Volatility	Standard deviation of quarterly ROA from 2009Q1 to 2012Q4, quarterly ROA is calculated as quarterly net income deflated by the beginning of the quarter total assets
Fair value variables	
FV	the sum of total fair value assets and total fair value liabilities divided by the total assets at the

	beginning of the year
L1FV	the sum of level 1 fair value assets and level 1 fair value liabilities divided by the total assets at the beginning of the year
L2FV	the sum of level 2 fair value assets and level 2 fair value liabilities divided by the total assets at the beginning of the year
L3FV	the sum of level 3 fair value assets and level 3 fair value liabilities divided by the total assets at the beginning of the year
HFV	a dichotomous variable equal to one if FV of a bank is greater than or equal to the median of a year, and zero otherwise
L1HFV	a dichotomous variable equal to one if L1FV of a bank is greater than or equal to the median of a year, and zero otherwise
L2HFV	a dichotomous variable equal to one if L2FV of a bank is greater than or equal to the median of a year, and zero otherwise
L3HFV	a dichotomous variable equal to one if L3FV of a bank is greater than or equal to the median of a year, and zero otherwise
ΔFV	change in total fair value assets and liabilities
ΔL1FV	change in level 1 fair value assets and liabilities
ΔL2FV	change in level 2 fair value assets and liabilities
ΔL3FV	change in level 3 fair value assets and liabilities
L1LOAN	Level 1 Loans and leases measured at fair value divided by the total assets at the beginning of the year
L2LOAN	Level 2 Loans and leases measured at fair value divided by the total assets at the beginning of the year
L3LOAN	Level 3 Loans and leases measured at fair values divided by the total assets at the beginning of the year
L1TRADEA	Level 1 trading assets divided by the total assets at the beginning of the year
L2TRADEA	Level 2 trading assets divided by the total assets at the beginning of the year
L3TRADEA	Level 3 trading assets divided by the total assets at the beginning of the year
L1AFS	Level 1 available-for-sale securities divided by the total assets at the beginning of the year
L2AFS	Level 2 available-for-sale securities divided by the total assets at the beginning of the year
L3AFS	Level 3 available-for-sale securities divided by the total assets at the beginning of the year

L1FED	Level 1 Federal funds sold and securities divided by the total assets at the beginning of the year
L2FED	Level 2 Federal funds sold and securities divided by the total assets at the beginning of the year
L3FED	Level 3 Federal funds sold and securities divided by the total assets at the beginning of the year
L1OTHERA	Level 1 other assets measured at fair value divided by the total assets at the beginning of the year
L2OTHERA	Level 2 other assets measured at fair value divided by the total assets at the beginning of the year
L3OTHERA	Level 3 other assets measured at fair value divided by the total assets at the beginning of the year
L1DEPOSIT	Level 1 deposits divided by the total assets at the beginning of the year
L2DEPOSIT	Level 2 deposits divided by the total assets at the beginning of the year
L3DEPOSIT	Level 3 deposits divided by the total assets at the beginning of the year
L1TRADEL	Level 1 trading liabilities divided by the total assets at the beginning of the year
L2TRADEL	Level 2 trading liabilities divided by the total assets at the beginning of the year
L3TRADEL	Level 3 trading liabilities divided by the total assets at the beginning of the year
L1OTHERL	all other level 1 liabilities measured at fair value divided by the total assets at the beginning of the year, including federal funds purchases and securities, other borrowed money, subordinated notes and debentures, etc.
L2OTHERL	all other level 2 liabilities measured at fair value divided by the total assets at the beginning of the year, including federal funds purchases and securities, other borrowed money, subordinated notes and debentures, etc.
L3OTHERL	all other level 3 liabilities measured at fair value divided by the total assets at the beginning of the year, including federal funds purchases and securities, other borrowed money, subordinated notes and debentures, etc.
Control variables	
PUBLIC	a dichotomous variable equal to one if a bank is a public bank, and zero otherwise[14]
Log (ASSET)	natural log of total assets
ΔASSET	change in total assets
LEVERAGE	total liabilities divided by total assets at the beginning of the year

[14] I use a CRSP-FRB LINK dataset to identify publicly traded banks which have PERMCOs in CRSP. I randomly select 20 banks and manually check if they file 10-Ks with the SEC to make sure my classification of public banks is correct.

ΔCF	change in cash flows, divided by total assets at the beginning of the year, where cash flow is calculated as the total of net income plus loan loss provisions and non-interest expenses
ΔNPL	change in nonperforming loans, divided by the average of beginning and ending total loans
ΔLOANR	change in the real estate loans, divided by total loans at the beginning of the year
ΔLOANC	change in the commercial loans, divided by total loans at the beginning of the year
ΔLOAND	change in the depository institution loans, divided by total loans at the beginning of the year
ΔLOANA	change in the loans to agricultural productions, divided by total loans at the beginning of the year
ΔLOANI	change in the loans to households and individuals, divided by total loans at the beginning of the year
ΔLOANO	change in other loans, including the loans to foreign governments, divided by total loans at the beginning of the year
DLLP	discretionary loan loss provision estimated from equation (1)
DRSGL	discretionary realized security gains and losses estimated from equation (2)
IBFV	net income minus net change in fair values of assets and liabilities elected for fair value option recognized in earnings, divided by total assets at the beginning of the year
CAPITAL_FVO	total risk-based capital before recognized net gains and losses measured at fair value option, divided by total assets at the beginning of the year
Variables used to estimate DLLP and DRSGL	
LLP	loan loss provision divided by the average of beginning and ending total loans
LLR	loan loss reserve at the beginning of the year divided by the ending total loans
LOANR	real estate loans divided by total loans
LOANC	commercial loans divided by total loans
LOAND	loans to depository institution loans divided by total loans
LOANA	loans to agricultural productions divided by total loans
LOANI	loans to households and individuals divided by total loans
LOANO	Other loans, including loans to foreign governments, divided by total loans
RSGL	realized security gains and losses divided by total assets at the beginning of the year
TSGL	total security gains and losses, measured by the sum of realized security gains and losses and unrealized security gains and losses, divided by total assets at the beginning of the year

Appendix B: Consolidated Financial Statements for Bank Holding Companies FR Y-9C

Schedule HC-Q—Assets and Liabilities Measured at Fair Value on a Recurring Basis

Schedule HC-Q is to be completed by all bank holding companies.

Dollar Amounts in Thousands	(Column A) Total Fair Value Reported on Schedule HC				(Column B) LESS: Amounts Netted in the Determination of Total Fair Value				(Column C) Level 1 Fair Value Measurements				(Column D) Level 2 Fair Value Measurements				(Column E) Level 3 Fair Value Measurements				
		Bil	Mil	Thou	BHCK	Bil	Mil	Thou	BHCK	Bil	Mil	Thou	BHCK	Bil	Mil	Thou	BHCK	Bil	Mil	Thou	
ASSETS	bhcy																				
1. Available-for-sale securities	1773				G474				G475				G476				G477				1.
2. Federal funds sold and securities purchased under agreements to resell	BHCK																				
	G478				G479				G480				G481				G482				2.
3. Loans and leases held for sale	G483				G484				G485				G486				G487				3.
4. Loans and leases held for investment	G488				G489				G490				G491				G492				4.
5. Trading assets:	bhct																				
a. Derivative assets	3543				G493				G494				G495				G496				5.a.
	BHCK																				
b. Other trading assets	G497				G498				G499				G500				G501				5.b.
(1) Nontrading securities at fair value with changes in fair value reported in current earnings (included in Schedule HC-Q, item 5.b, above)	F240				F684				F692				F241				F242				5.b.(1)
6. All other assets	G391				G392				G395				G396				G804				6.
7. Total assets measured at fair value on a recurring basis	G502				G503				G504				G505				G506				7.
LIABILITIES																					
8. Deposits	F252				F686				F694				F253				F254				8.
9. Federal funds purchased and securities sold under agreements to repurchase	G507				G508				G509				G510				G511				9.
10. Trading liabilities:	bhct																				
a. Derivative liabilities	3547				G512				G513				G514				G515				10.a.
	BHCK																				
b. Other trading liabilities	G516				G517				G518				G519				G520				10.b.
11. Other borrowed money	G521				G522				G523				G524				G525				11.
12. Subordinated notes and debentures	G526				G527				G528				G529				G530				12.
13. All other liabilities	G805				G806				G807				G808				G809				13.
14. Total liabilities measured at fair value on a recurring basis	G531				G532				G533				G534				G535				14.

Appendix C: Fair Value Measurements Disclosure in 10-K of WELLS FARGO & COMPANY

(in millions)	Level 1	Level 2	Level 3		Netting	Total
31-Dec-12						
Trading assets (excluding derivatives)						
Securities of U.S. Treasury and federal agencies	**5,104**	**3,774**	**-**		**-**	**8,878**
Securities of U.S. states and political subdivisions	**-**	**1,587**	**46**		**-**	**1,633**
Collateralized debt obligations (1)	**-**	**-**	**742**		**-**	**742**
Corporate debt securities	**-**	**6,664**	**52**		**-**	**6,716**
Mortgage-backed securities	**-**	**13,380**	**6**		**-**	**13,386**
Asset-backed securities	**-**	**722**	**138**		**-**	**860**
Equity securities	**3,481**	**356**	**3**		**-**	**3,840**
Total trading securities (2)	**8,585**	**26,483**	**987**		**-**	**36,055**
Other trading assets	**2,150**	**887**	**76**		**-**	**3,113**
Total trading assets (excluding derivatives)	**10,735**	**27,370**	**1,063**		**-**	**39,168**
Securities of U.S. Treasury and federal agencies	**915**	**6,231**	**-**		**-**	**7,146**
Securities of U.S. states and political subdivisions	**-**	**35,045**	**3,631**	-3	**-**	**38,676**
Mortgage-backed securities:						
Federal agencies	**-**	**97,285**	**-**		**-**	**97,285**
Residential	**-**	**15,837**	**94**		**-**	**15,931**
Commercial	**-**	**19,765**	**203**		**-**	**19,968**
Total mortgage-backed securities	**-**	**132,887**	**297**		**-**	**133,184**
Corporate debt securities	**125**	**20,934**	**274**		**-**	**21,333**
Collateralized debt obligations (4)	**-**	**-**	**13,188**	-3	**-**	**13,188**
Asset-backed securities:						
Auto loans and leases	**-**	**7**	**5,921**	-3	**-**	**5,928**
Home equity loans	**-**	**867**	**51**		**-**	**918**
Other asset-backed securities	**-**	**7,828**	**3,283**	-3	**-**	**11,111**

Total asset-backed securities	**-**	**8,702**	**9,255**		**-**	**17,957**
Other debt securities	**-**	**930**	**-**		**-**	**930**
Total debt securities	**1,040**	**204,729**	**26,645**		**-**	**232,414**
Marketable equity securities:						
Perpetual preferred securities (5)	**629**	**753**	**794**	-3	**-**	**2,176**
Other marketable equity securities	**554**	**55**	**-**		**-**	**609**
Total marketable equity securities	**1,183**	**808**	**794**		**-**	**2,785**
Total securities available for sale	**2,223**	**205,537**	**27,439**		**-**	**235,199**
Mortgages held for sale	**-**	**39,055**	**3,250**		**-**	**42,305**
Loans held for sale	**-**	**6**	**-**		**-**	**6**
Loans	**-**	**185**	**6,021**		**-**	**6,206**
Mortgage servicing rights (residential)	**-**	**-**	**11,538**		**-**	**11,538**
Derivative assets:						
Interest rate contracts	**16**	**70,277**	**1,058**		**-**	**71,351**
Commodity contracts	**-**	**3,386**	**70**		**-**	**3,456**
Equity contracts	**432**	**2,747**	**604**		**-**	**3,783**
Foreign exchange contracts	**19**	**5,481**	**24**		**-**	**5,524**
Credit contracts	**-**	**1,160**	**650**		**-**	**1,810**
Other derivative contracts	**-**	**-**	**-**		**-**	**-**
Netting	**-**	**-**	**-**		**-62,108**	-6 **-62,108**
Total derivative assets (7)	**467**	**83,051**	**2,406**		**-62,108**	**23,816**
Other assets	**136**	**123**	**162**		**-**	**421**
Total assets recorded at fair value	**13,561**	**355,327**	**51,879**		**-62,108**	**358,659**
Derivative liabilities:						
Interest rate contracts	**-52**	**-68,244**	**-399**		**-**	**-68,695**
Commodity contracts	**-**	**-3,541**	**-49**		**-**	**-3,590**
Equity contracts	**-199**	**-3,239**	**-726**		**-**	**-4,164**
Foreign exchange contracts	**-23**	**-3,553**	**-3**		**-**	**-3,579**

Credit contracts	**-**	**-1,152**	**-1,800**	**-**		**-2,952**
Other derivative contracts	**-**	**-**	**-78**	**-**		**-78**
Netting	**-**	**-**	**-**	**71,116**	-6	**71,116**
Total derivative liabilities (7)	**-274**	**-79,729**	**-3,055**	**71,116**		**-11,942**
Short sale liabilities:						
Securities of U.S. Treasury and federal agencies	**-4,225**	**-875**	**-**	**-**		**-5,100**
Securities of U.S. states and political subdivisions	**-**	**-9**	**-**	**-**		**-9**
Corporate debt securities	**-**	**-3,941**	**-**	**-**		**-3,941**
Equity securities	**-1,233**	**-35**	**-**	**-**		**-1,268**
Other securities	**-**	**-47**	**-**	**-**		**-47**
Total short sale liabilities	**-5,458**	**-4,907**	**-**	**-**		**-10,365**
Other liabilities	**-**	**-34**	**-49**	**-**		**-83**
Total liabilities recorded at fair value	**-5,732**	**-84,670**	**-3,104**	**71,116**		**-22,390**

1. **Includes collateralized loan obligations of $721 million that are classified as trading assets.**
2. **Net gains from trading activities recognized in the income statement include $305 million in net unrealized gains on trading securities held at December 31, 2012.**
3. **Balances consist of securities that are predominantly investment grade based on ratings received from the ratings agencies or internal credit grades categorized as investment grade if external ratings are not available. The securities are classified as Level 3 due to limited market activity.**
4. **Includes collateralized loan obligations of $12.5 billion that are classified as securities available for sale.**
5. **Perpetual preferred securities include ARS and corporate preferred securities. See Note 8 for additional information.**
6. **Derivatives are reported net of cash collateral received and paid and, to the extent that the criteria of the accounting guidance covering the offsetting of amounts related to certain contracts are met, positions with the same counterparty are netted as part of a legally enforceable master netting agreement.**
7. **Derivative assets and derivative liabilities include contracts qualifying for hedge accounting, economic hedges, and derivatives included in trading assets and trading liabilities, respectively.**

Appendix D: Changes in Level 3 assets and liabilities measured at fair value on a recurring basis in 10-K of

WELLS FARGO & COMPANY

(in millions)	Beginning Balance	Total net gains (losses) included: Net Income	Total net gains (losses) included: OCI	Purchase, Sales, Insurances, Settlements, Net (1)	Transfers into Level3	Transfers out of Level 3	Balance End of period	Net unrealized gains (losses) included in income related to assets and liabilities held at period end (2)
Year ended December 31, 2012								
Trading assets (excluding derivatives):								
Securities of U.S. states and political subdivisions	**53**	**3**	**-**	**-10**	**-**	**-**	**46**	**-**
Collateralized debt obligations	**1,582**	**-191**	**-**	**-649**	**-**	**-**	**742**	**-47**
Corporate debt securities	**97**	**-**	**-**	**-45**	**-**	**-**	**52**	**-3**
Mortgage-backed securities	**108**	**8**	**-**	**-110**	**-**	**-**	**6**	**2**
Asset-backed securities	**190**	**48**	**-**	**-98**	**14**	**-16**	**138**	**23**
Equity securities	**4**	**-**	**-**	**-1**	**-**	**-**	**3**	**-**
Total trading securities	**2,034**	**-132**	**-**	**-913**	**14**	**-16**	**987**	**-25**
Other trading assets	**115**	**-39**	**-**	**-**	**-**	**-**	**76**	**-19**
Total trading assets (excluding derivatives)	**2,149**	**-171**	**-**	**-913**	**14**	**-16**	**1,063**	**-44**

Securities available for sale:									
Securities of U.S. states and political subdivisions	**11,516**	**10**	**160**	**1,347**	**-**	**-9,402**	**3,631**	**-**	
Mortgage-backed securities:									
Residential	**61**	**12**	**16**	**50**	**29**	**-74**	**94**	**-1**	
Commercial	**232**	**-56**	**57**	**-30**	**-**	**-**	**203**	**-56**	
Total mortgage-backed securities	**293**	**-44**	**73**	**20**	**29**	**-74**	**297**	**-57**	
Corporate debt securities	**295**	**20**	**19**	**-20**	**1**	**-41**	**274**	**-**	
Collateralized debt obligations	**8,599**	**135**	**514**	**3,940**	**-**	**-**	**13,188**	**-**	
Asset-backed securities:									
Auto loans and leases	**6,641**	**3**	**3**	**-726**	**-**	**-**	**5,921**	**-**	
Home equity loans	**282**	**15**	**14**	**-3**	**29**	**-286**	**51**	**-1**	
Other asset-backed securities	**2,863**	**-29**	**148**	**329**	**1**	**-29**	**3,283**	**-6**	
Total asset-backed securities	**9,786**	**-11**	**165**	**-400**	**30**	**-315**	**9,255**	**-7**	
Total debt securities	**30,489**	**110**	**931**	**4,887**	**60**	**-9,832**	**26,645**	**-64**	-4
Marketable equity securities:									
Perpetual preferred securities	**1,344**	**91**	**-30**	**-611**	**-**	**-**	**794**	**-**	
Other marketable equity securities	**23**	**2**	**-16**	**-9**	**-**	**-**	**-**	**-**	
Total marketable equity securities	**1,367**	**93**	**-46**	**-620**	**-**	**-**	**794**	**-**	-5
Total securities available for sale	**31,856**	**203**	**885**	**4,267**	**60**	**-9,832**	**27,439**	**-64**	
Mortgages held for sale	**3,410**	**-42**	**-**	**-308**	**488**	**-298**	**3,250**	**-30**	-6
Loans	**23**	**43**	**-**	**145**	**5,851**	**-41**	**6,021**	**43**	-6
Mortgage servicing rights	**12,603**	**-5,954**	**-**	**4,889**	**-**	**-**	**11,538**	**-2,893**	-6
Net derivative assets and liabilities:									
Interest rate contracts	**609**	**7,397**	**-**	**-7,349**	**-**	**2**	**659**	**562**	
Commodity contracts	**-**	**78**	**-**	**-50**	**-8**	**1**	**21**	**40**	
Equity contracts	**-75**	**-11**	**-**	**18**	**-**	**-54**	**-122**	**-16**	

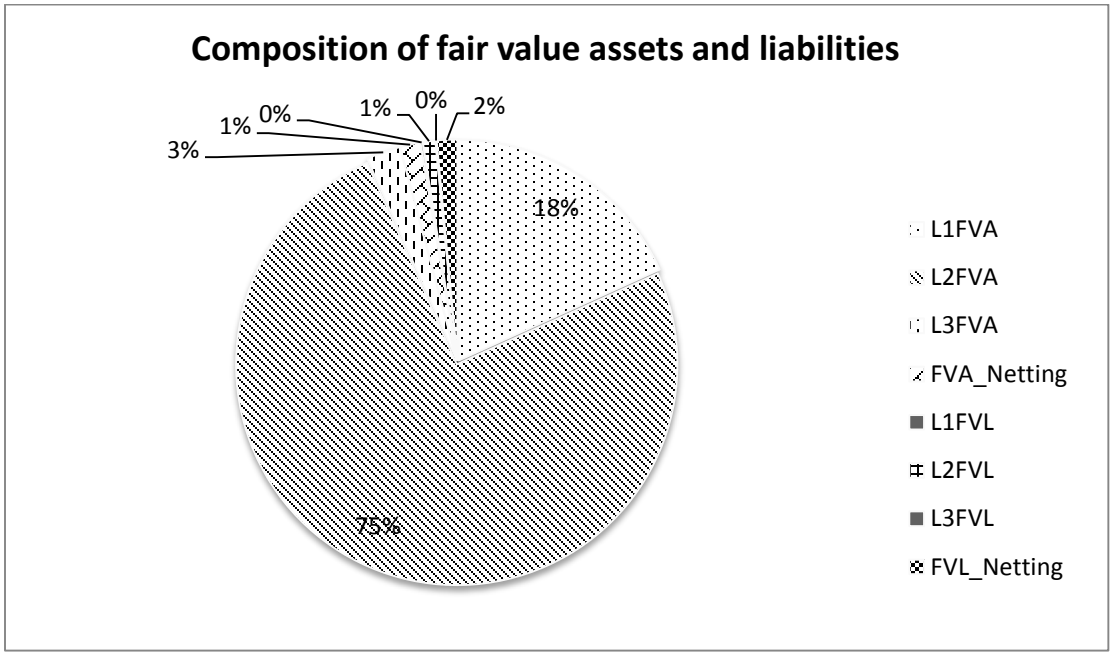
Foreign exchange contracts	**-7**	**23**	**-**	**5**	**-**	**-**	**21**	**30**	
Credit contracts	**-1,998**	**38**	**-**	**810**	**-**	**-**	**-1,150**	**41**	
Other derivative contracts	**-117**	**40**	**-1**	**-**	**-**	**-**	**-78**	**-**	
Total derivative contracts	**-1,588**	**7,565**	**-1**	**-6,566**	**-8**	**-51**	**-649**	**657**	-7
Other assets	**244**	**-21**	**-**	**-61**	**-**	**-**	**162**	**-8**	-3
Short sale liabilities	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	-3
Other liabilities (excluding derivatives)	**-44**	**-43**	**-**	**38**	**-**	**-**	**-49**	**-**	-6

1. **Represents only net gains (losses) that are due to changes in economic conditions and management's estimates of fair value and excludes changes due to the collection/realization of cash flows over time.**
2. **Included in trading activities and other noninterest income in the income statement.**
3. **Included in debt securities available for sale in the income statement.**
4. **Included in equity investments in the income statement.**
5. **Included in mortgage banking and other noninterest income in the income statement.**
6. **Included in mortgage banking, trading activities and other noninterest income in the income statement.**

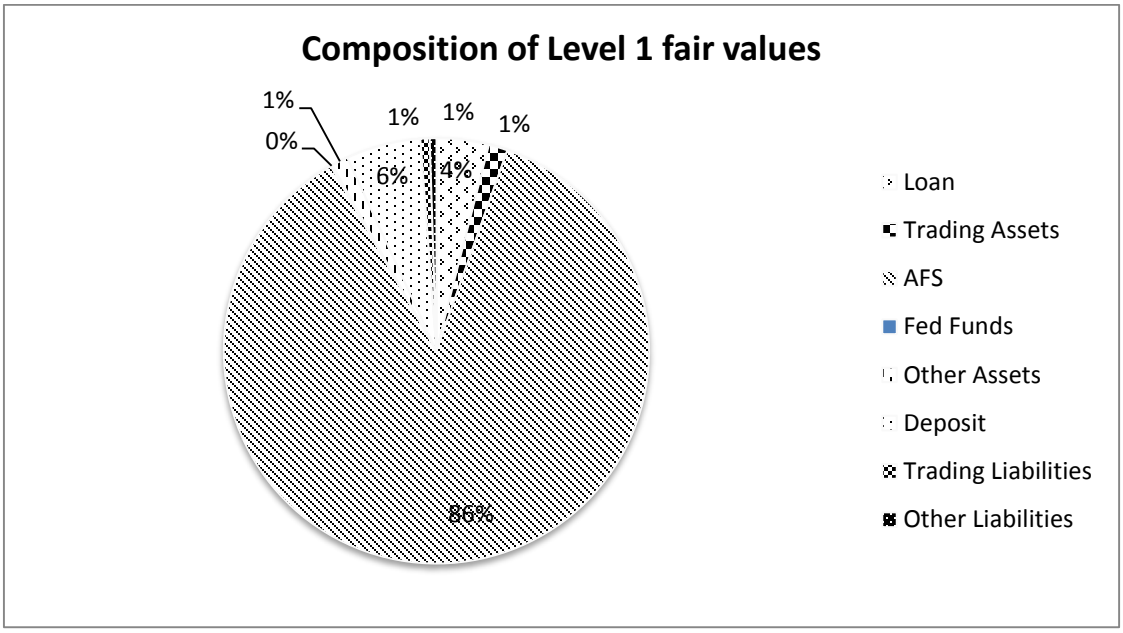
CHARTS AND TABLES

Figure 1 Composition of fair value assets and liabilities

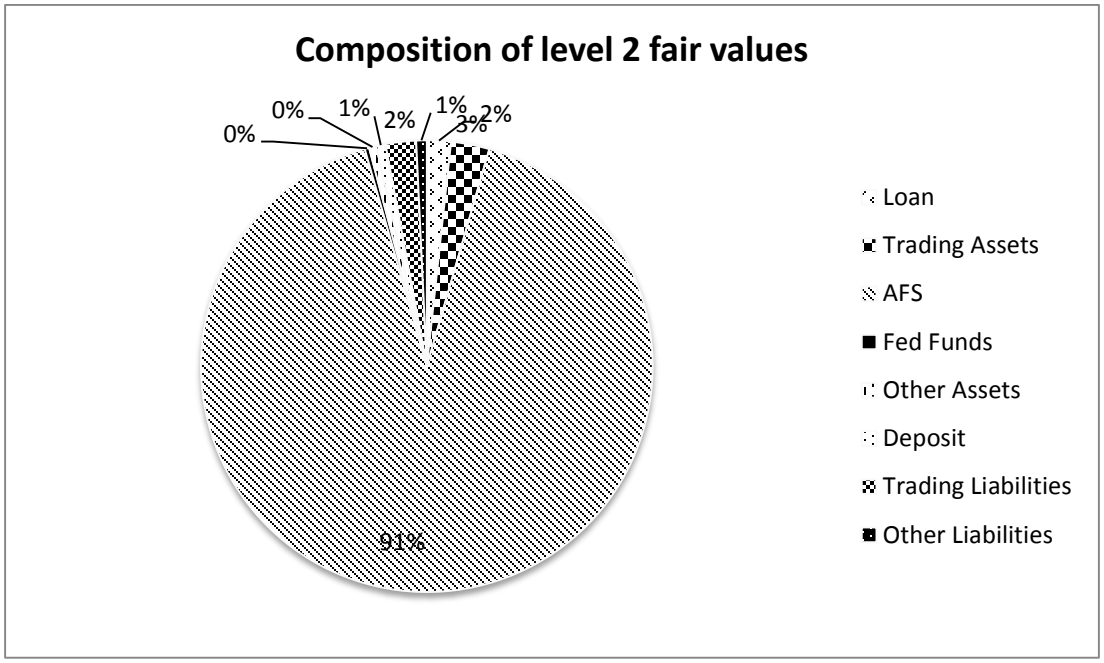
Panel A: Composition of fair value assets and liabilities



Panel B: Composition of level 1 fair value



Panel C: Composition of level 2 fair values



Panel D: Composition of level 3 fair values

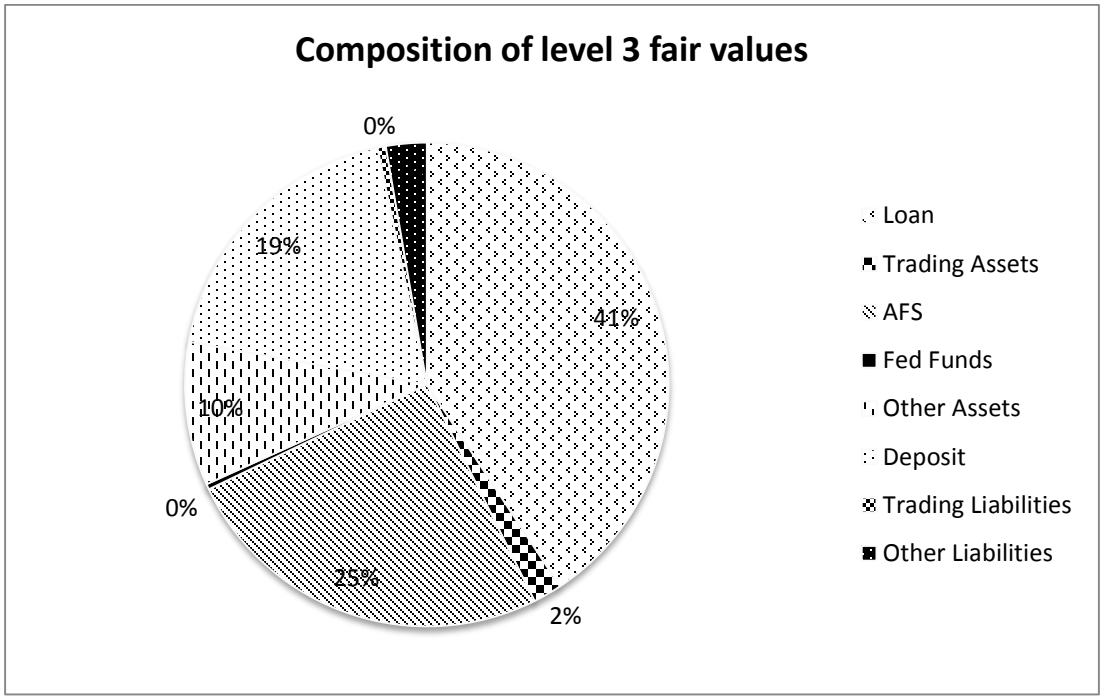


Figure 2 Growth of fair value assets and liabilities 2009-2012

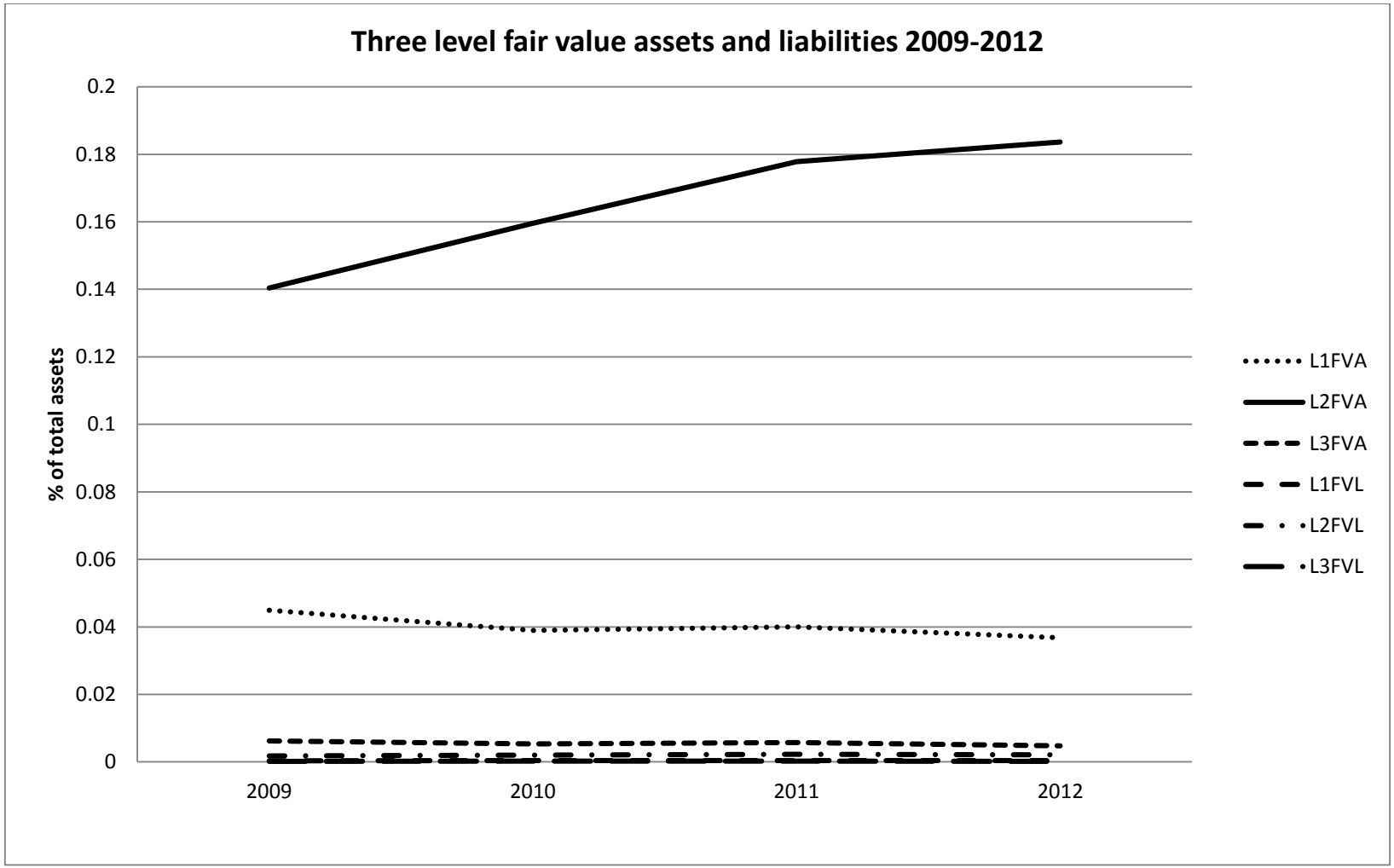
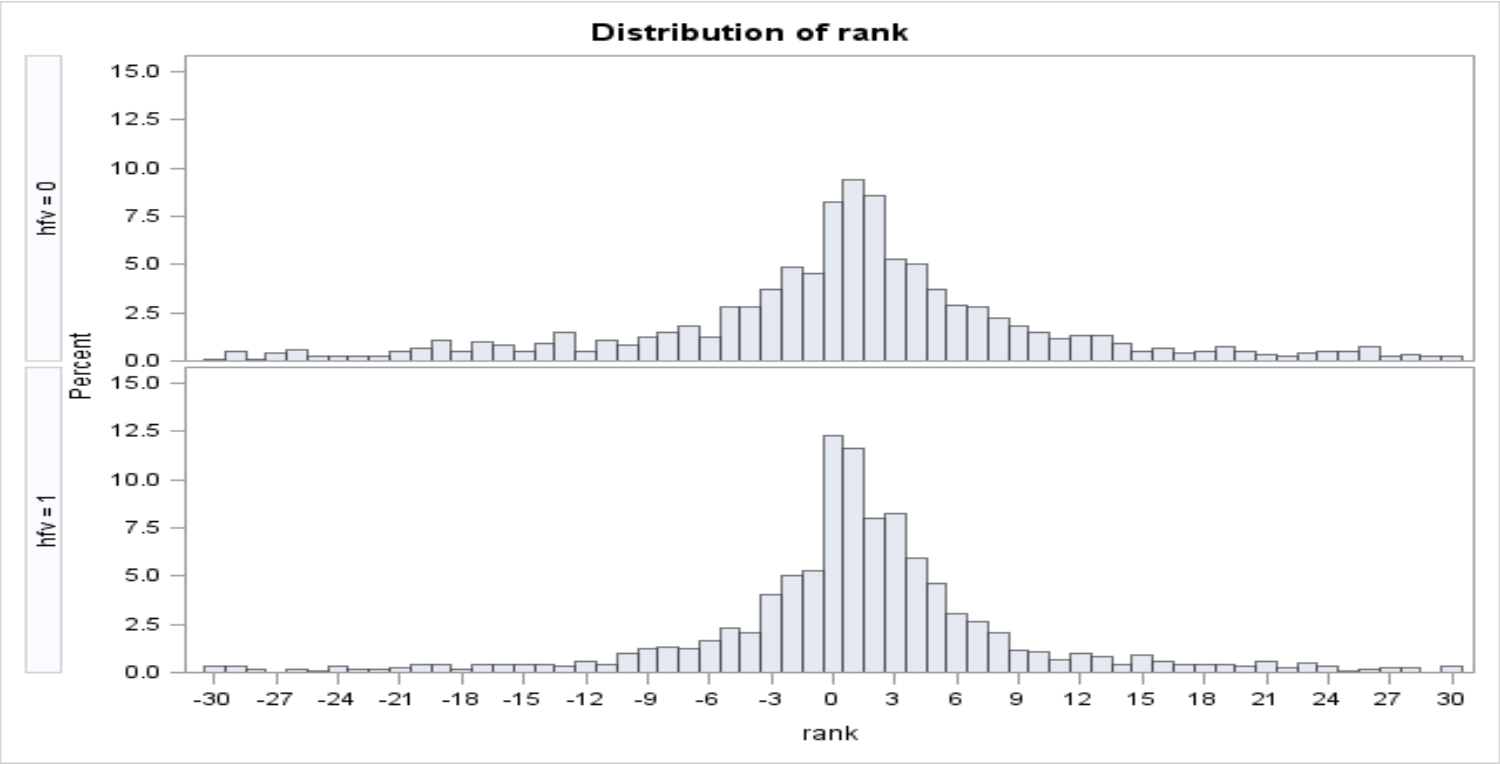


Figure 3 Distributions of change in return on assets

Figure 3 plots the distributions of change in return on assets for the high fair value sample and the low fair value sample. There are 1,448 bank-years reporting fair values higher than the median and 1,448 bank-years reporting fair values lower than the median. The bin width is calculated using the sample of bank-years which have value for ΔROA. The bin width in this study is 0.0007.

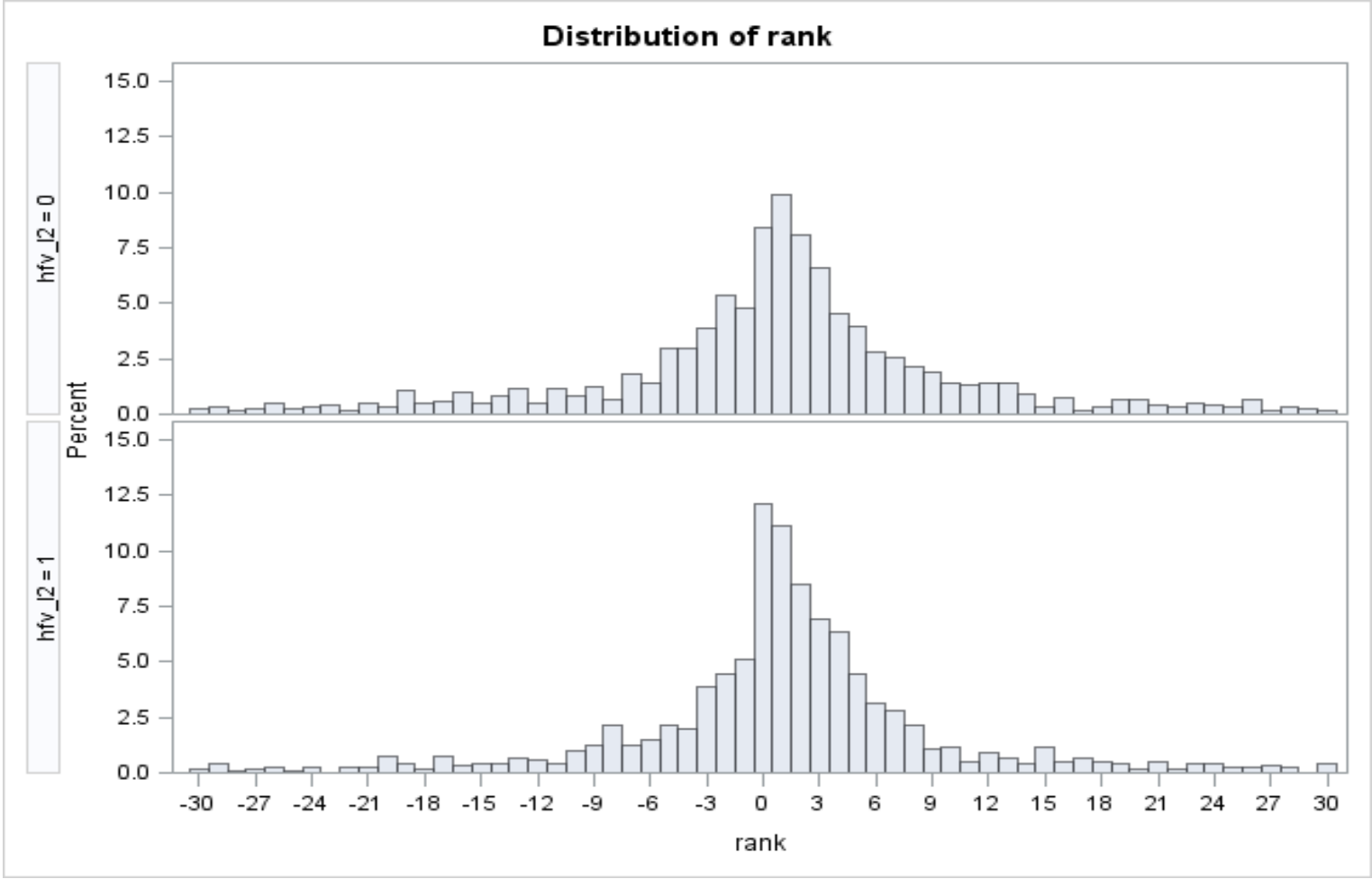
Panel A: Comparison of distributions of change in return on assets between the low fair value sample and the high fair value sample

Change in ROA: Low fair value banks vs. High fair value banks



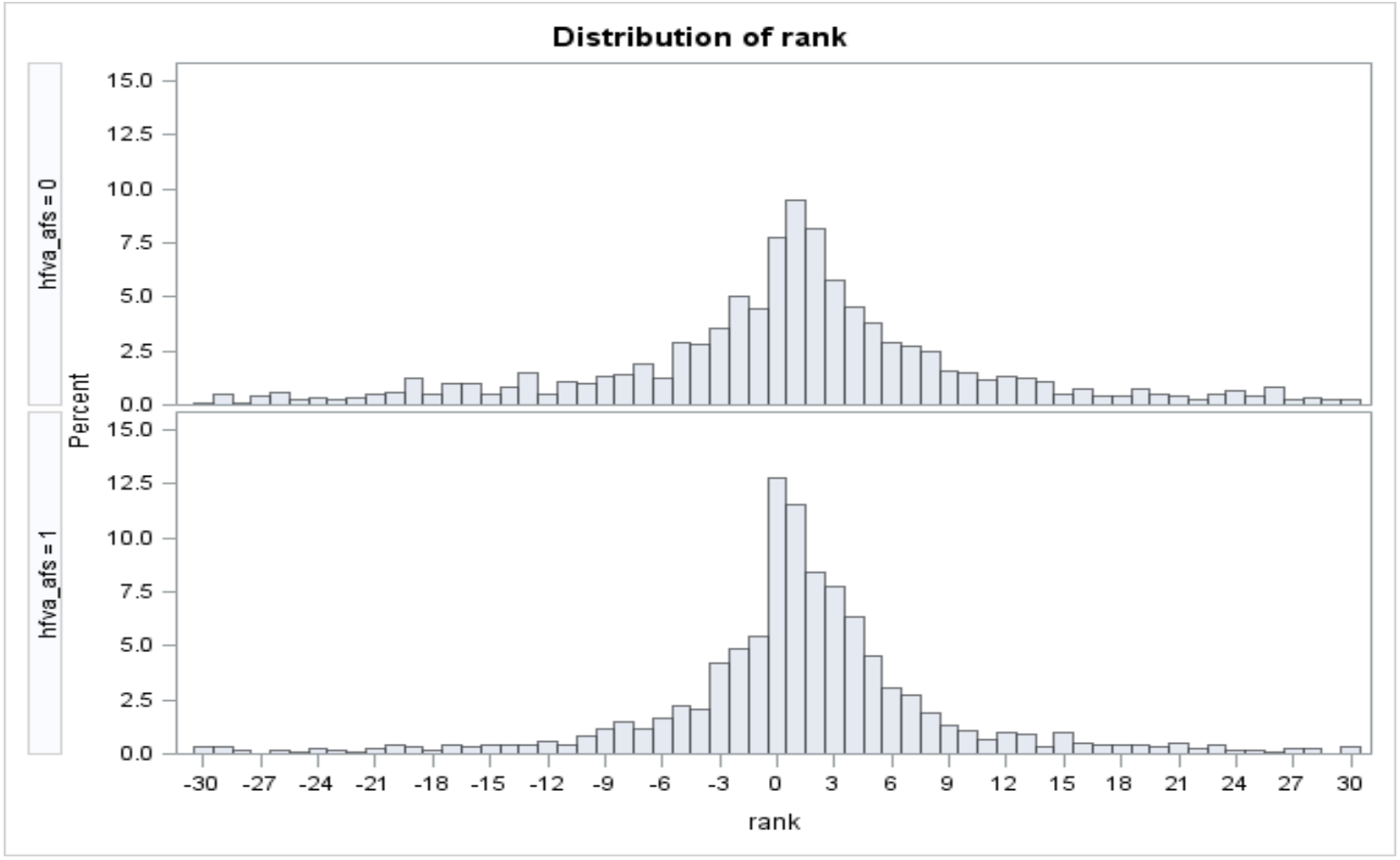
Panel B: Comparison of distributions of change in return on assets between the low level 2 fair value sample and the high level 2 fair value sample

Change in ROA: Low level2 fair value banks vs. High level2 fair value banks



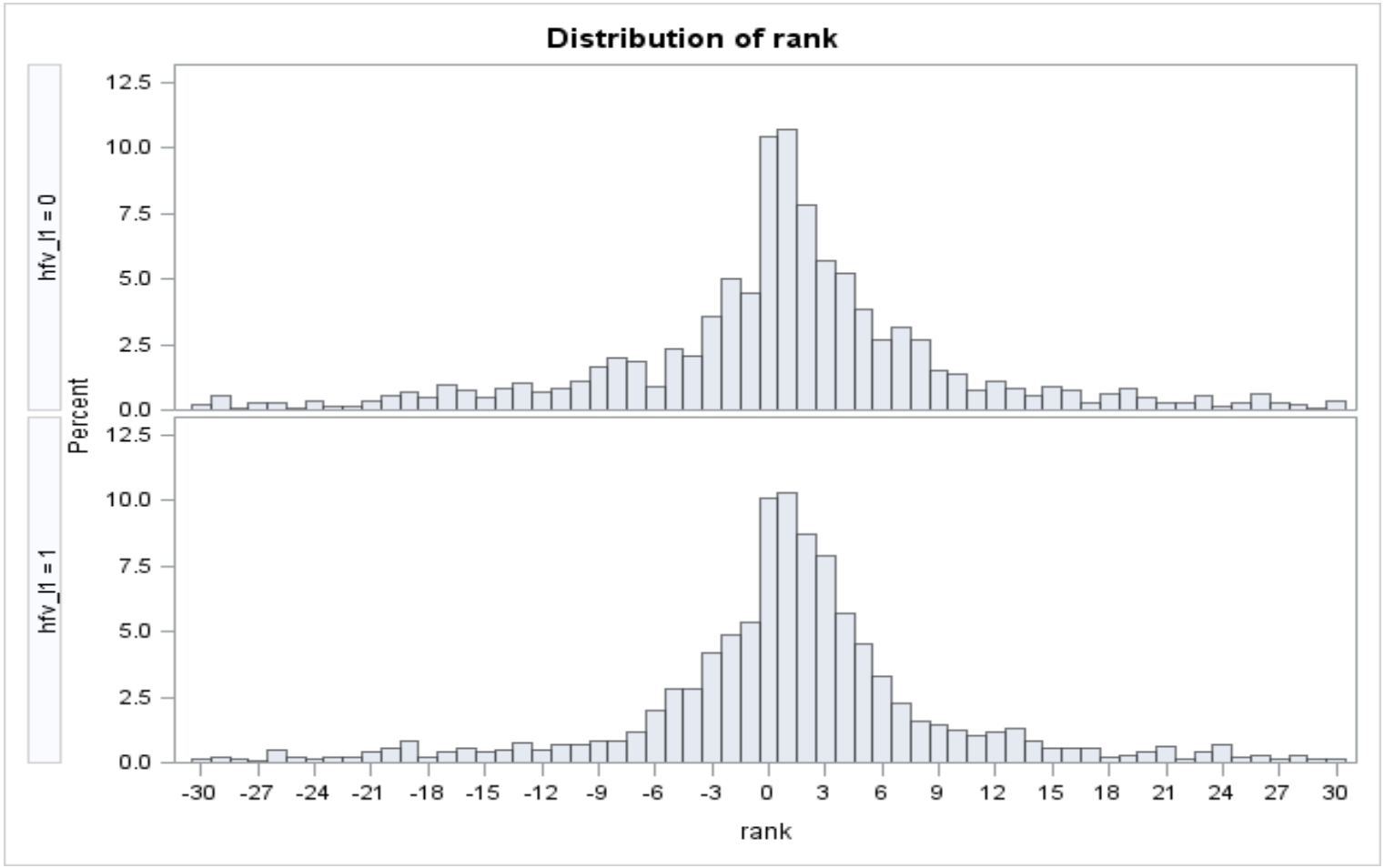
Panel C: Comparison of distributions of change in return on assets between the low AFS sample and the high AFS sample

Change in ROA: Low AFS banks vs. High AFS banks



Panel D: Comparison of distributions of change in return on assets between the low level 1 fair value sample and the high level 1 fair value sample

Change in ROA: Low level1 fair value banks vs. High level1 fair value banks



Panel E: Comparison of distributions of change in return on assets between the low level 3 fair value sample and the high level 3 fair value sample

Change in ROA: Low level3 fair value banks vs. High level3 fair value banks

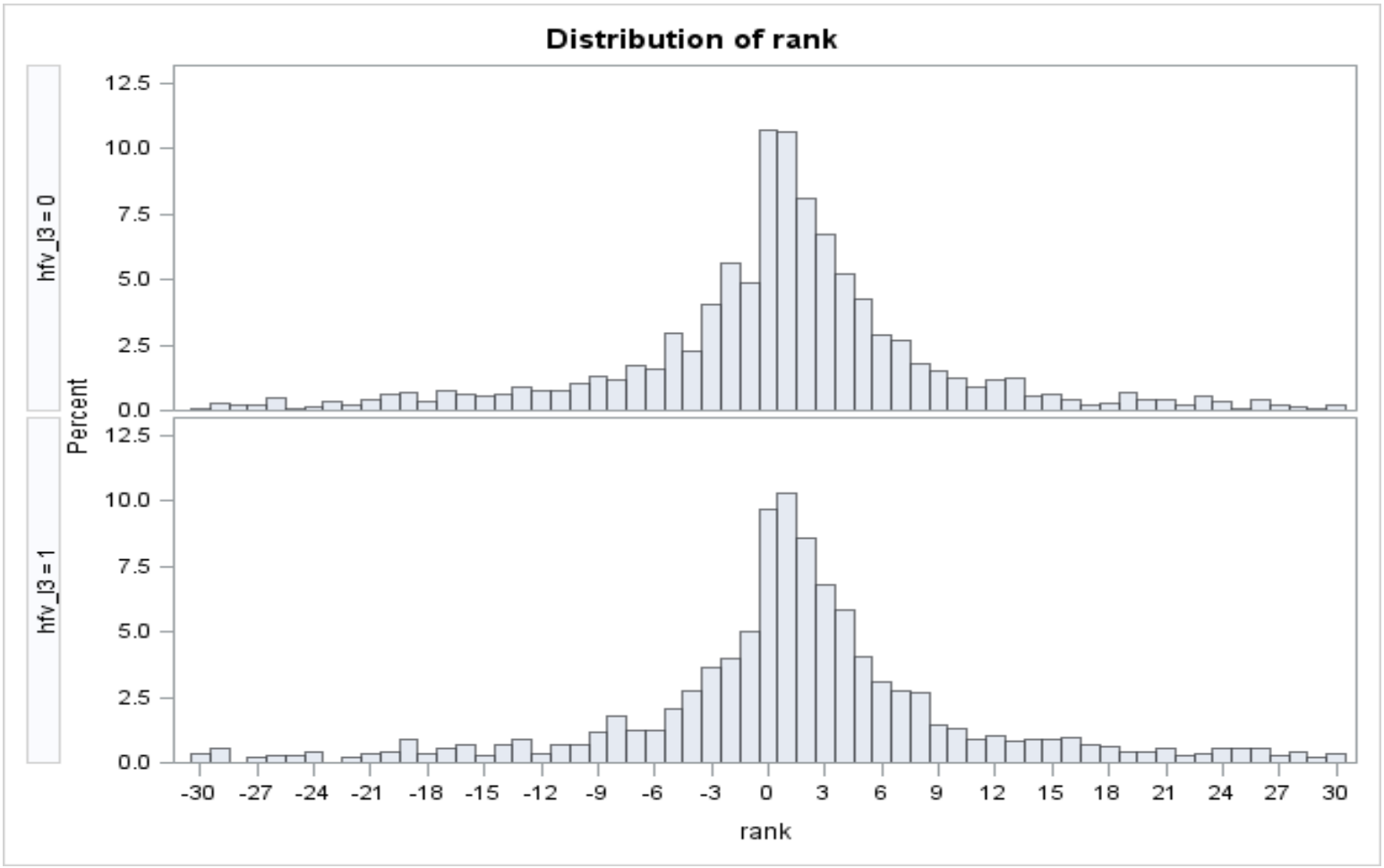


Table 1 Data and sample selection

Panel A: Sample selection procedure

	Bank-years	Unique Banks
Initial sample of U.S. bank holding companies which filed report FR-Y9C to Federal Reserve Bank in the period of 2005-2012	43,945	7,061
Less: Observations with missing data to calculate discretionary loan loss provisions, discretionary security gains and losses and change in ROA	(38,634)	(5,914)
Sample to calculate bin width	5,311	1,147
Less: Observations with missing data on fair value assets and liabilities and observations in 2007 and 2008	(1783)	(86)
Banks with missing years data from 2009 to 2012	(632)	(337)
Final sample	2,896	724

Panel B: Distributions of banks by years across the high fair value sample and low fair value sample

	2009	2010	2011	2012	Total
HFV	362	362	362	362	1,448
LFV	362	362	362	362	1,448
Total	724	724	724	724	2,896

Schedule HC-Q Financial Assets and Liabilities Measured at Fair Value is to be completed by bank holding companies that have adopted FASB Statement No. 157, "Fair Value Measurements," and (1) have elected to account for financial instruments or servicing assets and liabilities at fair value under a fair value option or (2) are required to complete Schedule HC-D—Trading Assets and Liabilities. This schedule is required to be completed by all bank holding companies since 2009.

Table 2 Descriptive statistics

	High fair value banks						Low fair value banks						
	N	Mean	Median	STD	Q1	Q3	N	Mean	Median	STD	Q1	Q3	Difference
ΔROAINC	1448	0.220	0.000	0.415	0.000	0.000	1448	0.161	0.000	0.368	0.000	0.000	0.059***
ΔROAINCt+1	1086	0.212	0.000	0.409	0.000	0.000	1086	0.166	0.000	0.372	0.000	0.000	0.046***
ΔROA	1448	0.002	0.001	0.011	-0.001	0.004	1448	0.001	0.001	0.012	-0.002	0.005	0.001
EM_UP1	1448	0.136	0.000	0.343	0.000	0.000	1448	0.080	0.000	0.272	0.000	0.000	0.056***
EM_UP2	1448	0.050	0.000	0.219	0.000	0.000	1448	0.023	0.000	0.151	0.000	0.000	0.027***
EM_DN1	1448	0.055	0.000	0.227	0.000	0.000	1448	0.057	0.000	0.233	0.000	0.000	-0.003
EM_DN2	1448	0.084	0.000	0.278	0.000	0.000	1448	0.050	0.000	0.219	0.000	0.000	0.034***
Volatility	1448	0.002	0.001	0.003	0.001	0.002	1448	0.003	0.001	0.003	0.001	0.004	-0.001***
PUBLIC	1448	0.400	0.000	0.490	0.000	1.000	1448	0.363	0.000	0.481	0.000	1.000	0.037**
FV	1448	0.317	0.281	0.124	0.231	0.364	1448	0.116	0.122	0.052	0.080	0.159	0.201***
L1FV	1448	0.059	0.001	0.116	0.000	0.035	1448	0.023	0.000	0.046	0.000	0.013	0.036***
L2FV	1448	0.244	0.242	0.139	0.192	0.324	1448	0.091	0.097	0.063	0.032	0.146	0.153***
L3FV	1448	0.009	0.000	0.027	0.000	0.004	1448	0.003	0.000	0.008	0.000	0.001	0.006***
L1FVA	1448	0.058	0.001	0.113	0.000	0.033	1448	0.023	0.000	0.046	0.000	0.013	0.035***
L2FVA	1448	0.241	0.239	0.137	0.190	0.322	1448	0.090	0.096	0.063	0.032	0.145	0.151***
L3FVA	1448	0.009	0.000	0.026	0.000	0.004	1448	0.002	0.000	0.008	0.000	0.001	0.006***
L1FVL	1448	0.001	0.000	0.003	0.000	0.000	1448	0.000	0.000	0.001	0.000	0.000	0.001***
L2FVL	1448	0.003	0.000	0.013	0.000	0.000	1448	0.001	0.000	0.003	0.000	0.000	0.002***
L3FVL	1448	0.000	0.000	0.002	0.000	0.000	1448	0.000	0.000	0.001	0.000	0.000	0.000***
ΔFV	1286	0.079	0.045	0.151	0.007	0.107	1262	0.016	0.005	0.055	-0.012	0.034	0.063***
L1ΔFV	1286	0.010	0.000	0.101	0.000	0.003	1262	0.002	0.000	0.032	0.000	0.001	0.008***
L2ΔFV	1286	0.066	0.033	0.130	0.000	0.098	1262	0.014	0.000	0.050	-0.007	0.026	0.052***
L3ΔFV	1286	0.001	0.000	0.031	0.000	0.000	1262	-0.001	0.000	0.016	0.000	0.000	0.001
ASSETS (mil$)	1448	11,807	1,142	44,862	769	2,294	1448	4,733	1,087	16,312	696	2,385	7,074***
ΔASSETS	1448	0.051	0.038	0.102	-0.004	0.087	1448	0.014	0.011	0.094	-0.037	0.058	0.037***
ΔNPL	1448	0.000	0.000	0.019	-0.008	0.007	1448	0.000	0.000	0.020	-0.009	0.008	0.000
ΔCF	1448	0.001	0.001	0.008	-0.002	0.003	1448	0.000	0.000	0.009	-0.002	0.003	0.001**

ΔLOANR	1448	-0.006	-0.003	0.082	-0.047	0.035	1448	-0.016	-0.009	0.085	-0.058	0.033	0.010***
ΔLOANC	1448	-0.001	-0.002	0.030	-0.014	0.012	1448	-0.004	-0.003	0.030	-0.017	0.009	0.003***
ΔLOAND	1448	0.009	0.000	0.155	0.000	0.000	1448	-0.003	0.000	0.150	0.000	0.000	0.012**
ΔLOANA	1448	0.001	0.000	0.006	0.000	0.000	1448	0.001	0.000	0.006	0.000	0.000	0.000
ΔLOANI	1448	-0.002	-0.002	0.013	-0.005	0.000	1448	-0.002	-0.002	0.010	-0.005	0.000	0.001
ΔLOANO	1448	0.002	0.000	0.011	-0.002	0.003	1448	0.002	0.000	0.010	-0.001	0.002	0.001
DLLP	1448	-0.002	-0.003	0.010	-0.007	0.002	1448	0.000	-0.001	0.011	-0.006	0.004	-0.002***
DRGL	1448	0.0001	0.000	0.002	-0.001	0.001	1448	-0.0001	0.000	0.001	-0.001	0.000	0.0002***
RSGL	1448	0.0007	0.000	0.002	0.000	0.001	1448	0.0003	0.000	0.002	0.000	0.001	0.0004***

Note: All continuous variables are winsorized at top and bottom 1%. *, **, *** indicate significance at 10%, 5%, 1% level, (two-tailed), respectively

Table 3 Correlation coefficients

	ΔROA INC	PUBLIC	FV	L1FV	L2FV	L3FV	HFV	L1 HFV	L2 HFV	L3 HFV	ΔFV	L1 ΔFV	L2 ΔFV	L3 ΔFV	DLLP	DRSGL
PUBLIC	-0.003															
	0.889															
FV	0.062	0.041														
	0.001	0.027														
L1FV	-0.020	-0.220	0.313													
	0.273	0.000	0.000													
L2FV	0.095	0.215	0.675	-0.382												
	0.000	0.000	0.000	0.000												
L3FV	-0.030	0.009	0.323	0.002	0.069											
	0.103	0.640	0.000	0.924	0.000											
HFV	0.076	0.038	0.727	0.202	0.578	0.158										
	0.000	0.039	0.000	0.000	0.000	0.000										
L1HFV	-0.012	-0.018	0.104	0.455	-0.180	-0.016	0.058									
	0.508	0.320	0.000	0.000	0.000	0.394	0.002									
L2HFV	0.062	0.196	0.517	-0.328	0.786	0.036	0.630	-0.171								
	0.001	0.000	0.000	0.000	0.000	0.050	0.000	0.000								
L3HFV	-0.028	0.261	0.151	-0.169	0.226	0.321	0.087	0.022	0.162							
	0.127	0.000	0.000	0.000	0.000	0.000	0.000	0.246	0.000							
ΔFV	-0.021	0.022	0.316	0.164	0.184	0.055	0.265	0.048	0.192	0.019						
	0.288	0.271	0.000	0.000	0.000	0.006	0.000	0.016	0.000	0.328						
L1ΔFV	-0.041	-0.054	0.132	0.433	-0.202	0.018	0.053	0.184	-0.161	-0.070	0.533					
	0.037	0.006	0.000	0.000	0.000	0.375	0.007	0.000	0.000	0.000	0.000					
L2ΔFV	0.008	0.056	0.255	-0.142	0.347	-0.021	0.256	-0.088	0.330	0.053	0.656	-0.194				
	0.689	0.005	0.000	0.000	0.000	0.282	0.000	0.000	0.000	0.007	0.000	0.000				
L3ΔFV	0.002	0.011	0.022	0.021	-0.010	0.199	0.025	0.008	0.016	0.058	0.399	0.261	0.023			
	0.908	0.591	0.268	0.280	0.624	0.000	0.215	0.682	0.415	0.004	0.000	0.000	0.243			
DLLP	-0.075	-0.007	-0.088	-0.043	-0.069	0.028	-0.081	-0.079	-0.045	0.013	-0.046	-0.029	-0.047	0.011		
	0.000	0.690	0.000	0.020	0.000	0.130	0.000	0.000	0.017	0.495	0.020	0.149	0.017	0.596		
DRSGL	-0.033	0.024	0.057	0.036	0.040	-0.005	0.071	0.010	0.045	0.005	0.006	0.037	-0.013	-0.031	0.093	
	0.074	0.193	0.002	0.055	0.031	0.779	0.000	0.603	0.016	0.793	0.744	0.062	0.502	0.115	0.000	
RSGL	0.026	-0.007	0.112	0.044	0.095	-0.052	0.124	-0.004	0.083	-0.083	-0.046	0.024	-0.058	-0.038	0.092	0.864
	0.166	0.717	0.000	0.018	0.000	0.005	0.000	0.831	0.000	0.000	0.020	0.235	0.004	0.055	0.000	0.000

Note: All continuous variables are winsorized at top and bottom 1%. *, **, *** indicate significance at 10%, 5%, 1% level, (two-tailed), respectively.

Table 4 Comparisons of bank-years with changes in return on assets just below zero and just above zero between high fair value banks and low fair value banks

Panel A: High fair value banks vs. Low fair value banks

	Standardized Difference (Actual Number of Bank-Years in Interval) [Expected Number of Bank-Years in Interval]	
	ΔROA between -0.0007 and 0	ΔROA between 0 and 0.0007
HFV	-4.094	4.692
	(71)	(164)
	[115.5]	[51]
LFV	-3.717	2.385
	(60)	(109)
	[86.5]	[92]

Panel B: High level 2 fair value banks vs. Low level 2 fair value banks

	Standardized Difference (Actual Number of Bank-Years in Interval) [Expected Number of Bank-Years in Interval]	
	ΔROA between -0.0007 and 0	ΔROA between 0 and 0.0007
L2HFV	-4.075	5.070
	(68)	(162)
	[111]	[108.5]
L2LFV	-3.835	1.986
	(63)	(111)
	[91]	[96.5]

Panel C: High AFS banks vs. Low AFS banks

	Standardized Difference (Actual Number of Bank-Years in Interval) [Expected Number of Bank-Years in Interval]	
	ΔROA between -0.0007 and 0	ΔROA between 0 and 0.0007
HAFS	-4.179	5.294
	(73)	(171)
	[118]	[114]
LAFS	-3.776	1.597
	(58)	(102)
	[84]	[91]

Panel D: High level 1 fair value banks vs. Low level 1 fair value banks

	Standardized Difference (Actual Number of Bank-Years in Interval) [Expected Number of Bank-Years in Interval]	
	ΔROA between -0.0007 and 0	ΔROA between 0 and 0.0007
L1HFV	-4.318	4.632
	(71)	(133)
	[98.5]	[103.5]
L1LFV	-4.535	4.014
	(60)	(140)
	[103.5]	[101.5]

Panel E: High level 3 fair value banks vs. Low level 3 fair value banks

	Standardized Difference (Actual Number of Bank-Years in Interval) [Expected Number of Bank-Years in Interval]	
	ΔROA between -0.0007 and 0	ΔROA between 0 and 0.0007
L3HFV	-3.807	4.271
	(57)	(110)
	[77.5]	[87]
L3LFV	-4.688	4.178
	(74)	(163)
	[124.5]	[118]

Panel F: Test of differences in kinks

Difference in percent of bank-years in the bin just above zero and in the bin just below zero (standard deviation of differences)		Difference (t-value)
HFV	LFV	
6.956	3.715	3.241
(1.186)	(0.818)	(2.249)**
L2HFV	L2LFV	
7.025	3.642	3.384
(1.169)	(0.823)	(2.367)***
HAFS	LAFS	
7.303	3.349	3.954
(1.198)	(0.793)	(2.752)***
L1HFV	L1LFV	
4.704	5.979	-1.275
(0.834)	(1.052)	(-0.950)
L3HFV	L3LFV	
4.678	5.844	-1.166
(0.854)	(1.012)	(-0.880)

*, **, *** indicate significance at 10%, 5%, 1% level, (two-tailed), respectively.

Table 5 Estimating discretionary accounting choices using Beatty et al. (2002) approach

$$LLP_{it} = \alpha + \beta_1 Log(ASSET)_{it} + \beta_2 \Delta NPL_{it} + \beta_3 LLR_{it} + \beta_4 LOANR_{it} + \beta_5 LOANC_{it} + \beta_6 LOAND_{it} + \beta_7 LOANA_{it} + \beta_8 LOANI_{it} + \beta_9 LOANO_{it} + YEARDUMMY_{it} + \varepsilon_{it}$$

$$RSGL_{it} = \alpha + \beta_1 Log(ASSET)_{it} + \beta_2 TSGL_{it} + YEARDUMMY_{it} + \varepsilon_{it}$$

Variables	LLP	RSGL
INTERCEPT	-0.010	0.000
	(0.006)***	(0.344)***
Log(ASSET)	0.001	-0.000
	(0.000)***	(0.337)
ΔNPL	0.209	
	(0.000)***	
LLR	0.721	
	(0.000)***	
LOANR	-0.004	
	-0.140	
LOANC	-0.008	
	(0.024)**	
LOAND	0.007	
	-0.902	
LOANA	-0.018	
	(0.000)***	
LOANI	-0.011	
	(0.005)***	
LOANO	-0.030	
	(0.000)***	
TSGL		0.141
		(0.000)***
N	5,311	5,311
Adj R-sq	0.418	0.213
Year variables	Yes	Yes

*, **, *** indicate significance at 10%, 5%, 1% level, (two-tailed), respectively.

Table 6 Logistic regressions of small earnings increases on fair value variables

$$\Delta ROAINC_{it} = \alpha + \beta_1 PUBLIC + \beta_2 FV/HFV_{it} + \beta_3 Log(ASSET)_{it} + \beta_4 \Delta ASSET_{it} + \beta_5 \Delta CF_{it} + \beta_6 \Delta NPL_{it} + \beta_7 \Delta LOANR_{it} + \beta_8 \Delta LOANC_{it} + \beta_9 \Delta LOAND_{it} + \beta_{10} \Delta LOANA_{it} + \beta_{11} \Delta LOANI_{it} + \beta_{12} \Delta LOANO_{it} + \beta_{13} DLLP_{it} + \beta_{14} DRSGL_{it} + YEARDUMMY_{it} + \varepsilon_{it}$$

$$\Delta ROAINC_{it} = \alpha + \beta_1 PUBLIC + \beta_2 L1FV/L1HFV_{it} + \beta_3 L2FV/L2HFV_{it} + \beta_4 L3FV/L3HFV_{it} + \beta_5 Log(ASSET)_{it} + \beta_6 \Delta ASSET_{it} + \beta_7 \Delta CF_{it} + \beta_8 \Delta NPL_{it} + \beta_9 \Delta LOANR_{it} + \beta_{10} \Delta LOANC_{it} + \beta_{11} \Delta LOAND_{it} + \beta_{12} \Delta LOANA_{it} + \beta_{13} \Delta LOANI_{it} + \beta_{14} \Delta LOANO_{it} + \beta_{15} DLLP_{it} + \beta_{16} DRSGL_{it} + YEARDUMMY_{it} + \varepsilon_{it}$$

Panel A: Control for discretionary security gains and losses

Variables	Small earnings increases			
INTERCEPT	-0.512	-0.462	-0.550	-0.727
	(0.459)	(0.504)	(0.428)	(0.306)
PUBLIC	-0.019	-0.079	-0.028	-0.064
	(0.886)	(0.548)	(0.832)	(0.627)
FV	**0.972**			
	(0.011)**			
L1FV		0.470		
		(0.500)		
L2FV		**1.868**		
		(0.000)***		
L3FV		-4.382		
		(0.172)		
HFV			**0.406**	
			(0.000)***	
L1HFV				-0.035
				(0.752)
L2HFV				**0.355**
				(0.002)***
L3HFV				-0.163
				(0.171)
Log(ASSET)	-0.056	-0.066	-0.052	-0.031
	(0.271)	(0.196)	(0.304)	(0.558)
ΔASSET	-1.342	-1.566	-1.409	-1.227
	(0.077)*	(0.039)**	(0.059)*	(0.095)*
ΔCF	1.843	1.838	1.855	1.520
	(0.464)	(0.470)	(0.461)	(0.543)
ΔNPL	-14.007	-14.153	-13.830	-13.756
	(0.000)***	(0.000)***	(0.000)***	(0.000)***
ΔLOANR	4.785	4.933	4.766	4.590

	(0.000)***	(0.000)***	(0.000)***	(0.000)***
ΔLOANC	0.376	0.611	0.404	0.358
	(0.827)	(0.725)	(0.815)	(0.837)
ΔLOAND	-0.126	-0.140	-0.128	-0.102
	(0.693)	(0.671)	(0.690)	(0.748)
ΔLOANA	1.302	2.726	1.798	2.750
	(0.867)	(0.723)	(0.817)	(0.724)
ΔLOANI	-3.410	-3.683	-3.386	-4.647
	(0.522)	(0.483)	(0.524)	(0.385)
ΔLOANO	6.415	5.838	7.043	6.726
	(0.150)	(0.183)	(0.116)	(0.141)
DLLP	-17.470	-16.849	-17.287	-18.582
	(0.000)***	(0.000)***	(0.000)***	(0.000)***
DRSGL	-26.038	-28.161	-30.459	-26.335
	(0.349)	(0.310)	(0.270)	(0.346)
d.v.=1	552	552	552	552
d.v.=0	2344	2344	2344	2344
N	2896	2896	2896	2896
Pseudo R-sq	0.064	0.072	0.069	0.068
Year variables	Yes	Yes	Yes	Yes
Firm clustering	Yes	Yes	Yes	Yes

I adjust for firm-level clustering when calculating the standard errors. *, **, *** indicate significance at 10%, 5%, 1% level, (two-tailed), respectively.

Panel B: Control for realized security gains and losses

Variables	Small earnings increases			
INTERCEPT	-0.545	-0.486	-0.575	-0.747
	(0.430)	(0.481)	(0.406)	(0.292)
PUBLIC	-0.025	-0.085	-0.033	-0.069
	(0.850)	(0.519)	(0.797)	(0.600)
FV	**0.903**			
	(0.019)**			
L1FV		0.388		
		(0.578)		
L2FV		**1.795**		
		(0.000)***		
L3FV		-4.197		
		(0.188)		
HFV			**0.385**	
			(0.000)***	
L1HFV				-0.040
				(0.720)
L2HFV				**0.338**
				(0.004)***
L3HFV				-0.150
				(0.210)
Log(ASSET)	-0.054	-0.065	-0.051	-0.031
	(0.283)	(0.205)	(0.314)	(0.559)
ΔASSET	-1.268	-1.496	-1.337	-1.168
	(0.090)*	(0.047)**	(0.070)*	(0.110)
ΔCF	1.590	1.639	1.623	1.321
	(0.526)	(0.518)	(0.518)	(0.597)
ΔNPL	-16.021	-16.101	-15.787	-15.675
	(0.000)***	(0.000)***	(0.000)***	(0.000)***
ΔLOANR	4.853	4.994	4.842	4.676
	(0.000)***	(0.000)***	(0.000)***	(0.000)***
ΔLOANC	0.330	0.546	0.358	0.303
	(0.847)	(0.752)	(0.835)	(0.861)
ΔLOAND	-0.132	-0.144	-0.134	-0.110
	(0.679)	(0.661)	(0.677)	(0.730)
ΔLOANA	1.281	2.729	1.768	2.716
	(0.870)	(0.726)	(0.822)	(0.730)
ΔLOANI	-3.334	-3.619	-3.318	-4.514
	(0.535)	(0.494)	(0.536)	(0.402)
ΔLOANO	6.146	5.588	6.728	6.416

	(0.171)	(0.205)	(0.135)	(0.162)
DLLP	-18.512	-17.848	-18.248	-19.498
	(0.000)***	(0.000)***	(0.000)***	(0.000)***
RSGL	38.410	29.543	30.362	34.546
	(0.140)	(0.249)	(0.239)	(0.185)
d.v.=1	552	552	552	552
d.v.=0	2344	2344	2344	2344
N	2896	2896	2896	2896
Pseudo R-sq	0.065	0.073	0.069	0.068
Year variables	Yes	Yes	Yes	Yes
Firm clustering	Yes	Yes	Yes	Yes

I adjust for firm-level clustering when calculating the standard errors. *, **, *** indicate significance at 10%, 5%, 1% level, (two-tailed), respectively.

Table 7 Logistic regressions of small earnings increases one-year ahead on fair value variable

Panel A: Control for discretionary security gains and losses

Variables	Small earnings increases one-year ahead			
INTERCEPT	-0.137	-0.026	-0.169	-0.456
	(0.856)	(0.972)	(0.822)	(0.557)
PUBLIC	-0.169	-0.263	-0.175	-0.220
	(0.265)	(0.087)	(0.246)	(0.154)
FV	**0.474**			
	(0.295)			
L1FV		-0.725		
		(0.378)		
L2FV		**1.548**		
		(0.004)* **		
L3FV		-3.219		
		(0.351)		
HFV			**0.281**	
			(0.024) **	
L1HFV				-0.129
				(0.321)
L2HFV				**0.326**
				(0.012) **
L3HFV				-0.188
				(0.179)
Log(ASSET)	-0.074	-0.088	-0.074	-0.045
	(0.174)	(0.111)	(0.172)	(0.433)
ΔASSET	-0.558	-0.819	-0.739	-0.702
	(0.507)	(0.329)	(0.370)	(0.391)
ΔCF	-3.944	-3.948	-3.849	-4.282
	(0.147)	(0.153)	(0.156)	(0.116)
ΔNPL	-9.973	-9.701	-9.710	-9.695
	(0.025)**	(0.035)**	(0.029)**	(0.031)**
ΔLOANR	3.993	4.204	4.077	4.021
	(0.000)***	(0.000)***	(0.000)***	(0.000)***
ΔLOANC	0.001	0.333	0.095	0.106
	(1.000)	(0.873)	(0.963)	(0.960)
ΔLOAND	-0.673	-0.718	-0.691	-0.686
	(0.133)	(0.109)	(0.126)	(0.128)
ΔLOANA	4.834	6.395	5.344	6.283
	(0.596)	(0.489)	(0.557)	(0.491)
ΔLOANI	3.280	2.395	3.496	2.216

	(0.550)	(0.657)	(0.521)	(0.685)
ΔLOANO	6.618	5.567	6.932	6.583
	(0.248)	(0.322)	(0.223)	(0.250)
DLLP	-24.430	-24.314	-23.780	-25.432
	(0.000)***	(0.000)***	(0.000)***	(0.000)***
DRSGL	2.244	-1.564	-1.898	0.124
	(0.937)	(0.956)	(0.946)	(0.997)
d.v.=1	410	410	410	410
d.v.=0	1762	1762	1762	1762
N	2172	2172	2172	2172
Pseudo R-sq	0.055	0.066	0.058	0.062
Year variables	Yes	Yes	Yes	Yes
Firm clustering	Yes	Yes	Yes	Yes

I adjust for firm-level clustering when calculating the standard errors. *, **, *** indicate significance at 10%, 5%, 1% level, (two-tailed), respectively.

Panel B: Control for realized security gains and losses

Variables	Small earnings increases one-year ahead			
INTERCEPT	-0.183	-0.064	-0.209	-0.473
	(0.809)	(0.932)	(0.781)	(0.541)
PUBLIC	-0.170	-0.264	-0.177	-0.222
	(0.259)	(0.084)*	(0.240)	(0.151)
FV	**0.399**			
	(0.378)			
L1FV		-0.819		
		(0.320)		
L2FV		**1.452**		
		(0.007)* **		
L3FV		-2.877		
		(0.398)		
HFV			**0.257**	
			(0.039) **	
L1HFV				-0.132
				(0.312)
L2HFV				**0.307**
				(0.018) **
L3HFV				-0.167
				(0.236)
Log(ASSET)	-0.072	-0.086	-0.072	-0.045
	(0.184)	(0.118)	(0.179)	(0.424)
ΔASSET	-0.549	-0.798	-0.733	-0.705
	(0.509)	(0.339)	(0.371)	(0.388)
ΔCF	-4.164	-4.133	-4.062	-4.431
	(0.125)	(0.135)	(0.134)	(0.104)
ΔNPL	-11.688	-11.474	-11.434	-11.252
	(0.012)**	(0.016)**	(0.014)**	(0.016)**
ΔLOANR	4.067	4.263	4.159	4.108
	(0.000)***	(0.000)***	(0.000)***	(0.000)***
ΔLOANC	0.057	0.363	0.153	0.161
	(0.978)	(0.861)	(0.941)	(0.938)
ΔLOAND	-0.685	-0.729	-0.702	-0.696
	(0.124)	(0.102)	(0.119)	(0.120)
ΔLOANA	4.987	6.563	5.483	6.411
	(0.588)	(0.482)	(0.551)	(0.487)
ΔLOANI	3.335	2.421	3.521	2.309
	(0.545)	(0.656)	(0.520)	(0.674)
ΔLOANO	6.323	5.304	6.589	6.270

	(0.270)	(0.346)	(0.247)	(0.273)
DLLP	-25.538	-25.461	-24.861	-26.358
	(0.000)***	(0.000)***	(0.000)***	(0.000)***
RSGL	63.664	57.218	57.568	55.788
	(0.019)**	(0.032)**	(0.032)**	(0.037)**
d.v.=1	410	410	410	410
d.v.=0	1762	1762	1762	1762
N	2172	2172	2172	2172
Pseudo R-sq	0.058	0.068	0.060	0.064
Year variables	Yes	Yes	Yes	Yes
Firm clustering	Yes	Yes	Yes	Yes

I adjust for firm-level clustering when calculating the standard errors. *, **, *** indicate significance at 10%, 5%, 1% level, (two-tailed), respectively.

Table 8 Logistic regressions of small earnings increases on changes in assets and liabilities measured at fair value

Variables	Small earnings increases			
INTERCEPT	-0.644	-0.648	-0.656	-0.660
	(0.371)	(0.370)	(0.361)	(0.360)
PUBLIC	0.025	0.011	0.015	0.000
	(0.853)	(0.938)	(0.911)	(1.000)
ΔFV	**1.147**		**1.135**	
	(0.045)**		**(0.043)****	
ΔL1FV		-0.087		-0.145
		(0.896)		(0.828)
ΔL2FV		**1.914**		**1.893**
		(0.008)***		**(0.008)*****
ΔL3FV		0.568		0.739
		(0.627)		(0.545)
Log(ASSET)	-0.031	-0.030	-0.030	-0.030
	(0.559)	(0.566)	(0.560)	(0.566)
ΔASSET	-1.256	-1.440	-1.162	-1.343
	(0.122)	(0.086)*	(0.145)	(0.104)
ΔCF	5.598	5.542	5.300	5.224
	(0.040)**	(0.043)**	(0.050)*	(0.055)*
ΔNPL	-16.790	-16.279	-18.740	-18.290
	(0.000)***	(0.000)***	(0.000)***	(0.000)***
ΔLOANR	4.766	4.902	4.868	4.999
	(0.000)***	(0.000)***	(0.000)***	(0.000)***
ΔLOANC	0.236	0.364	0.148	0.273
	(0.896)	(0.841)	(0.934)	(0.880)
ΔLOAND	-0.025	-0.041	-0.036	-0.056
	(0.942)	(0.907)	(0.916)	(0.873)
ΔLOANA	-0.946	-0.752	-1.144	-0.901
	(0.911)	(0.929)	(0.893)	(0.916)
ΔLOANI	-4.162	-4.146	-4.094	-4.078
	(0.447)	(0.447)	(0.456)	(0.457)
ΔLOANO	6.072	6.123	5.740	5.773
	(0.203)	(0.196)	(0.230)	(0.224)
DLLP	-11.029	-11.060	-11.936	-11.998
	(0.020)**	(0.020)**	(0.012)**	(0.012)**
DRSGL	-47.652	-46.248		
	(0.124)	(0.135)		
RSGL			19.549	20.966

			(0.489)	(0.458)
d.v.=1	504	504	504	504
d.v.=0	2044	2044	2044	2044
N	2548	2548	2548	2548
Pseudo R-sq	0.063	0.066	0.062	0.066
Year variables	Yes	Yes	Yes	Yes
Firm clustering	Yes	Yes	Yes	Yes

I adjust for firm-level clustering when calculating the standard errors. *, **, *** indicate significance at 10%, 5%, 1% level, (two-tailed), respectively.

Table 9 Logistic regressions of small earnings increases one-year ahead on changes in assets and liabilities measured at fair value

Variables	Small earnings increases one-year ahead			
INTERCEPT	-0.312	-0.275	-0.341	-0.307
	(0.691)	(0.726)	(0.663)	(0.696)
PUBLIC	-0.079	-0.104	-0.087	-0.112
	(0.626)	(0.525)	(0.594)	(0.494)
ΔFV	**0.887**		**0.852**	
	(0.133)		**0.149**	
ΔL1FV		-1.474		-1.567
		(0.186)		(0.153)
ΔL2FV		**1.489**		**1.455**
		(0.029)**		**(0.029)****
ΔL3FV		-2.353		-2.081
		(0.198)		(0.262)
Log(ASSET)	-0.056	-0.058	-0.055	-0.058
	(0.326)	(0.307)	(0.329)	(0.310)
ΔASSET	-0.818	-0.812	-0.797	-0.792
	(0.374)	(0.387)	(0.382)	(0.393)
ΔCF	0.518	0.390	0.239	0.094
	(0.860)	(0.896)	(0.935)	(0.975)
ΔNPL	-12.138	-11.343	-13.776	-13.138
	(0.013)**	(0.024)	(0.006)***	(0.011)**
ΔLOANR	4.335	4.393	4.450	4.496
	(0.000)***	(0.000)***	(0.000)***	(0.000)***
ΔLOANC	-0.183	0.017	-0.142	0.035
	(0.933)	(0.994)	(0.948)	(0.987)
ΔLOAND	-0.621	-0.616	-0.646	-0.643
	(0.227)	(0.229)	(0.210)	(0.211)
ΔLOANA	4.769	5.227	4.782	5.363
	(0.630)	(0.601)	(0.632)	(0.595)
ΔLOANI	2.080	1.862	1.985	1.798
	(0.720)	(0.747)	(0.733)	(0.756)
ΔLOANO	6.518	6.050	6.131	5.651
	(0.287)	(0.320)	(0.317)	(0.353)
DLLP	-13.519	-13.640	-14.407	-14.636
	(0.019)**	(0.020)**	(0.013)**	(0.013)**
DRSGL	-12.737	-9.526		
	(0.689)	(0.767)		
RSGL			46.730	49.637

			(0.117)	(0.096)*
d.v.=1	350	350	350	350
d.v.=0	1474	1474	1474	1474
N	1824	1824	1824	1824
Pseudo R-sq	0.048	0.057	0.050	0.058
Year variables	Yes	Yes	Yes	Yes
Firm clustering	Yes	Yes	Yes	Yes

I adjust for firm-level clustering when calculating the standard errors. *, **, *** indicate significance at 10%, 5%, 1% level, (two-tailed), respectively.

Table10 Logistic regressions of small earnings increases on different types of fair value assets and liabilities

Variables	Small earnings increases		Small earnings increases one-year ahead	
Intercept	-0.691	-0.705	-0.549	-0.571
	(0.393)	(0.383)	(0.552)	(0.536)
PUBLIC	-0.054	-0.061	-0.221	-0.223
	(0.690)	(0.652)	(0.163)	(0.159)
L1LOAN	-21.421	-21.350	-168.700	-165.400
	(0.123)	(0.134)	(0.071)*	(0.074)*
L2LOAN	-11.988	-12.093	-20.819	-21.076
	(0.249)	(0.251)	(0.032)**	(0.032)**
L3LOAN	-19.249	-18.983	-3.509	-3.444
	(0.174)	(0.173)	(0.236)	(0.252)
L1TRADEA	-15.458	-15.716	-57.643	-57.807
	(0.468)	(0.458)	(0.108)	(0.106)
L2TRADEA	5.474	5.409	**15.869**	**15.806**
	(0.227)	(0.247)	**(0.005)*** **	**(0.006)*** **
L3TRADEA	-104.000	-105.900	-45.136	-50.249
	(0.171)	(0.158)	(0.683)	(0.650)
L1AFS	0.570	0.467	-0.552	-0.694
	(0.399)	(0.495)	(0.496)	(0.396)
L2AFS	**1.974**	**1.909**	**1.544**	**1.435**
	(0.000)* **	**(0.000)*** **	**(0.006)*** **	**(0.012)** **
L3AFS	-7.506	-7.305	-10.248	-9.502
	(0.176)	(0.186)	(0.193)	(0.198)
L1FED	21.980	19.930	40.990	40.353
	(0.150)	(0.210)	(0.023)**	(0.032)**
L2FED	13.604	12.555	10.644	7.425
	(0.484)	(0.509)	(0.744)	(0.817)
L3FED	-18.420	-11.999	-13.818	-10.097
	(0.876)	(0.912)	(0.867)	(0.895)
L1OTHERA	-51.274	-51.510	-90.835	-94.911
	(0.080)*	(0.083)*	(0.242)	(0.259)
L2OTHERA	-15.569	-15.903	-25.901	-26.771
	(0.415)	(0.405)	(0.233)	(0.220)
L3OTHERA	-11.673	-11.940	-18.945	-19.278
	(0.189)	(0.164)	(0.175)	(0.173)
L1DEPOSIT	8.548	8.799	12.186	13.308
	(0.413)	(0.410)	(0.539)	(0.524)

L2DEPOSIT	-0.402	-0.182	5.657	6.201
	(0.985)	(0.993)	(0.725)	(0.700)
L3DEPOSIT	23.507	23.219	9.523	9.250
	(0.060)*	(0.058)*	(0.095)*	(0.102)
L1TRADEL	3.250	5.988	-7.409	-4.090
	(0.927)	(0.861)	(0.868)	(0.927)
L2TRADEL	0.009	-0.054	-7.965	-7.898
	(0.998)	(0.991)	(0.178)	(0.185)
L3TRADEL	186.800	190.900	178.100	186.000
	(0.363)	(0.351)	(0.580)	(0.567)
L1OTHERL	140.100	137.000	94.148	91.956
	(0.033)**	(0.037)**	(0.344)	(0.357)
L2OTHERL	-22.929	-22.660	-47.854	-47.866
	(0.205)	(0.210)	(0.103)	(0.103)
L3OTHERL	-56.398	-56.101	-49.816	-48.326
	(0.085)*	(0.080)*	(0.381)	(0.383)
Log(ASSET)	-0.047	-0.046	-0.045	-0.044
	(0.422)	(0.436)	(0.499)	(0.510)
ΔASSET	-1.615	-1.519	-0.698	-0.631
	(0.042)**	(0.054)*	(0.444)	(0.488)
ΔCF	1.291	1.082	-4.454	-4.667
	(0.618)	(0.675)	(0.115)	(0.099)*
ΔNPL	-13.456	-15.629	-9.999	-11.818
	(0.002)***	(0.000)***	(0.049)**	(0.023)**
ΔLOANR	5.113	5.158	4.075	4.100
	(0.000)***	(0.000)***	(0.000)***	(0.000)***
ΔLOANC	1.063	0.980	0.435	0.459
	(0.562)	(0.592)	(0.851)	(0.842)
ΔLOAND	-0.024	-0.032	-0.689	-0.697
	(0.947)	(0.929)	(0.171)	(0.162)
ΔLOANA	2.017	1.944	5.196	5.292
	(0.797)	(0.806)	(0.578)	(0.575)
ΔLOANI	-4.147	-4.050	3.399	3.439
	(0.467)	(0.481)	(0.570)	(0.568)
ΔLOANO	5.420	5.170	6.043	5.730
	(0.243)	(0.268)	(0.313)	(0.339)
DLLP	-16.062	-17.068	-26.163	-27.276
	(0.001)***	(0.000)***	(0.000)***	(0.000)***
DRSGL	-39.277		-9.469	
	(0.170)		(0.753)	
RSGL		16.362		48.058

		(0.526)		(0.087)*
d.v.=1	552	552	410	410
d.v.=0	2344	2344	1762	1762
N	2896	2896	2172	2172
Pseudo R-sqr	0.100	0.099	0.099	0.100
Year variables	Yes	Yes	Yes	Yes
Firm clustering	Yes	Yes	Yes	Yes

I adjust for firm-level clustering when calculating the standard errors. *, **, *** indicate significance at 10%, 5%, 1% level, (two-tailed), respectively.

Table11 Logistic regressions of small earnings increases on different types of fair value assets and liabilities: the impact of AFS assets

Variables	Small earnings increases		Small earnings increases one-year ahead	
Intercept	-0.676	-0.437	-0.593	-0.453
	(0.402)	(0.588)	(0.520)	(0.621)
PUBLIC	-0.058	-0.027	-0.225	-0.194
	(0.666)	(0.843)	(0.156)	(0.220)
L1LOAN	-21.191	-23.323	-166.100	-164.200
	(0.136)	(0.108)	(0.073)*	(0.078)*
L2LOAN	-11.914	-13.820	-21.324	-23.233
	(0.252)	(0.218)	(0.031)**	(0.021)**
L3LOAN	-19.156	-19.288	-3.464	-3.691
	(0.172)	(0.146)	(0.246)	(0.211)
L1TRADEA	-14.068	-13.110	-58.731	-58.815
	(0.508)	(0.548)	(0.099)*	(0.114)
L2TRADEA	5.703	5.547	**15.588**	**16.050**
	(0.216)	(0.202)	**(0.006)*** **	**(0.004)*** **
L3TRADEA	-101.000	-100.800	-53.209	-54.135
	(0.179)	(0.185)	(0.635)	(0.630)
L1AFS	0.459	-0.759	-0.689	-1.622
	(0.499)	(0.232)	(0.401)	(0.035)**
L2AFS	**1.924**		**1.435**	
	(0.000)* **		**(0.012)** **	
L3AFS	-7.473	-6.332	-9.536	-8.716
	(0.186)	(0.178)	(0.197)	(0.184)
L1FED	19.782	37.892	40.620	55.177
	(0.208)	(0.024)**	(0.031)**	(0.003)***
L2FED	10.428	12.804	9.993	14.370
	(0.587)	(0.511)	(0.757)	(0.650)
L3FED	-15.391	-56.358	-11.863	-22.904
	(0.895)	(0.715)	(0.879)	(0.818)
L1OTHERA	-50.795	-54.555	-95.203	-97.178
	(0.085)*	(0.068)*	(0.258)	(0.229)
L2OTHERA	-16.774	-19.777	-26.415	-28.443
	(0.380)	(0.312)	(0.228)	(0.194)
L3OTHERA	-11.793	-7.681	-19.037	-16.532
	(0.178)	(0.445)	(0.180)	(0.228)
L1DEPOSIT	8.624	10.456	13.340	14.736
	(0.419)	(0.331)	(0.522)	(0.467)

L2DEPOSIT	-0.044	1.796	6.088	6.320
	(0.998)	(0.928)	(0.705)	(0.682)
L3DEPOSIT	23.434	22.879	9.141	9.033
	(0.058)*	(0.053)*	(0.103)	(0.099)*
L1TRADEL	2.031	-2.190	-2.343	-4.215
	(0.954)	(0.950)	(0.958)	(0.927)
L2TRADEL	-0.210	-0.049	-7.848	-8.413
	(0.965)	(0.991)	(0.187)	(0.143)
L3TRADEL	169.700	154.300	201.200	198.600
	(0.416)	(0.470)	(0.536)	(0.546)
L1OTHERL	138.600	128.000	91.810	82.587
	(0.036)**	(0.037)**	(0.355)	(0.379)
L2OTHERL	-21.768	-22.896	-47.867	-50.081
	(0.233)	(0.208)	(0.101)	(0.085)*
L3OTHERL	-56.619	-52.407	-47.075	-45.913
	(0.081)*	(0.098)*	(0.392)	(0.393)
Log(ASSET)	-0.048	-0.041	-0.042	-0.035
	(0.410)	(0.481)	(0.529)	(0.599)
ΔASSET	-1.502	-0.582	-0.646	0.105
	(0.057)*	(0.441)	(0.479)	(0.905)
ΔCF	1.071	0.652	-4.642	-4.990
	(0.679)	(0.798)	(0.101)	(0.077)*
ΔNPL	-15.645	-16.413	-11.522	-12.097
	(0.000)***	(0.000)***	(0.026)**	(0.019)**
ΔLOANR	5.171	4.570	4.096	3.597
	(0.000)***	(0.000)***	(0.000)***	(0.002)***
ΔLOANC	0.909	0.467	0.498	0.124
	(0.621)	(0.799)	(0.829)	(0.957)
ΔLOAND	-0.038	-0.016	-0.690	-0.672
	(0.918)	(0.964)	(0.165)	(0.169)
ΔLOANA	2.015	0.740	5.184	4.270
	(0.799)	(0.927)	(0.582)	(0.648)
ΔLOANI	-4.028	-3.927	3.437	3.295
	(0.485)	(0.513)	(0.567)	(0.593)
ΔLOANO	5.017	5.606	5.945	6.433
	(0.284)	(0.259)	(0.322)	(0.297)
DLLP	-17.076	-19.258	-27.074	-28.540
	(0.000)***	(0.000)***	(0.000)***	(0.000)***
RSGL_AFS	16.553	40.054	40.486	55.411
	(0.543)	(0.167)	(0.175)	(0.075)*
RSGL_HTM	-329.700	-244.700	358.000	445.400

	(0.421)	(0.558)	(0.519)	(0.431)
d.v.=1	552	552	416	416
d.v.=0	2344	2344	1762	1762
N	2896	2896	2172	2172
Pseudo R-sq	0.099	0.090	0.100	0.095
Year variables	Yes	Yes	Yes	Yes
Firm clustering	Yes	Yes	Yes	Yes

I adjust for firm-level clustering when calculating the standard errors. *, **, *** indicate significance at 10%, 5%, 1% level, (two-tailed), respectively.

Table 12 Bank-years with small earnings changes before DLLP and DRSGL

Panel A: DLLP for bank-years with small changes in return on assets before DLLP

	ΔROA before DLLP just below 0 Mean[Median](Std dev.) of DLLP	ΔROA before DLLP just above 0 Mean[Median](Std dev.) of DLLP	Mean difference (p-value)
HFV	-0.0026 [-0.0031] (0.0058) N=138	-0.0001 [-0.0013] (0.0071) N=136	-0.0025 (0.002)***
LFV	-0.0006 [-0.0018] (0.0070) N=111	-0.0013 [-0.0009] (0.0068) N=139	0.0007 (0.449)
Mean difference between High and Low (p-value)	-0.0019 (0.019)**	0.0012 (0.155)	

*, **, *** indicate significance at 10%, 5%, 1% level, (two-tailed), respectively.

Panel B: DRSGL for bank-years with small changes in return on assets before DRSGL

	ΔROA before DRSGL just below 0 Mean[Median](Std dev.) of DRSGL	ΔROA before DRSGL just above 0 Mean[Median](Std dev.) of DRSGL	Mean difference (p-value)
HFV	0.0004 [0.0003] (0.0017) N=155	-0.0001 [-0.0002] (0.0014) N=218	0.0005 (0.001)***
LFV	0.0000 [-0.0002] (0.0010) N=136	-0.0002 [-0.0003] (0.0010) N=196	0.0002 (0.047)**
Mean difference between High and Low (p-value)	0.0004 (0.011)**	0.0001 (0.356)	

*, **, *** indicate significance at 10%, 5%, 1% level, (two-tailed), respectively.

Table 13 Logistic regressions of upward and downward earnings management on fair values

Variables	EM_UP1	EM_UP2	EM_DN1	EM_DN2
INTERCEPT	-1.841	-0.177	-1.595	-1.126
	(0.032)	(0.910)	(0.249)	(0.301)
PUBLIC	-0.223	0.269	0.261	-0.064
	(0.207)	(0.327)	(0.208)	(0.765)
L1FV	-0.423	-0.538	0.677	0.876
	(0.657)	(0.748)	(0.530)	(0.425)
L2FV	**2.140**	**2.696**	**0.730**	**1.796**
	(0.000)* **	**(0.007)*** **	**(0.320)**	**(0.009)*** **
L3FV	-2.402	-13.595	-11.027	-3.903
	(0.566)	(0.160)	(0.015)**	(0.465)
Log(ASSET)	-0.066	-0.269	-0.058	-0.123
	(0.302)	(0.022)**	(0.557)	(0.122)
ΔASSET	-1.164	-1.911	-2.000	0.328
	(0.230)	(0.230)	(0.076)*	(0.788)
ΔCF	-2.453	-0.508	0.874	-1.792
	(0.464)	(0.925)	(0.840)	(0.670)
ΔNPL	-24.427	-15.433	5.377	-6.108
	(0.000)***	(0.035)**	(0.393)	(0.333)
ΔLOANR	5.346	4.992	5.741	3.382
	(0.000)***	(0.011)**	(0.000)***	(0.014)**
ΔLOANC	0.476	1.877	-1.268	-0.634
	(0.827)	(0.597)	(0.726)	(0.814)
ΔLOAND	-0.380	-0.362	-0.261	-0.290
	(0.271)	(0.505)	(0.693)	(0.603)
ΔLOANA	-4.095	-16.878	4.639	5.230
	(0.692)	(0.238)	(0.695)	(0.671)
ΔLOANI	-12.247	5.046	5.112	5.007
	(0.060)*	(0.610)	(0.587)	(0.464)
ΔLOANO	1.569	0.423	8.739	12.381
	(0.762)	(0.965)	(0.275)	(0.036)**
DLLP	-90.641	-7.073	61.224	-25.999
	(0.000)***	(0.438)	(0.000)***	(0.001)***
DRSGL	-19.699	654.400	54.899	-389.200
	(0.570)	(0.000)***	(0.326)	(0.000)***
d.v.=1	313	107	162	195
d.v.=0	2583	2789	2734	2701

N	2896	2896	2896	2896
Pseudo R-sq	0.137	0.188	0.147	0.132
Year variables	Yes	Yes	Yes	Yes
Firm clustering	Yes	Yes	Yes	Yes

I adjust for firm-level clustering when calculating the standard errors. *, **, *** indicate significance at 10%, 5%, 1% level, (two-tailed), respectively.

Table 14 Logistic regression of small earnings increase on fair value variables: Public vs. Private

Panel A: Subsample of public banks

Variables	Small earnings increases			
INTERCEPT	0.537	0.190	0.450	0.116
	(0.571)	(0.851)	(0.634)	(0.908)
L1FV	0.549		0.433	
	(0.824)		(0.861)	
L2FV	**2.685**		**2.578**	
	(0.001)* **		**(0.001)*** **	
L3FV	-9.418		-9.596	
	(0.082)*		(0.085)*	
L1HFV		-0.133		-0.131
		(0.469)		(0.477)
L2HFV		**0.427**		**0.395**
		(0.023) **		**(0.034)** **
L3HFV		-0.320		-0.319
		(0.090)*		(0.094)*
Log(ASSET)	-0.132	-0.074	-0.126	-0.070
	(0.045)**	(0.299)	(0.055)*	(0.322)
ΔASSET	-2.831	-2.431	-2.641	-2.241
	(0.016)**	(0.038)**	(0.021)**	(0.051)*
ΔCF	9.989	9.708	9.580	9.299
	(0.032)**	(0.026)**	(0.040)**	(0.033)**
ΔNPL	-21.556	-20.305	-23.150	-21.991
	(0.000)***	(0.000)***	(0.000)***	(0.000)**8
ΔLOANR	5.076	4.494	4.980	4.411
	(0.001)***	(0.003)***	(0.001)***	(0.004)***
ΔLOANC	0.475	0.345	0.404	0.266
	(0.873)	(0.911)	(0.891)	(0.930)
ΔLOAND	0.018	0.084	0.007	0.060
	(0.977)	(0.887)	(0.992)	(0.921)
ΔLOANA	4.733	9.619	4.435	9.151
	(0.805)	(0.664)	(0.818)	(0.679)
ΔLOANI	-2.813	-4.878	-2.618	-4.532
	(0.713)	(0.541)	(0.733)	(0.569)
ΔLOANO	3.057	5.328	2.603	4.701
	(0.652)	(0.465)	(0.704)	(0.522)
DLLP	-5.213	-9.026	-6.609	-10.423
	(0.468)	(0.191)	(0.363)	(0.137)

DRSGL	-47.324	-40.438		
	(0.301)	(0.387)		
RSGL			24.618	41.142
			(0.561)	(0.357)
d.v.=1	209	209	209	209
d.v.=0	895	895	895	895
N	1104	1104	1104	1104
Pseudo R-sq	0.109	0.101	0.109	0.101
Year variables	Yes	Yes	Yes	Yes
Firm clustering	Yes	Yes	Yes	Yes

I adjust for firm-level clustering when calculating the standard errors. *, **, *** indicate significance at 10%, 5%, 1% level, (two-tailed), respectively.

Panel B: Subsample of private banks

Variables	Small earnings increases			
INTERCEPT	-2.874	-3.035	-2.834	-2.993
	(0.019)**	(0.011)**	(0.021)**	(0.012)**
L1FV	0.365		0.313	
	(0.635)		(0.685)	
L2FV	**1.461**		**1.422**	
	(0.012)**		**(0.015)****	
L3FV	-2.430		-2.242	
	(0.458)		(0.490)	
L1HFV		0.034		0.028
		(0.820)		(0.849)
L2HFV		**0.303**		**0.293**
		(0.042)**		**(0.050)****
L3HFV		-0.046		-0.035
		(0.759)		(0.819)
Log(ASSET)	0.102	0.121	0.099	0.118
	(0.247)	(0.159)	(0.261)	(0.173)
ΔASSET	-0.650	-0.358	-0.610	-0.325
	(0.530)	(0.713)	(0.554)	(0.739)
ΔCF	-1.823	-2.083	-1.941	-2.198
	(0.560)	(0.502)	(0.534)	(0.477)
ΔNPL	-7.724	-8.107	-9.601	-9.956
	(0.149)	(0.127)	(0.074)*	(0.063)*
ΔLOANR	4.618	4.376	4.720	4.491
	(0.000)***	(0.000)***	(0.000)***	(0.000)***
ΔLOANC	0.120	-0.170	0.074	-0.206
	(0.957)	(0.939)	(0.973)	(0.926)
ΔLOAND	-0.322	-0.300	-0.321	-0.300
	(0.379)	(0.399)	(0.381)	(0.400)
ΔLOANA	0.790	0.519	0.775	0.476
	(0.927)	(0.952)	(0.929)	(0.957)
ΔLOANI	-3.423	-3.870	-3.454	-3.863
	(0.650)	(0.608)	(0.650)	(0.613)
ΔLOANO	8.215	8.144	8.130	8.054
	(0.156)	(0.163)	(0.160)	(0.168)
DLLP	-25.217	-25.948	-25.937	-26.619
	(0.000)***	(0.000)***	(0.000)***	(0.000)***
DRSGL	-27.952	-27.236		
	(0.433)	(0.446)		
RSGL			17.511	20.476

			(0.593)	(0.537)
d.v.=1	343	343	343	343
d.v.=0	1449	1449	1449	1449
N	1792	1792	1792	1792
Pseudo R-sq	0.070	0.067	0.069	0.067
Year variables	Yes	Yes	Yes	Yes
Firm clustering	Yes	Yes	Yes	Yes

I adjust for firm-level clustering when calculating the standard errors. *, **, *** indicate significance at 10%, 5%, 1% level, (two-tailed), respectively.

Table 15 Bank-years which elect fair value options and recognize change in fair values in earnings under fair value options: logistic regression of small earnings increase on fair value variables

VARIABLE	Small earnings increases		
INTERCEPT	-1.010	-0.631	-1.246
	(0.528)	(0.742)	(0.445)
PUBLIC	-0.269	-0.142	-0.203
	(0.568)	(0.774)	(0.650)
L1FV	0.607		
	(0.732)		
L2FV	-0.012		
	(0.994)		
L3FV	-2.558		
	(0.652)		
L1HFV		0.315	
		(0.472)	
L2HFV		-0.489	
		(0.167)	
L3HFV		0.144	
		(0.782)	
ΔL1FV			-10.368
			(0.120)
ΔL2FV			-0.359
			(0.875)
ΔL3FV			-10.644
			(0.483)
Log(ASSET)	-0.007	-0.043	0.001
	(0.954)	(0.777)	(0.990)
ΔASSET	-2.192	-1.735	-2.185
	(0.425)	(0.557)	(0.545)
ΔCF	11.758	11.980	15.799
	(0.264)	(0.262)	(0.212)
ΔNPL	-18.152	-16.159	-19.224
	(0.066)*	(0.084)*	(0.083)*
ΔLOANR	4.962	4.534	5.668
	(0.162)	(0.204)	(0.195)
ΔLOANC	5.206	5.654	4.298
	(0.308)	(0.295)	(0.425)
ΔLOAND	0.641	0.820	0.564

	(0.325)	(0.255)	(0.376)
ΔLOANA	8.488	-1.554	8.457
	(0.804)	(0.963)	(0.812)
ΔLOANI	9.127	10.316	7.667
	(0.371)	(0.337)	(0.450)
ΔLOANO	5.908	5.120	3.195
	(0.562)	(0.636)	(0.794)
DLLP	-12.550	-13.328	-3.938
	(0.425)	(0.403)	(0.804)
DRSGL	-52.112	-55.624	-33.542
	(0.515)	(0.505)	(0.748)
d.v.=1	56	56	53
d.v.=0	268	268	258
N	324	324	311
Pseudo R-sq	0.094	0.107	0.120
Likelihood ratio	18.788	21.602	23.159
p-value	0.471	0.305	0.185
Year variables	Yes	Yes	Yes
Firm clustering	Yes	Yes	Yes

I adjust for firm-level clustering when calculating the standard errors. *, **, *** indicate significance at 10%, 5%, 1% level, (two-tailed), respectively.

Table 16 OLS regression of net changes in fair values recognized in earnings under fair value option

$$NCFV_{it} = \alpha + \beta_1 PUBLIC + \beta_2 IBFV_{it} + \beta_3 L1HFVA_{it} + \beta_4 L2HFVA_{it} + \beta_5 L3HFVA_{it} + \beta_6 L1HFVL_{it} + \beta_7 L2HFVL_{it} + \beta_8 L3HFVL_{it} + \beta_9 \Delta DLLP_{it} + \beta_{10} DRSGL_{it} + \beta_{11} Log(ASSETS)_{it} + \beta_{12} CAPITAL\_FVO_{it} + YEARDUMMY_{it} + \varepsilon_{it}$$

Variables	NCFV
INTERCEPT	0.000
	(0.813)
PUBLIC	0.000
	(0.963)
IBFV	**-0.035**
	(0.020)**
L1FVA	0.002
	(0.576)
L2FVA	**0.004**
	(0.034)**
L3FVA	0.011
	(0.101)
FVL	-0.021
	(0.000)***
DLLP	-0.034
	(0.025)**
DRSGL	-0.019
	(0.759)
Log(ASSETS)	0.000
	(0.699)
CAPITAL_FVO	-0.009
	(0.187)
N	324
Adj R-sq	0.175
Year variables	Yes
Firm clustering	Yes

I adjust for firm-level clustering when calculating the standard errors. *, **, *** indicate significance at 10%, 5%, 1% level, (two-tailed), respectively.

Table 17 Bank-years which recognize nonzero realized gains and losses on available-for-sale assets: logistic regression of small earnings increase on fair value variables

Variables	Small earnings increases		
INTERCEPT	-0.197	-0.530	-0.406
	(0.766)	(0.444)	(0.549)
L1FV	0.898		
	(0.198)		
L2FV	**2.186**		
	(0.000)* **		
L3FV	-5.494		
	(0.098)*		
L1HFV		-0.053	
		(0.656)	
L2HFV		**0.330**	
		(0.007)* **	
L3HFV		-0.236	
		(0.058)*	
ΔL1FV			-0.227
			(0.780)
ΔL2FV			**2.117**
			(0.009)* **
ΔL3FV			-0.504
			(0.645)
Log(ASSET)	-0.092	-0.043	-0.050
	(0.052)	(0.400)	(0.294)
ΔASSET	-1.374	-0.823	-1.261
	(0.092)	(0.300)	(0.175)
ΔCF	2.059	1.568	5.716
	(0.452)	(0.557)	(0.049)**
ΔNPL	-14.808	-14.134	-16.006
	(0.000)***	(0.000)***	(0.001)***
ΔLOANR	4.881	4.366	4.965
	(0.000)***	(0.000)***	(0.000)***
ΔLOANC	0.481	0.150	0.475
	(0.802)	(0.937)	(0.808)
ΔLOAND	-0.016	0.020	0.035
	(0.960)	(0.948)	(0.915)
ΔLOANA	6.974	6.718	2.392
	(0.401)	(0.428)	(0.789)
ΔLOANI	-3.182	-4.546	-2.923

	(0.567)	(0.422)	(0.603)
ΔLOANO	5.315	6.431	6.299
	(0.262)	(0.198)	(0.215)
DLLP	-15.085	-17.519	-9.063
	(0.002)***	(0.000)***	(0.070)*
DRSGL	-38.900	-37.886	-56.872
	(0.158)	(0.174)	(0.063)*
d.v.=1	492	492	492
d.v.=0	2005	2005	2005
N	2497	2497	2497
Pseudo R-sq	0.079	0.071	0.069
Year variables	Yes	Yes	Yes
Firm clustering	Yes	Yes	Yes

I adjust for firm-level clustering when calculating the standard errors. *, **, *** indicate significance at 10%, 5%, 1% level, (two-tailed), respectively.

Table 18 OLS regression of earnings volatility on fair value variables

$$Volatility_i = \alpha + \beta_1 PUBLIC_i + \beta_2 FV_i/HFV_i + \beta_3 \log(ASSETS) + \beta_4 LEVERAGE_i + \varepsilon_i$$

Variables	Earnings Volatility			
INTERCEPT	-0.022	-0.021	-0.022	-0.020
	(0.000)***	(0.000)***	(0.000)***	(0.000)***
PUBLIC	0.001	0.001	0.001	0.001
	(0.007)***	(0.003)***	(0.008)***	(0.010)***
FV	**-0.002**			
	(0.029)**			
L1FV		-0.003		
		(0.027)**		
L2FV		**-0.004**		
		(0.000)***		
L3FV		0.018		
		(0.002)***		
HFV			**-0.001**	
			(0.004)***	
L1HFV				0.000
				(0.327)
L2HFV				**-0.001**
				(0.003)***
L3HFV				0.001
				(0.001)***
Log(ASSET)	0.000	0.000	0.000	0.000
	0.359	0.424	0.328	0.984
LEVERAGE	0.026	0.025	0.026	0.024
	(0.000)***	(0.000)***	(0.000)***	(0.000)***
N	724	724	724	724
Adjusted R-sq	0.061	0.081	0.066	0.074

*, **, *** indicate significance at 10%, 5%, 1% level, (two-tailed), respectively.

References

Ahmed, A.S., C. Takeda, and S. Thomas. 1999. Bank loan loss provisions: A reexamination of capital management, earnings management and signaling effects. *Journal of Accounting and Economics* 28 (1): 1-25.

Barth, M. E. 1994. Fair value accounting: Evidence from investment securities and the market valuation of banks. *The Accounting Review* 69 (1): 1-25.

Barth, M. E., W. R. Landsman, and J. M. Wahlen. 1995. Fair value accounting: Effects on banks' earnings volatility, regulatory capital, and value of contractual cash flows. *Journal of Banking and Finance* 19 (3-4): 577-605.

Barth, M. E., W. H. Beaver, and W. R. Landsman. 1996. Value-relevance of banks' fair value disclosures under SFAS No. 107. *The Accounting Review* 71 (4): 513-537.

Barth, M. E., J. Gomez-Biscarri, R. Kasznik and G. Lopez-Espinosa. 2012. Fair value accounting, earnings management and the use of available-for-sale instruments by bank managers. Working paper, Stanford University.

Beatty, A., B. L. Chamberlain, and J. Magliolo. 1995. Managing financial reports of commercial banks: The influence of taxes, regulatory capital, and earnings. *Journal of Accounting Research* 33 (2): 231-261.

Beatty, A., and D. G. Harris. 1999. The effects of taxes, agency costs and information asymmetry on earnings management: A comparison of public and private firms. *Review of Accounting Studies* 3 (3-4): 299-326.

Beatty, A. L., B. Ke, and K. R. Petroni. 2002. Earnings management to avoid earnings declines across publicly and privately held banks. *The Accounting Review* 77 (3): 547-570.

Beaver, W. H., and E. E. Engel. 1996. Discretionary behavior with respect to allowances for loan losses and the behavior of security prices. *Journal of Accounting and Economics* 22 (1-3): 177-206.

Benson, B. and M. Teclezion. 2007. The status of fair value accounting. *iNews* winter, issue 1. iComp L.L.C.

Benston, G. J. 2008. The shortcomings of fair-value accounting described in SFAS 157. *Journal of Accounting and Public Policy* 27 (2): 101-114.

Blankespoor, E., T. J. Linsmeier, K. Petroni and C. Shakespeare. 2013. Fair value accounting for financial instruments: Does it improve the association between bank leverage and credit risk? *The Accounting Review*. Forthcoming.

Board of Governors of the Federal Reserve System. 2007. Instructions for preparation of consolidated financial statements for bank holding companies. Chicago, IL.

Bratten, B., M. Causholli and L. Myers. 2012. The effect of fair value accounting and auditor specialization on earnings management: evidence from the banking industry. Working Paper, University of Kentucky.

Burgstahler, D., and I. Dichev. 1997. Earnings management to avoid earnings decreases and losses. *Journal of Accounting and Economics* 24 (December): 99-126.

Chen, F., K. Lam, W. Smieliauskas, and M. Ye. 2010. Fair value measurements and auditor versus management conservatism: Evidence from the banking industry. Working Paper, University of Toronto.

Collins, J., D. Shackelford, and J. Wahlen. 1995. Bank differences in the coordination of regulatory capital, earnings, and taxes. *Journal of Accounting Research* 33 (2): 263-291.

Dechow, P., L. Myers, and C. Shakespeare. 2010. Fair Value Accounting and Gains from Asset Securitizations: A Convenient Earnings Management Tool with Compensation Side-Benefits. *Journal of Accounting and Economics* 49 (1): 2-25.

Degeorge, F., J. Patel, and R. Zeckhauser. 1999. Earnings Management to Exceed Thresholds. *Journal of Business* 72 (1): 1-33.

Ettredge, M., Y. Xu, and H. Yi. 2010. Fair value measurements, auditor industry expertise and audit fees: Evidence from the banking industry. Working Paper, University of Kansas.

Fiechter, P., and C. Meyer. 2010. Big bath accounting using fair value measurement discretion during the financial crisis. Working Paper, University of Zurich.

Financial Accounting Standards Board (FASB). 2006. *Fair Value Measurements.* Statement of Financial Accounting Standards No. 157. Norwalk, CT.

Financial Accounting Standards Board (FASB). 2007. *The Fair Value Option for Financial Assets and Financial Liabilities.* Statement of Financial Accounting Standards No. 159. Norwalk, CT.

Graham, J., C. Harvey, and S. Rajpopal. 2005. The economic implications of corporate financial reporting. *Journal of Accounting and Economics* 40: 3-37.

Heflin, F. and A. Valencia. 2012. Opportunistic behavior using level 3 fair values under SFAS 157. Working paper, Florida State University.

Kanagaretnam, K., G. J. Lobo, and R. Mathieu. 2003. Managerial incentives for income smoothing through bank loan loss provisions. *Review of Quantitative Finance and Accounting* 20 (1): 63-80.

Kanagaretnam, K., G. V. Krishnan, and G. J. Lobo. 2009. Is the market valuation of banks' loan loss provision conditional on auditor reputation? *Journal of Banking and Finance* 33 (6): 1039-1047.

Kim, M. and W. Kross. 1998. The impact of the change in bank capital standards on loan loss provisions and loan write-offs. *Journal of Accounting and Economics* 25 (1): 69-99.

Liang, L. and E. Riedl. 2011. The impact of firm-supplied versus user-supplied fair values on analyst outputs. Working paper, Syracuse University.

Liao, L., H. Kang, R. Morris, and Q. Tang. 2010. Information asymmetry of fair value accounting and loan loss provisions during the global financial crisis. Working Paper, University of New South Wales.

Lobo, G. J and D. Yang. 2001. Bank managers' heterogeneous decisions on discretionary loan loss provisions. *Review of Quantitative Finance and Accounting* 16 (3): 223-250

Martin, R. D., J. S. Rich., and T. J. Wilks. 2006. Auditing fair value measurements: A synthesis of relevant research. *Accounting Horizons* 20 (3): 287-303.

Moyer, S. 1990. Capital adequacy ratio regulations and accounting choices in commercial banks. *Journal of Accounting and Economics* 13 (2): 123-154.

Nelson, K. K. 1996. Fair value accounting for commercial banks: An empirical analysis of SFAS No. 107. *The Accounting Review* 71 (2): 161-182.

Nichols, D.C., J. M. Wahlen and M. M. Wieland. 2009. Publicly traded versus privately held: Implications for conditional conservatism in bank accounting. *Review of Accounting Studies* 14 (1): 88-122.

Riedl, E. J., and G. Serafeim. 2011. Information Risk and Fair Values: An Examination of Equity Betas. *Journal of Accounting Research* 49 (4): 1083-1122.

Ryan, S. G. 2007. Financial instruments and institutions: Accounting and disclosure rules, 2nd edition. John Wiley & Sons, Inc., New Jersey.

Ryan, S. G. 2008. Accounting in and for the subprime crisis. *The Accounting Review* 83 (6): 1605-1638.

Scholes, M.S., G.P. Wilson, and M.A. Wolfson. 1990. Tax planning, regulatory capital planning, and financial reporting strategy for commercial banks. *The Review of Financial Studies* 3 (4): 625-650.

Song, C. J. 2008. An evaluation of FAS 159 fair value option: Evidence from the banking industry. Working Paper, Virginia Polytechnic Institute and State University.

Song, C. J., W. Thomas, and H. Yi. 2010. Value relevance of FAS 157 fair value hierarchy information and the impact of corporate governance mechanisms. *The Accounting Review* 85 (4): 1375-1410.

Wahlen, J. M. 1994. The nature of information in commercial bank loan loss disclosures. *The Accounting Review* 69 (3): 455-478.

Warfield, T.D, J. J. Wild, and K. L. Wild. 1995. Managerial ownership, accounting choices, and informativeness of earnings. *Journal of Accounting and Economics* 20 (1): 61-91.

Curriculum Vitae

Xiaolu Xu

Education

PhD in Accounting Syracuse University June 2013 (Expected)

MA in Economics Binghamton University January 2007

BBA in Auditing Nanjing Audit University June 2005

Publication

"The effects of accounting restatements on firm growth" Co-authored with Susan Albring, Shawn Huang and Raynolde Pereira; *Journal of Accounting and Public Policy*, Forthcoming

Teaching Experience

2011-2013 Introduction to Financial Accounting Syracuse University

2007-2008 Microeconomics/Macroeconomics Broome Community College

Awards and Honors

2011 AAA/Deloitte Foundation/J. Michael Cook Doctoral Consortium Fellow

2008-2013 Syracuse University School of Management Summer Research Grant

2008-2013 Syracuse University Graduate Assistantship

Professional Affiliations

American Accounting Association

Association of Chartered Certified Accountants (Student Member)