Fair Value Exposure, Auditor Specialization, and Banks' Discretionary Use of the Loan Loss Provision

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ABSTRACT

In this study, we examine whether banks' use of the loan loss provision (LLP) to manage earnings is associated with 1) the extent to which banks hold assets subject to fair value reporting and 2) the use of an industry specialist auditor. We find that banks with a greater proportion of assets subject to fair value reporting (i.e., higher fair value exposure) use less LLP-based earnings management but more transaction-based earnings management (i.e., earnings management achieved by timing the realization of gains/losses). We also find that banks engaging industry specialist auditors use less LLP-based earnings management. Our findings suggest that banks' use of the LLP to manage earnings is more limited when they have access to alternative earnings management tools and when they engage an auditor with more industry knowledge. Our results should be informative to regulators, members of the banking industry, and academics interested in the earnings management behavior of banks.

JEL descriptors: M4, M41, M42

Keywords: Fair Value Accounting, Auditor Specialization, Earnings Management, Loan Loss Provision

Data Availability: Data are publicly available from sources identified in the text.

Introduction

One of the main ways that banks achieve smooth earnings streams is by exercising discretion over the loan loss provision (LLP), which we refer to as *LLP-based* earnings management. LLP-based earnings management can be costly because it can attract regulatory attention (U.S. GAO, 1994; Liu & Ryan, 2006). Prior research finds that banks rely less on the LLP to manage earnings when they have alternative earnings management tools. In this paper, we hypothesize that bank holdings of financial assets exposed to fluctuations in fair value facilitate the use of realized gains and losses to manage earnings, allowing banks to escape the regulatory scrutiny associated with LLP-based earnings management. We examine whether the extent to which banks use LLP-based earnings management is reduced when they can engage in the sale of financial assets subject to fair value reporting.[1] We also examine how banks trade off LLP-based earnings management with discretion over the timing of realized gains and losses on the sale of investments, which we refer to as *transaction-based* earnings management. Finally, because prior research finds that auditor industry specialization mitigates accrual-based earnings management (Balsam, Krishnan, & Yang, 2003) and clients with higher quality auditors may engage in more transaction-based earnings management (Chi, Lisic, & Pevzner, 2011), we examine the association between auditor specialization, LLP-based earnings management, and fair value exposure.

We focus on the banking industry because of the critical role that banks play in the economy and, more importantly, because of concerns about the financial reporting quality (and ultimate viability) of banks. Prior research suggests that managers in the banking industry use the increased flexibility allowed under fair value rules to make self-serving choices, which reduces

[1] Fair value reporting is required through recognition for some assets; for others, fair values need only be disclosed. Our measure of fair value exposure captures variation in the portfolio of bank asset holdings, not simply fair value accounting. Thus, we suggest that it proxies for banks' opportunity set to manage earnings.

the quality of accounting information (Dechow & Shakespeare, 2009; Dechow, Myers, & Shakespeare, 2010; Kilic, Lobo, Ranasinghe, & Sivaramakrishnan, 2013).[2] We posit that their ability to use transaction-based earnings management depends, in part, on the extent to which banks hold assets exposed to fair value changes. Providing evidence on the association between bank exposure to fair values and the use of discretion in the LLP is our first contribution.

We follow Nissim and Penman (2007), Khan (2014), and Xie (2016) and measure the fair value exposure as the proportion of their assets and liabilities reported at fair value.[3] We posit that banks with a high proportion of their assets and liabilities subjected to fair value reporting have additional flexibility in managing earnings through realized gains or losses, so we examine whether the level of exposure to fair value is associated with the form of earnings management chosen. Specifically, we examine the extent to which exposure to fair value influences management discretion in estimating the LLP to smooth earnings.

The banking industry also provides a unique context in which to study the effects of auditor specialization because of the complexity of transactions and the extensive accounting and auditing knowledge required to audit banks (AICPA 2003, 2012). In addition, examining the role of auditors in the banking industry is important because of recent concerns about the auditing of fair values (Bratten, Gaynor, McDaniel, Montague, & Sierra, 2013). We expect auditor specialization to reduce LLP-based earnings management, especially for banks that rely mostly on LLP-based earnings management to smooth their earnings because these banks have less opportunity to use transaction-based earnings management tools. Providing evidence that the

[2] Although the samples in Dechow and Shakespeare (2009) and Dechow et al. (2010) are not comprised exclusively of banks, financial institutions comprise a large portion of their samples.

[3] Although we intend to capture the extent to which banks are exposed to fair value accounting and how this exposure affects their use of earnings management tools, we acknowledge that our fair value measures also capture variation in the portfolio of bank asset holdings and do not speak to the accounting for these assets per se. That is, our study does not provide evidence on the "type" of fair value accounting system or speak to costs or benefits of requiring that changes in the fair value of assets be recorded on the balance sheet and/or income statement.

extent to which auditor specialization mitigates LLP-based earnings management is associated with the extent of bank exposure to fair value reporting is our second contribution.

We report three main findings. First, we find that our proxy for earnings management flexibility (hereafter, fair value exposure) is negatively associated with the use of the discretionary portion of the LLP to smooth earnings. Second, banks with more fair value exposure exhibit a greater trade-off between LLP-based earnings management and transaction-based earnings management. Finally, auditor specialization is negatively associated with use of the LLP to smooth earnings, and this association is decreasing in fair value exposure.

Collectively, we extend prior literature by providing insights about how banks manage earnings using the LLP depending on the availability of alternative earnings management tools and whether they are audited by industry specialist auditors. Our findings should be of interest to researchers, regulators, and standard setters because they provide evidence that assets reported at fair value present opportunities for transaction-based earnings management and, thus, strategic behavior. In addition, we complement prior research examining the role of auditors in the banking industry by providing evidence that industry specialist auditors mitigate accrual-based earnings management. Our findings on the role of auditors should also be of interest to auditing regulators as they consider ways to increase audit quality in the banking sector because they suggest that auditor industry specialization is one such alternative.

Prior research and development of hypotheses

Earnings smoothing in the banking industry

Prior research posits that managers prefer smooth earnings streams for several reasons (Collins, Shackelford, & Wahlen, 1995; Liu and Ryan, 2006; Myers, Myers, & Skinner, 2007). First, managers may believe that investors require a higher risk premium when earnings are

volatile (Graham, Harvey, & Rajgopal, 2005; Erickson, Hewitt, & Maines, 2017).[4] Second, managers can increase their compensation by reporting smoother earnings (Joyce, 1996; Cheng, Warfield, & Ye, 2011; Ramanna and Watts, 2012). Third, smoother earnings improve access to external financing (Barth, Landsman, & Wahlen, 1995; Kanagaretnam, Lobo, & Mathieu, 2004) and events expected to increase bank volatility are associated with negative returns (Beatty Chamberlain, & Magliolo, 1996).

The LLP is the largest and most salient accrual for banks, and hence, most prior research on earnings management in the banking industry focuses primarily on the LLP.[5] Under the incurred loss model (which was in place throughout our sample period), the LLP reflects managers' current estimates of the non-collectability of loans that will be realized in the future when borrowers are unable to make loan payments, so estimation of the LLP relies extensively on the judgment of managers.[6] When earnings absent the discretionary choices of management (hereafter, "pre-managed earnings") are expected to be high, managers can use their discretion to overstate the LLP, resulting in lower reported earnings. Similarly, when pre-managed earnings are expected to be low, managers can understate the LLP, resulting in higher reported earnings.

Barth, Gómez-Biscarri, Kasznik, & López-Espinosa (2017) find that banks use realized gains and losses to smooth earnings, that the extent of earnings smoothing using realized gains and losses is positively associated with unrealized gains and losses on available-for-sale (AFS) securities, and that smoothing reduces earnings quality. In contrast, our study focuses on banks' use of the LLP to smooth earnings, and whether this is affected by the extent to which banks

[4] Francis, LaFond, Olsson, & Schipper (2004) find a negative relation between earnings smoothness and the cost of capital but McInnis (2010) suggests that this relation is driven by optimism in analysts' long-term earnings forecasts rather than a risk premium. However, management's *belief* that smooth earnings are associated with a lower risk premium may provide a sufficient incentive to induce earnings smoothing.

[5] See, for example, Moyer (1990), Beatty, Chamberlain, & Magliolo (1995b), Collins et al., (1995), Ahmed, Takeda, & Thomas (1999), Beatty, Ke, & Petroni (2002), Kanagaretnam, Lobo, & Mathieu (2003, 2004), Liu & Ryan (2006), Cheng et al. (2011), and Bushman & Williams (2012).

[6] See Beatty & Liao (2011) and Bushman & Williams (2012) for additional discussion of the incurred loss model.

hold alternative financial assets that they can use to smooth earnings or by whether the bank is audited by an industry specialist auditor.

Regulation and Earnings Management in Banks

Managers may not prefer to use the LLP to manage earnings because of the potential for regulatory intervention associated with managing earnings through the LLP. Subsequent to early studies examining earnings smoothing, two major regulatory interventions have affected the extent to which bank managers can use the LLP to manage earnings. First, the Federal Deposit Insurance Corporation Improvement Act of 1992 (FDICIA) required managers of financial institutions with assets greater than $500 million (increased to $1 billion in 2005) to issue a report on the effectiveness of internal controls over financial reporting. This Act led to improvements in internal control and financial reporting quality of affected banks. For example, Altamuro & Beatty, 2010 find that FDICIA's internal control requirements increased the validity of the LLP, improved earnings quality, and reduced the likelihood of meeting or beating earnings benchmarks. In addition, the Sarbanes-Oxley Act of 2002 required banks (and other public companies) to provide auditor attestation on the effectiveness of internal controls.

Second, in response to bank attempts to engage in upwards earnings management in the 1990s, the U.S. Securities and Exchange Commission (SEC) devotes considerable attention to how bank managers use their discretion in calculating the LLP. For example, in 1998, the SEC ordered Sun Trust Bank to trim the LLP it reported from 1994 through 1996, resulting in upward earnings restatements. In addition, the Government Accountability Office (GAO) has expressed concerns that banks are smoothing income by overstating the LLP when pre-managed earnings are high (Liu & Ryan, 2006). In 2001, the SEC issued Staff Accounting Bulletin 102 which required banks to validate their estimated loan losses by comparing them to eventual charge-offs (SEC, 2001). Scrutiny of the LLP by the SEC, the GAO, and others could lead banks to find

other means to smooth earnings, including transaction-based earnings management.

Furthermore, under the incurred loss model, loan types can affect earnings management.[7] For example, there is more managerial discretion associated with heterogeneous loans (e.g., commercial loans) because these loans must be individually evaluated by applying judgment about collectability. There is less discretion associated with homogeneous loans (e.g., consumer loans) because they are evaluated at the portfolio level, using statistical models based on historical losses (Liu & Ryan, 2006). Given increased regulation of financial reporting over time and the difference in discretion across loan types, we posit that bank size, regulation, and loan types are likely to affect the incentives and ability of bank managers to engage in earnings management, and thus we control for these determinants in our analyses.

The extent to which bank managers trade off the use of LLP-based and transaction-based earnings management tools is likely to depend on their relative costs and effectiveness. Moyer (1990) suggests that bank managers choose different earnings management tools, including the LLP, loan charge-offs, and securities gains and losses, depending on regulatory and political costs. Moyer (1990) does not explicitly test for a relation amongst the use of these three tools, but reports a positive association. Although not the focus of the study, Scholes, Wilson, and Wolfson (1990) report a positive association between realized securities gains and the loan loss provision, but do not estimate the association between the discretionary components of these earnings management tools. Beatty, Chamberlain, & Magliolo (1995b) formally acknowledge that managers' use of one type of earnings management tool may depend on their use of other types. They examine how the various tools jointly affect capital, tax, and earnings outcomes. Collins et al. (1995) separately examine the use of the LLP and realized gains and losses and

[7] Specifically, under the incurred loss model, credit losses are recognized when it is "probable" that a loss has incurred. In contrast, under the new current expected credit loss model, effective for fiscal years beginning after December 2019, banks are required to use historical information, current conditions, and reasonable forecasts to recognize "expected" losses.

assess the relation between the discretionary tools by correlating regression coefficients from each earnings management tool; they find that banks use both the LLP and gains and losses to manage capital. More recently, Zang (2012) documents that in a non-bank setting, firms use less accrual-based earnings management and rely more on transaction-based earnings management when the costs of accrual-based earnings management are higher, consistent with the notion that firms trade-off between earnings management tools depending on their relative costs.[8] We extend recent literature examining the trade-off between earnings management tools by examining determinants of this trade-off and whether auditor specialization plays a role.

LLP-based earnings management and fair value exposure

We argue that to avoid increased regulatory scrutiny and still report smoother earnings, banks trade off LLP-based earnings management with transaction-based earnings management. We extend prior research and suggest that holding alternative financial assets exposed to changes in fair value provides banks a different set of tools to use for smoothing earnings. At the extreme, banks holding a low proportion of alternative assets have few opportunities to smooth earnings and rely primarily on the LLP. Given regulatory and potential auditor scrutiny of the LLP, these banks may not be able to make substantial smoothing adjustments. In contrast, banks holding a high proportion of these assets can use different smoothing mechanisms.

Holding more financial assets exposed to changes in fair value presents a different set of opportunities for banks to smooth earnings, but the direction of the association between this exposure and the LLP is an empirical question. For example, banks with significant trading activities can generate income through these activities, which may lead to less reliance on the

[8] Other papers examining the use of accrual versus transaction-based earnings management include Barton (2001) and Pincus and Rajgopal (2002) who find that companies use both accrual management and hedging to manage earnings. Cohen et al. (2008) show that firms trade off accrual-based earnings management with real activities management after the passage of the Sarbanes-Oxley Act, and Cohen and Zarowin (2010) show that accrual and real activities earnings management are positively associated in the year that companies make seasoned equity offerings.

LLP. Alternatively, unexpected fair value fluctuations in assets classified as trading securities may lead banks with significant trading activities to rely more on the LLP to smooth earnings. To the extent that banks hold more financial assets that are marked-to-market but with fair value changes not yet affecting income (such as AFS securities), they have more options to manage earnings (e.g., a greater variety of investments to sell and flexibility in the timing of these sales). Barth et al. (2017) find that higher levels of unrealized gains in AFS portfolios are associated with the increased use of realized gains and losses from these securities to smooth income and avoid losses. Holding securities classified as "held-to-maturity" could influence the use of LLP-based earnings management because the income from these securities could reduce volatility, and ultimately the need for certain banks to manage earnings.[9] Even the presence of securities such as mortgage-backed-securities suggests that banks have different opportunities beyond the LLP to manage earnings, but potentially more earnings volatility, increasing the need to smooth earnings. Kilic et al. (2013) find that banks which experience higher earnings fluctuations under Statement of Financial Accounting Standards (SFAS) 133 rely more on the LLP to manage earnings, relative to other banks.[10] Thus, banks with more assets exposed to fair value reporting could require larger or smaller adjustments to LLP-based earnings management in order to achieve smoother reported earnings.

These arguments lead to our first hypothesis, stated in the null:

H1: There is no association between the proportion of bank assets and liabilities reported at fair value (fair value exposure) and banks' use the LLP to smooth earnings.

Auditor industry specialization and earnings smoothing

[9] Banks also have discretion over whether they classify securities as held-to-maturity. Huizinga and Leven (2012) suggest that banks strategically classify mortgage-backed securities as held-to-maturity depending on the difference between fair value and amortized cost.

[10] SFAS 133 changed the accounting for derivatives by requiring that all hedging derivatives be recognized at fair value as well as requiring that any hedge ineffectiveness be recognized in income as it occurred. Prior to SFAS 133, managers had considerable latitude to ignore the ineffective portions of hedges and reduce earnings volatility.

Prior research suggests that auditors specialize in order to differentiate themselves from their competitors (Dunn and Mayhew, 2004). Auditors can specialize by investing in technology or personnel with industry-specific knowledge, and by capturing and sharing this knowledge with others in the audit firm. The accumulation of industry-specific knowledge can improve audit quality because industry specialists can better identify and detect errors or misstatements (Solomon, Shields, & Whittington, 1999; Owhoso, Messier, & Lynch, 2002) and more easily comply with auditing standards (O'Keefe, King, & Gaver, 1994).[11] Prior research also finds that clients of industry-specialist auditors are less likely to be the targets of SEC Enforcement Actions (Carcello & Nagy, 2004), have lower discretionary accruals and higher earnings response coefficients (Balsam et al., 2003; Lim & Tan, 2008; Gul, Fung, & Jaggi, 2009; Mascarenhas, Cahan, & Naiker, 2010; Reichelt & Wang, 2010; Chen, Chen, Lobo, & Wang, 2011), make more conservative accounting choices (Krishnan, 2005; Lim & Tan, 2009), and are less likely to meet or just beat earnings targets (Lim & Tan, 2008; Gul et al., 2009).

Prior research examines the role of professional skepticism and auditors' response to increased risk of material misstatements (see Hurtt, Brown-Liburd, Early, & Krishnamoorthy (2013) for a recent review). In addition, the PCAOB states that "the allowance for loan losses is one of the most significant estimates made by many issuers in the financial services industry," and "If auditors do not properly test issuers' estimates of the ALL (allowance for loan losses), auditors might fail to detect material misstatements in issuers' financial statements relating to loan portfolio values, and investors might be misled" (PCAOB 2010). The PCAOB also recommends that auditors consider management incentives to engage in earnings management when devising an audit plan (PCAOB 2010). Therefore, auditors should spend significant time

[11] Similarly, experience can improve error or misstatement detection (Tubbs, 1992; Hammersley, 2006) and can reduce auditor reliance on information communicated by management in an attempt to persuade auditor judgments (Kaplan, O'Donnell, & Arel, 2008).

and effort auditing the LLP, especially when incentives to manipulate the LLP are strong.

Following prior research, we expect auditor specialization to have a mitigating effect on LLP-based earnings management because industry-specific knowledge can be even more valuable in industries with complex accounting issues and in industries subject to extensive regulation (Martin, Rich, & Wilks, 2006). In an international banking setting, Kanagaretnam, Lim, and Lobo (2010) find that auditor industry specialization is negatively associated with benchmark beating and the use of income-increasing accruals.[12] Thus, we examine the role of industry specialization in mitigating earnings management among U.S. banks. Moreover, if banks with *less* fair value exposure rely *more* on the LLP to manage earnings, we expect the effect of auditor industry expertise to be more pronounced at mitigating LLP-based earnings management among these banks.[13] These arguments lead to our second two hypotheses, stated in the alternative:

> H2: Auditor industry specialization will mitigate banks' discretionary use of the LLP to manage earnings.
>
> H3: Auditor industry specialization will mitigate banks' discretionary use of the LLP to a lesser extent as the proportion of their assets and liabilities reported at fair value (fair value exposure) increases.

Research methodology

Sample composition

We construct our sample by first collecting accounting data from the Bank Holding Companies (BHC) Database maintained by the Federal Reserve Bank of Chicago. This database

[12] In addition, our discussions with financial services personnel at a large, national audit firm support the notion that auditors can influence management discretion over the LLP.

[13] This discussion raises the question of why banks for which LLP-based earnings management should be an attractive option would hire an industry specialist auditor. Prior research suggests that the decision to engage a particular auditor is based on an analysis of the relative benefits and costs (or factors) associated with engaging that auditor. In addition to quality considerations, some other factors that might affect this decision include the effect on market-based outcomes such as the cost of capital (Beatty, 1989; Pittman & Fortin, 2004), audit fees (Dunn & Mayhew, 2004), and the potential for proprietary information transfers among rival client-companies (Kwon, 1996). For a more detailed discussion of factors that affect auditor choice, see Dunn and Mayhew (2004).

contains data from U.S. bank holding companies that file a FR Y-9C report.[14] We limit our sample to all public banks from 2000 through 2008 available on both the BHC Database and COMPUSTAT (initially 3,270 bank-years). We lose 199 observations that are unavailable in Audit Analytics and 136 observations because of missing variables needed for our analyses. Our final sample consists of 2,935 bank-year observations from 2000 through 2008. The number of sample banks ranges from 271 to 383 per year.

Earnings management using the loan loss provision

We follow prior research (e.g., Nissim & Penman, 2007; Khan, 2014; Xie, 2016) and measure the extent of assets and liabilities reported at fair value (*FVE*) as the sum of assets and liabilities recognized or disclosed at fair value divided by total assets. See the Appendix for details about variable construction.[15]

We measure the discretionary portion of the loan loss provision (*DLLP*) following Beatty et al. (2002) by taking the residual from the following regression (in this and all subsequent models, bank subscripts are omitted):

$$Prov\_Loss_t = \beta_{0t} + \beta_1 log(ASSETS_{t-1}) + \beta_2 \Delta NPL_t + \beta_3 LLR_{t-1} + \beta_4 LOANR_t + \beta_5 LOANC_t + \beta_6 LOAND_t + \beta_7 LOANA_t + \beta_8 LOANI_t + \beta_9 LOANF_t + \varepsilon_t \quad (1)$$

where:

Prov_Loss is the gross provision for loan losses (BHCK4230) scaled by the average of

[14] The FR Y-9C report is required (under Regulation Y) to be filed with the Federal Reserve System by bank holding companies that meet a certain asset threshold (in our sample period, $150 million prior to 2006 and $500 million thereafter). It reports basic consolidated financial data and is used for monitoring purposes.

[15] Our measure of fair value exposure includes trading assets and other items which are marked-to-market on the income statement. Although managers cannot manage the timing of gain and loss recognition for these trading assets, holding these assets does provide managers with additional flexibility to manage earnings. Consider, for example, firm A with $100 in AFS securities and no trading assets, and firm B with $100 in AFS securities and an additional $100 in *FVE* from trading assets. Assuming that both A and B have total assets of $1,000, *FVE* = 0.10 for A and 0.20 for B. Because B holds more securities (some AFS and some trading), B has more flexibility to realize discretionary gains and losses by picking and choosing from securities in its AFS portfolio (or alternatively, selling trading securities and continuing to hold its AFS assets but not recording discretionary gains and losses). We do not divide fair value exposure across the "Levels" of fair value subjectivity because these data do not exist during most of our sample period.

total loans outstanding (BHCK2122) during the year;[16]

ASSETS is total assets (BHCK2170);

ΔNPL is the change in non-performing loans (BHCK5526 + BHCK5525) from the beginning to the end of the year, scaled by the average of total loans outstanding during the year;

LLR is the loan loss reserve (BHCK3123) scaled by the average of total loans outstanding during the year; and

LOANR, *LOANC*, *LOAND*, *LOANA*, *LOANI*, and *LOANF* are, respectively, the proportions of real estate (BHCK1410), commercial (BHCK1766), depository institution (BHCK5481 or BHCK1288), agricultural (BHCK1590), individual (BHCKB538 + BHCKB539 + BHCK2011), and foreign government (BHCK2081) loans to the average of total loans outstanding during the year; these are included in the model because management's ability to estimate the provision may vary by loan type.

The results from the untabulated estimation of model (1) are generally consistent with those in Beatty et al. (2002). The provision for loan losses (*Prov_Loss*) is increasing in bank size (*ASSETS*), the change in the non-performing loans *(*Δ*NPL*), and the lagged loan loss reserve (*LLR*). In addition, real estate loans (*LOANR*), commercial and industrial loans (*LOANC*), and individual loans (*LOANI*) are positively associated with *Prov_Loss*, but the coefficients on the other loan types are not significantly different from zero.

To test whether the extent to which banks fair exposure affects the use of the LLP to smooth earnings (H1), we estimate models (2a) and (2b).

$$DLLP_t = \psi_{0t} + \psi_1(FVE_t) + \psi_2(High\_PME_t) + \psi_3(FVE_t*High\_PME_t) + \psi_4(FDICIA_t) + \psi_5(FDICIA_t*High\_PME_t) + \psi_6(PostReg_t) + \psi_7(PostReg_t*High\_PME_t) + \psi_8(HomPct_t) + \psi_9(HomPct_t*High\_PME_t) + \varepsilon_t \quad (2a)$$

$$DLLP_t = \chi_{0t} + \chi_1(FVE_t) + \chi_2(Low\_PME_t) + \chi_3(FVE_t*Low\_PME_t) + \chi_4(FDICIA_t) + \chi_5(FDICIA_t* Low\_PME_t) + \chi_6(PostReg_t) + \chi_7(PostReg_t* Low\_PME_t) + \chi_8(HomPct_t) + \chi_9(HomPct_t* Low\_PME_t) + \varepsilon_t \quad (2b)$$

where:

[16] It is important to scale the provision by total loans outstanding when estimating the discretionary component of the provision because the magnitude of the provision is increasing in loans. We rescale the residual by total assets at the beginning of the year when investigating our hypotheses because our other measures are scaled by assets.

DLLP is the discretionary LLP (i.e., the residual from model (1)) times lagged loans and scaled by lagged assets;

FVE is the proportion of assets and liabilities reported at fair value;[17]

High_PME is an indicator variable set to one when pre-managed earnings are in the top quintile of sample observations in each year, and zero otherwise, where pre-managed earnings is defined as earnings plus discretionary *LLP* (from model (1) above) minus discretionary realized gains and losses (from model (3) below); and

Low_PME is an indicator variable set to one when pre-managed earnings are in the bottom quintile of sample observations, and zero otherwise;

FDICIA is an indicator variable equal to one for observations with assets greater than $500 million for fiscal years prior to 2005, and greater than $1 billion for fiscal years in 2005 or later, zero otherwise;

PostReg is an indicator variable equal to one for fiscal years 2003 or later, zero otherwise.

HomPct is the percent of homogeneous loans which includes consumer loans, family residential mortgages, loans to financial institutions, and acceptances of other banks (see Liu & Ryan (2006)).

We make no predictions about ψ_1 and χ_1, which capture the main effect of fair value exposure on the magnitude of the *DLLP*. Prior research shows that banks with high pre-managed earnings smooth earnings using the LLP, so we expect a positive ψ_2 in model (2a), and banks with low pre-managed earnings smooth earnings using the LLP, so we expect a negative χ_2 in model (2b). In addition, if fair value exposure is negatively associated with banks' use of the LLP to smooth earnings, ψ_3 will be negative in model (2a) and χ_3 will be positive in model (2b). On the other hand, if fair value exposure is positively associated with earnings smoothing using the LLP, ψ_3 will be positive in model (2a) and χ_3 will be negative in model (2b).[18]

Based on prior discussion about the effects of regulation on earnings management

[17] Although we use a continuous measure of *FVE* in our main analyses, as described in the robustness tests section, we find that the results are qualitatively unchanged using median or quintiles groupings.

[18] We estimate models (2a) and (2b) separately so that coefficient estimates can be interpreted as differences between *High_PME* or *Low_PME* banks, respectively, and all other banks. Inferences are similar if we combine the variables into one model (untabulated).

incentives, we explicitly incorporate variables that control for bank size (*FDICIA*), regulatory period (*PostReg*), and the percent of homogeneous loans (*HomPct*). We interact each of these variables with *High_PME* and *Low_PME* to control for their incremental effects.[19, 20]

Earnings management using realized gains and losses

Managers can also smooth earnings using realized gains and losses from the sales of investment securities. To estimate the extent of management's discretion over reported gains and losses, we adopt the model in Beatty and Harris (1998) and Beatty et al. (2002), where realized securities gains and losses are a function of assets and unrealized gains and losses:[21]

$$RSGL_t = \mu_{0t} + \mu_1 \log(ASSETS_{t-1}) + \mu_2 UNGL_t + \varepsilon_t \quad (3)$$

where:

RSGL is the level of realized gains and losses recorded in year *t* scaled by assets at the beginning of year *t*;

ASSETS is as previously defined; and

UNGL is the level of unrealized gains and losses at the beginning of year *t* scaled by assets at the beginning of year *t*.

Following Beatty et al. (2002), the residual from model (3) represents the "discretionary" component and captures the portion of the realized gain or loss that cannot be explained by bank size and amortized cost. This is our measure of transaction-based earnings management. Results from the untabulated estimation of model (3) are generally consistent with those in Beatty et al. (2002), and the coefficient on *UNGL* is positive and significant.

The trade-off between the loan loss provision and realized gains and losses

[19] We control for loan types separately in model (1), but include *HomPct* here for completeness.
[20] The variable capturing large banks (*FDICIA*) also controls for the possibility that large banks hold different asset types. We also re-estimate our main tests replacing the *FDICIA* indicator variable with a *BigBank* indicator variable set to one for banks with assets greater than $10 billion, zero otherwise (Nissim & Penman, 2007), and by replacing *FDICIA* with the natural log of total assets. In both cases, our inferences are unchanged.
[21] The level of unrealized gains and losses (UNGL) is included in the model because the amortization of the previous UNGL (which affects the cost basis of the assets) will affect the magnitude of the realized gains and losses.

We also test whether the trade-off between LLP-based and transaction-based earnings management differs depending on fair value exposure by estimating the following models:

$$DRSGL_t = \theta_{0t} + \theta_1(FVE_t) + \theta_2(High\_PME_t) + \theta_3(FVE_t*High\_PME_t) + \theta_4(DLLP_t) + \theta_5(FVE_t*DLLP_t) + \theta_6(FDICIA_t) + \theta_7(FDICIA_t*DLLP_t) + \theta_8(PostReg_t) + \theta_9(PostReg_t*DLLP_t) + \theta_{10}(HomPct_t) + \theta_{11}(HomPct_t*DLLP_t) + \varepsilon_t \quad (4a)$$

$$DRSGL_t = \lambda_{0t} + \lambda_1(FVE_t) + \lambda_2(Low\_PME_t) + \lambda_3(FVE_t*Low\_PME_t) + \lambda_4(DLLP_t) + \lambda_5(FVE_t*DLLP_t) + \lambda_6(FDICIA_t) + \lambda_7(FDICIA_t*DLLP_t) + \lambda_8(PostReg_t) + \lambda_9(PostReg_t*DLLP_t) + \lambda_{10}(HomPct_t) + \lambda_{11}(HomPct_t*DLLP_t) + \varepsilon_t \quad (4b)$$

where:

DRSGL is the discretionary realized gains and losses (i.e., the residual from model (3)) scaled by lagged assets; and

All other variables are as previously defined.

Unlike in models (2a) and (2b), here we do not focus on *smoothing* high or low pre-managed earnings (although we control for smoothing incentives). Instead, we focus on the trade-off between LLP-based and transaction-based earnings management because banks can use these tools as complements or as substitutes. If banks trade off discretion in estimating the LLP with discretion in reporting realized gains and losses, then realized gains will be high (low) when the DLLP is high (low), so θ_4 and λ_4 will be positive. More importantly, if fair value exposure is positively associated with the trade-off because banks with more fair value exposure have more opportunities for transaction-based earnings management, then θ_5 and λ_5 will be positive.[22]

The influence of auditor industry specialization

Next, we consider the influence of auditor specialization on the discretionary accounting choices made by banks (H2), and the influence of the extent of bank assets held at fair value on this association (H3). We follow Balsam et al. (2003) and Kanagaretnam, Krishnan, & Lobo (2009) and identify the industry specialist as the audit firm that audits the largest number of

[22] We estimate models (4a) and (4b) separately so that coefficient estimates can be interpreted as differences between *High_PME* or *Low_PME* banks, respectively, and all other banks. Our inferences are consistent, if we combine the variables from (4a) and (4b) into one model (untabulated).

clients in the banking industry. To test H2 and H3, we augment models (2a) and (2b) and estimate the following models:

$$DLLP_t = \xi_{0t} + \xi_1(FVE_t) + \xi_2(High\_PME_t) + \xi_3(FVE_t*High\_PME_t) + \xi_4(SPECIALIST_t) + \xi_5(SPECIALIST_t*FVE_t) + \xi_6(SPECIALIST_t*High\_PME_t) + \xi_7(SPECIALIST_t*FVE_t*High\_PME_t) + \xi_8(FDICIA_t) + \xi_9(FDICIA_t*High\_PME_t) + \xi_{10}(PostReg_t) + \xi_{11}(PostReg_t*High\ \ PME_t) + \xi_{12}(HomPct_t) + \xi_{13}(HomPct_t*High\_PME_t) + \varepsilon_t \quad (5a)$$

$$DLLP_t = \sigma_{0t} + \sigma_1(FVE_t) + \sigma_2(Low\_PME_t) + \sigma_3(FVE_t*Low\_PME_t) + \sigma_4(SPECIALIST_t) + \sigma_5(SPECIALIST_t*FVE_t) + \sigma_6(SPECIALIST_t*Low\_PME_t) + \sigma_7(SPECIALIST_t*FVE_t*Low\_PME_t) + \sigma_8(FDICIA_t) + \sigma_9(FDICIA_t*Low\_PME_t) + \sigma_{10}(PostReg_t) + \sigma_{11}(PostReg_t*Low\ \ PME_t) + \sigma_{12}(HomPct_t) + \sigma_{13}(HomPct_t*Low\_PME_t) + \varepsilon_t \quad (5b)$$

where:

SPECIALIST is an indicator variable set to one when the auditor is the industry specialist based on annual market-share of clients audited (so, consistent with Kanagaretnam et al. (2009), KPMG is the industry specialist in all sample years); and

All other variables are as previously defined.

If (as predicted by H2) industry specialist auditors constrain the ability of banks to use the LLP to smooth earnings, then ξ_6 will be negative in model (5a) and σ_6 will be positive in model (5b). In addition, if (as predicted by H3) auditor industry specialization mitigates the discretionary use of the LLP to a lesser extent as fair value exposure increases, then ξ_7 will be positive in model (5a) and σ_7 will be negative in model (5b).

An important consideration when examining the effect of engaging an industry specialist auditor is the ability to attribute that effect to the industry specialist. Because the specialist auditor in this industry audits more than 40 percent of the banks audited by all Big N auditors, there is a high correlation between *SPECIALIST* and the use of a Big N auditor.[23] We address this by estimating models (5a) and (5b) with and without controls for the other Big N audit firms,

[23] Although the industry specialist auditor, KPMG, audits 23 percent of banks in our sample, all Big N audit firms combined audit 55 percent of sample banks (untabulated). Thus, in addition to our initial specifications, we describe results based on specifications that explicitly consider whether the auditor is from a Big N audit firm, and that employ a continuous measure of specialization based on market share.

and by separately examining a subsample of banks audited only by Big N audit firms.

Descriptive statistics

Table 1, Panel A, reports descriptive statistics for the banks in our sample. Overall, our sample banks are larger than in Beatty et al. (2002), who report a mean of $5.1 billion for public banks, but are slightly smaller than in Ettredge, Xu, & Yi (2014), who report median logged assets of 14.59 (versus our median of 14.20). Bank profitability (*ROA*), with mean and median income of approximately 1 percent of assets, is comparable to that in Beatty et al. (2002), with a mean of 1.1 percent for public banks. The mean and median of sample banks' exposure to fair values (*FVE*) are both approximately 0.20, so 20 percent of sample banks' assets and liabilities are reported at fair value on average. Across our full sample, approximately 23 percent of banks are audited by the industry specialist auditor.

In Panel B, we partition the sample into quartiles of *FVE*, and report mean and median values for each quartile. By construction, the proportion of assets and liabilities reported at fair value is increasing across the quartiles, from a mean (median) of 9.4 (10.1) percent of assets for banks in the bottom quartile to 39.4 (36.6) percent of assets in the top quartile. We also find that bank size is increasing across the *FVE* quartiles, but it is not monotonic for the mean of assets. Although the percent of homogenous loans is increasing across the quartiles, from a mean of 30.0 percent in the bottom quartile to a mean of 39.5 percent in the top quartile, pre-managed ROA is approximately 1 percent of assets in each quartile. Finally, we find an increase in the proportion of banks audited by the specialist auditor as *FVE* increases, from 14.9 percent in the bottom quartile to 30.6 percent in the top quartile.

We present correlations in Table 2, with pearson correlation coefficients below the diagonal and spearman correlation coefficients above the diagonal. Consistent with the evidence in Table 1, Panel B, *FVE* is positively correlated with *Assets* and *HomPct*, with pearson

correlation coefficients of 0.255 and 0.222, respectively. All other correlations with *FVE* are less than 0.200, and the pearson correlation between *FVE* and *SPECIALIST* is only 0.115. *DLLP* and *Pre-managed ROA* (*DRSGL* and *Pre-managed ROA*) exhibit a small positive (negative), weakly consistent with the use of these tools to smooth earnings.

Results

Primary tests

In the analyses that follow, we present results separately for: 1) our entire sample of banks; and 2) a restricted sample in which we eliminate the middle three quintiles of pre-managed earnings. We present results for the restricted sample to increase the power of our tests by comparing the behaviors of only those banks with highest and lowest pre-managed earnings.

Earnings smoothing through the loan loss provision

In Table 3, we examine whether banks' fair value exposure is associated with LLP-based earnings smoothing. In Panel A, the coefficient on *High_PME* is positive and significant, suggesting that, on average, banks with high PME record larger DLLPs, presumably to reduce earnings. In addition, in Panel B, the coefficient on *Low_PME* is negative and significant, suggesting that, on average, banks with low PME record smaller DLLPs, presumably to boost earnings. Thus, similar to prior research, we find that banks smooth earnings using the LLP.

More importantly for our study, the coefficient on *FVE*High_PME* is negative and significant in Panel A, suggesting that holding more assets reported at fair value is associated with lower levels of downward earnings management using the LLP. In Panel B, although the coefficient on *FVE*Low_PME* is not significant for the full sample, it is positive and significant for the restricted sample, suggesting a reduction in upward earnings management as *FVE* increases. Overall, these results allow us to reject H1 and conclude that as exposure to fair value increases, banks reduce their use of the LLP to smooth earnings. We also note that the coefficient

on *FDICIA*High_PME (FDICIA*Low_PME*) is negative (positive) and significant, suggesting that large banks are less likely to engage in earnings management, consistent with these banks having stronger internal controls or being subject to stronger regulatory monitoring. The interactions *PostReg*High_PME/Low_PME* and *HomPct*High_PME/Low_PME* are not significant, suggesting that incentives to engage in LLP-based earnings management are not stronger in the post-regulation period or for banks with a higher proportion of homogeneous loans.[24]

The trade-off between using the loan loss provision and realized gains and losses

Table 4 provides results for tests of a trade-off between discretionary use of the LLP and discretionary use of realized gains and losses as *FVE* increases. In the first two columns of both Panels A and B, we exclude *FVE* to confirm the cross-sectional presence of a trade-off between *DLLP* and *DRSGL*. In both panels, the coefficient on *DLLP* is positive and significant, indicating that as the discretionary *LLP* increases (decreases), discretionary realized gains/losses increase (decrease), consistent with prior literature that documents a trade-off. In the next two columns, we add *FVE* and its interactions. In both panels, the coefficient estimates on *FVE*DLLP* are positive and significant. Thus, we conclude that banks incrementally trade-off between the discretionary LLP and discretionary realized gains and losses as *FVE* increases.

Overall, our results suggest that the means used to manage earnings differ across banks depending on the extent of assets and liabilities reported at fair value. At first glance, these results seem to differ from those in Kilic et al. (2013), who find that exposure to derivatives (which may proxy for fair value exposure) is associated with an *increase* in LLP-based earnings management, but Kilic et al. (2013) focus solely on derivatives while we use a more

[24] The insignificance of the *HomPct* interactions could also be due to the inclusion of individual loan categories in model (1). Thus, in an alternative specification (untabulated), we include *HomPct* in a model that follows Kanagaretnam et al. (2010). In this specification, the coefficient on *HomPct* is negative (positive) and significant when the dependent variable is the income-decreasing (income-increasing) discretionary LLP.

comprehensive measure that incorporates several balance sheet items reported at fair value.

Auditor industry specialization and earnings smoothing through the loan loss provision

In Table 5, we examine whether the use of an industry specialist auditor affects LLP-based earnings management. We estimate three specifications of models (5a) and (5b) using both the full sample and the restricted sample. Under the first specification, shown in the first and fourth columns, the results reveal that the use of an industry specialist auditor attenuates LLP-based earnings smoothing (i.e., the coefficient estimates on *SPECIALIST*High_PME* are negative and significant in Panel A and the coefficient estimates on *SPECIALIST*Low_PME* are positive and significant in Panel B). The second specification, shown in the second and fifth columns, includes controls for the Big N audit firms that are not specialists (*OtherBigN*). The coefficients on *SPECIALIST*High_PME* and on *SPECIALIST*Low_PME* are still significant in the predicted direction, while the coefficients on *OtherBigN*High_PME* (in Panel A) and on *OtherBigN*Low_PME* (in Panel B) are not significant. This suggests that other Big N audit firms do not constrain LLP-based earnings management to the same degree as specialists. Finally, we provide the third specification which restricts the sample to only clients of Big N audit firms. The results, presented in the third and sixth columns, reveal that the use of an industry specialist auditor constrains LLP-based earnings management to a greater extent than does the use of another Big N auditor.[25] Overall, we find some evidence supporting – that the use of an industry specialist auditor reduces LLP-based smoothing among banks with low exposure to fair value.

Table 5 confirms our earlier result that fair value exposure is negatively associated with LLP-based earnings management on average (i.e., the coefficient on *FVE*High_PME* is negative and significant in Panel A and the coefficient on *FVE*Low_PME* is positive and significant in Panel B). This suggests that banks without much exposure to fair value use the LLP *more* to

[25] For the third specification in the full sample, the one tailed p-values for *SPECIALIST*High_PME* and *SPECIALIST*Low_PME* are 0.087 and 0.098, respectively.

smooth earnings. However, this effect is attenuated when these banks are audited by industry specialist auditors (i.e., the coefficient on *SPECIALIST*FVE*High_PME* is positive and significant in Panel A and the coefficient on *SPECIALIST*FVE*Low_PME* is negative and significant in Panel B in all specifications but one). This indicates that auditor specialization mitigates LLP-based earnings management to a greater degree among banks with low exposure to fair value. These results support H3 and suggest that the effect of auditor industry specialization in constraining LLP-based earning smoothing depends on exposure to fair value.

Additional tests

In this section we describe a series of additional tests. First, because we use a comprehensive measure of fair value exposure that captures many types of assets, it is unclear whether a single *FVE* element or the total amount is associated with a reduction in LLP-based earnings management. Thus, we de-compose *FVE* into Available-for-Sale Securities (*AFS*) (which is the largest component) and *OTHER*, and we re-estimate models (2a) and (2b). Results in Table 6, reveal that both components of *FVE* (interacted with *High_PME* in Panel A and *Low_PME* in Panel B) contribute to the main results presented in Table 3.

Second, we consider the impact of the financial crisis on our results. Many banks, particularly those that engaged in subprime lending, were forced to write-off assets and they faced regulatory capital pressure in late 2007 and throughout 2008, leading to *The Emergency Economic Stabilization Act* signed into law in late 2008. It is unclear *ex ante* whether the discretion banks enjoyed from fair value exposure in the pre-crisis period was even available during the crisis period. In addition, it is unclear whether bank incentives to smooth earnings were present. Thus, we perform separate analyses using observations in the pre-crisis period (2000-2006) and the crisis period (2007-2008). Results in Table 7 reveal a positive and significant coefficient on *High_PME* (in Panel A) and a negative and significant coefficient on

Low_PME (in Panel B) in both the pre-crisis period and the crisis period, indicating banks used the LLP to smooth earnings in both periods.[26] We also find that fair value exposure is negatively associated with the use of LLP to smooth earnings both before and during the crisis.

Third, to determine whether our results are sensitive to the model specification, we use alternative models to estimate the discretionary LLP. Specifically, we estimate model (1) from Liu and Ryan (2006) and the two stage model (i.e., models (1) and (3)) from Kanagaretman et al. (2010). In the Liu and Ryan (2006) model, *X*High_ROA* indicates whether highly profitable banks smooth earnings downward using the LLP. In Table 8, we find this to be the case as evidenced by the positive and significant coefficient estimate. We also augment the Liu and Ryan model by adding *FVE*, *X*FVE*, and *X*FVE*High_ROA*. The coefficient on the three-way interaction *X*FVE*High_ROA* is negative and significant, suggesting that fair value exposure is associated with less LLP-based earnings management, supporting our primary results.

Kanagaretman et al. (2010) estimate their model (3) separately for banks with positive versus negative abnormal loan loss provisions (*ALLPs*), which are calculated as the residuals from their untabulated first-stage regression. We present results using the positive and negative *ALLP* subsamples in Table 9, Panels A and B, respectively. Given our research question, we exclude abnormal fees and instead augment the model with *FVE*. In Panel A, the coefficient on *FVE* is negative and significant, indicating that banks that manage the provision upward (which decreases net income) exhibit less earnings management as *FVE* increases. In Panel B, the coefficient on *FVE* is positive and significant, indicating that banks that manage the provision downward (which increase net income) also exhibit less earnings management as *FVE* increases. Collectively, Tables 8 and 9 provide evidence consistent with earlier results.

[26] Recall that *High_PME* and *Low_PME* are based on quintiles of pre-managed earnings calculated each year, so even though overall earnings are lower in crisis years, our analysis still compares the highest and lowest quintiles of banks to all other banks in the sample.

Robustness tests

To assess the robustness of our main results, we re-estimate each model using alternative specifications for our main variables of interest – *FVE*, *PME*, and *SPECIALIST*. First, we use the median value of *FVE* as an alternative cut-off, and re-define *FVE* as an indicator variable equal to one (zero) for banks with greater than (less than or equal to) the median *FVE* in the year. Untabulated results for the full sample are qualitatively similar to our primary results with a few exceptions. First, when estimating models (4a) and (4b), the coefficients on *FVE*DLLP* are positive but not quite statistically significant at conventional levels (two-tailed p-values = 0.112 for downward earnings management and 0.142 for upward earnings management). Also, when estimating model (5a) the coefficient on *SPECIALIST*FVE*High_PME* is positive but marginally significant in the second specification using the full sample (one-tailed p-value = 0.053), the coefficient on *SPECIALIST*High_PME* is negative but marginally significant for the first specification using the full sample (one-tailed p-value = 0.055), and the same coefficient is not significant in the last specification using the Big N subsample. Finally, for model (5b), the coefficients on *SPECIALIST*FVE*Low_PME* are negative but marginally significant for the first and sixth specifications (one-tailed p-values = 0.073 and 0.080, respectively) and are not significant in the second specification, while the coefficient on *SPECIALIST*Low_PME* is not significant in the sixth specification.

We also re-define *FVE* as an indicator equal to one for banks in the top quintile of *FVE*, zero otherwise. The results are similar to our main analyses except that the coefficients on *FVE*DLLP* in models (4a) and (4b) are not significant in the reduced sample, the coefficients on *SPECIALIST*High_PME* in model (5a) are marginally significant in the first and sixth specification (one-tailed p-values = 0.072 and 0.057, respectively), and the coefficient on *SPECIALIST*Low_PME* in model (5b) is marginally significant (one-tailed p-value = 0.058).

Second, we re-estimate our models using the median cut-off for pre-managed earnings (*PME*), including banks with pre-managed earnings greater than the median in the *High_PME* group and the remaining banks in the *Low_PME* group. Untabulated results are similar to our primary results with the exception of the coefficient on *SPECIALIST*FVE*High_PME*, which is positive but not significant in the third specification using the Big N subsample.

Third, we use a continuous measure of PME. Untabulated results are similar to those tabulated except that the coefficient on *FVE*DLLP* is not significant when estimating model (4a), the coefficient on *SPECIALIST*PME* is not significant in the sixth specification, and the coefficients on *SPECIALIST*FVE*PME* are positive but marginally significant in the third and sixth specifications (one-tailed p-values = 0.069 and 0.079, respectively).

Fourth, we re-estimate models (5a) and (5b) replacing *SPECIALIST* with indicators for each of the Big N audit firms. Here we find some evidence (untabulated) that two other Big N audit firms constrain both upward and downward earnings management using the LLP.

Fifth, we use a continuous measure of auditor specialization based on the proportion of clients audited by each audit firm. Untabulated results are similar to our primary results, suggesting that increased industry specialization (related to market share) mitigates the extent to which banks with lower exposure to fair value use the LLP to smooth earnings.

Sixth, to alleviate the concern that operational differences across banks could explain our results, we perform two additional sets of tests. First, we re-estimate the analyses in Tables 3 and 4 by including the following measures: the equity-to-asset ratio (to control for leverage differences), the deposit-to-asset ratio (to capture differences in funding structure), and the nonperforming loans-to-asset ratio (to capture risk differences). We include these measures individually and altogether. In all specifications, our inferences remain unchanged. Second, we

remove money center banks and inferences remain unchanged.[27]

Finally, to alleviate the concern that observations are not independent, we re-estimate our main tests using clustered standard errors and our inferences remain unchanged.

Conclusion

We examine the relation between our proxy for earnings management flexibility — the proportion of assets reported at fair value (which we refer to as "fair value exposure") — and the extent to which banks use discretion over the LLP to smooth reported earnings. We suggest that banks with more fair value exposure have access to a different set of earnings management tools, and are thus able to substitute accrual-based earnings management (using the discretionary LLP) with transaction-based earnings management (using realized gains and losses). We also examine whether auditor industry specialization affects LLP-based earnings management.

We find that fair value exposure is negatively associated with the use of the discretionary LLP to smooth earnings, and positively associated with the extent to which banks trade off LLP-based and transaction-based earnings management. We also find that the use of an industry specialist auditor mitigates the extent to which banks use the discretionary portion of the LLP to smooth earnings, especially for banks with lower exposure to fair value. Our results suggest that a different set of earnings management tools are available to banks that hold more alternative financial assets, and that the ability to smooth earnings is mitigated by use of industry specialist auditors. Our findings contribute to our understanding of the roles that asset composition and auditor industry specialization play in banks' earnings management decisions.

Our findings are should be informative to regulators, members of the banking industry, and academics interested in the earnings management behavior of banks. They suggest that as

[27] We identify money center banks using yahoo finance (see https://biz.yahoo.com/ic/410_cl_all.html). The money center banks in our sample are J. P. Morgan, Keycorp, PNC Financial, Bank of America, Wells Fargo, Suntrust, National Bankshares, BSB Bancorp, TCF Financial, and Oriental Financial. The mean (median) *FVE* for money center banks is 0.366 (0.279), compared with 0.221 (0.203) for all other banks in our sample.

banks choose to hold more assets subject to fair value reporting, they have a different and potentially less visible set of earnings management tools available to achieve desired earnings outcomes. These results are also important because they reflect determinants of the discretionary LLP reported using the current incurred loss model. These determinants are important to document in part because for fiscal years beginning after December 15, 2019 (2020), public (private) banks will adopt an alternative model—the current expected loss model—to calculate the provision (following FASB ASU 2016-13), and the new model will could lead to different estimates of the LLP.

Our findings should also be of interest to investors. Beatty, Chamberlain & Magliolo (1995a) find that valuation models of banks' investment securities and the loan loss allowance are misspecified due to measurement error. Our study provides evidence that banks manage earnings differently depending on the extent to which they hold alternative financial instruments. Future valuation models could consider that the extent of discretion used to estimate loan losses and time the realization of gains and losses may differ across banks depending on their exposure to fair value.

As previously mentioned, our fair value measure captures not only exposure to fair value but also variation in the portfolio of bank asset holdings, so we do not provide evidence on the "type" of fair value accounting system or speak to costs or benefits of requiring changes in the fair value of assets to be recorded on the balance sheet and/or income statement. Rather, our findings derive under the current accounting system, where some changes in fair value are ignored, others are recorded on both the balance sheet and income statement, and others bypass the income statement. Finally, we focus strictly on earnings management and do not consider trade offs that managers make to meet tax or regulatory capital objectives. We leave addressing these issues to future research.

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APPENDIX: **Variable Definitions**

Variable		Definition
$Assets_t$	=	Total assets (BHCK2170), winsorized at the 1 and 99 percent levels.
$DLLP_t$	=	The discretionary portion of the LLP (as estimated in model (1)) times lagged loans, scaled by lagged assets.
$DRSGL_t$	=	Discretionary gains and losses (as estimated in model (3)), scaled by lagged assets, winsorized at the 1 and 99 percent levels.
$FDICIA_t$	=	One for observations with assets greater than $500 million in fiscal years prior to 2005, and greater than $1 billion in fiscal years in 2005 or later, zero otherwise.
FVE_t	=	The sum of the assets and liabilities recognized or disclosed at fair value, scaled by total assets, winsorized at the 1 and 99 percent levels. These assets and liabilities include investments, derivatives, mortgage servicing rights, other financial assets, trading liabilities, and items reported at fair value using the fair value option. Fair values of held to maturity investments are disclosed in the BHC Database as item BHCK8551 until 2000 and as BHCK1771 thereafter. Fair values of AFS investments are disclosed as BHCK1773, fair values of trading assets are disclosed as BHCK3545, and fair values of derivatives other than those included in trading assets are disclosed as items BHCK8733 through BHCK8748 and as items BHCKC219 through BHCK222, fair values of mortgage servicing rights are disclosed as BHCK6438. Other financial assets reported at fair value include interest-only strips receivable (BHCKA519 and BHCKA520), except in 2007 and 2008 when a specific "other financial servicing assets" at fair value was disclosed (BHCKF249). Fair values of trading liabilities are disclosed as BHCK3548, and items reported at fair value using the fair value option include certain non-trading securities (BHCKF240), deposits (BHCKF252), other financial and servicing liabilities (BHCK 258), loan commitments not accounted for as derivatives (BHCK261), and loans and leases held for sale (BHCKF243). When any of these amounts are not disclosed, we set them to zero.
$High\_PME_t$	=	One when *Pre-managed ROA* are in the top quintile of sample observations in the year, and zero otherwise.
$HomPct_t$	=	The percent of homogeneous loans which includes consumer loans (BHCB538, BHCB539, and BHCK2011), family residential mortgages (BHCK1797, BHDM5367, and BHDM538), and loans to financial institutions (BHCK1288).
Low_PME_t	=	One when *Pre-managed ROA* is in the bottom quintile of sample observations in the year, and zero otherwise.
OtherBigN	=	One if the bank is audited by a Big N auditor other than the *SPECIALIST*, and zero otherwise.
$PostReg_t$	=	One if the fiscal year is 2003 or later, and zero otherwise.
Pre-managed ROA_t	=	*ROA* minus *DLLP* plus *DRSGL*, winsorized at the 1 and 99 percent levels.
ROA_t	=	Net income (BHCK4340) scaled by lagged assets, winsorized at the 1 and 99 percent levels.
$SPECIALIST_t$	=	One if the bank is audited by the industry specialist (the audit firm that audits the most clients in the banking industry in a given year), and zero otherwise. In our sample, KPMG LLP is the specialist auditor in all years.

Table 1

Descriptive statistics.

Panel A: Descriptive Statistics for the full sample (N = 2,935)

	Mean	Std Dev.	Min	25th Pctl.	Median	75th Pctl.	Max
Assets ($mil)	12,039	43,759	211	683	1,469	4,594	349,259
DLLP	-0.0001	0.0046	-0.0241	-0.0025	-0.0008	0.0012	0.0424
DRSGL	0.0001	0.0011	-0.0049	-0.0002	0.0001	0.0005	0.0036
FDICIA	0.6201	0.4854	0	0	1	1	1
FVE	0.2259	0.1246	0.0190	0.1416	0.2040	0.2850	0.7262
HomPct	0.3533	0.1733	0.0192	0.2197	0.3541	0.4788	0.7935
PostReg	0.6818	0.4659	0	0	1	0	0
Pre-managed ROA	0.0105	0.0060	-0.0165	0.0078	0.0109	0.0138	0.0248
ROA	0.0105	0.0069	-0.0237	0.0079	0.0113	0.0143	0.0255
SPECIALIST	0.2334	0.4231	0	0	0	0	1

Panel B: Descriptive Statistics by FVE Quartile

	FVE Quartile 1 (N=734)		*FVE Quartile 2 (N=734)*		*FVE Quartile 3 (N=734)*		*FVE Quartile 4 (N=733)*	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Assets ($mil)	5,802	1,032	11,384	1,646	11,038	1,704	19,942	1,834
DLLP	0.0005	-0.0002	0.0000	-0.0006	-0.0001	-0.0006	-0.0002	-0.0005
DRSGL	-0.0000	0.0000	0.0000	0.0001	0.0000	0.0001	0.0003	0.0002
FDICIA	0.5163	1	0.6512	1	0.6540	1	0.6589	1
FVE	0.0938	0.1014	0.1734	0.1740	0.2396	0.2419	0.3942	0.3655
HomPct	0.2991	0.2822	0.3425	0.3331	0.3812	0.3948	0.3905	0.4051
PostReg	0.7616	1	0.7357	1	0.5981	1	0.6317	1
Pre-managed ROA	0.0103	0.0112	0.0101	0.0105	0.0110	0.0113	0.0108	0.0108
ROA	0.0098	0.0110	0.0100	0.0110	0.0111	0.0118	0.0111	0.0115
SPECIALIST	0.1485	0	0.2030	0	0.2766	0	0.3056	0

Panel A provides descriptive statistics for the full sample. Panel B presents mean and median values separately for each quartile of *FVE*. Variable definitions are provided in the Appendix.

Table 2

Correlation table.

	Assets	*DLLP*	*DRGL*	*FDICIA*	*FVE*	*HOMPCT*	*POSTREG*	*Pre-managed ROA*	*ROA*	*SPECIALIST*
Assets		-0.1245	0.0156	0.8407	0.132	0.0203	0.0882	0.137	0.1885	0.1305
		(<0.01)	(0.40)	(<0.01)	(<0.01)	(0.27)	(<0.01)	(<0.01)	(<0.01)	(<0.01)
DLLP	0.0145		0.0177	-0.1165	-0.0431	-0.059	-0.0853	0.1394	-0.2758	-0.0449
	(0.43)		(0.34)	(<0.01)	(0.02)	(<0.01)	(<0.01)	(<0.01)	(<0.01)	(0.02)
DRGL	0.0136	0.0141		0.0009	0.1024	-0.0215	0.1443	-0.1864	-0.0177	0.0189
	(0.46)	(0.45)		(0.96)	(<0.01)	(0.24)	(<0.01)	(<0.01)	(0.34)	(0.30)
FDICIA	0.2049	-0.0294	-0.0273		0.1007	-0.0121	0.0816	0.0951	0.1404	0.1149
	(<0.01)	(0.11)	(0.14)		(<0.01)	(0.51)	(<0.01)	(<0.01)	(<0.01)	(<0.01)
FVE	0.2555	-0.0554	0.1099	0.0955		0.2218	-0.1288	0.0068	0.0472	0.1545
	(<0.01)	(<0.01)	(<0.01)	(<0.01)		(<0.01)	(<0.01)	(0.71)	(0.01)	(<0.01)
HOMPCT	0.1423	-0.032	0.0055	-0.0191	0.1859		-0.187	-0.0281	-0.0187	0.0521
	(<0.01)	(0.08)	(0.77)	(0.30)	(<0.01)		(<0.01)	(0.13)	(0.31)	(<0.01)
POSTREG	0.0051	-0.0377	0.0558	0.0816	-0.0946	-0.1899		-0.2016	-0.1432	-0.0156
	(0.78)	(0.04)	(<0.01)	(<0.01)	(<0.01)	(<0.01)		(<0.01)	(<0.01)	(0.40)
Pre-managed ROA	0.0611	0.0658	-0.1013	0.0594	0.0236	-0.0073	-0.1964		0.8285	0.0569
	(<0.01)	(<0.01)	(<0.01)	(<0.01)	(0.20)	(0.69)	(<0.01)		(<0.01)	(<0.01)
ROA	0.053	-0.4308	0.1066	0.0696	0.0664	0.0214	-0.1462	0.8206		0.069
	(<0.01)	(<0.01)	(<0.01)	(<0.01)	(<0.01)	(0.25)	(<0.01)	(<0.01)		(<0.01)
SPECIALIST	0.042	-0.0263	0.0012	0.1149	0.1159	0.0493	-0.0156	0.0562	0.0622	
	(0.02)	(0.15)	(0.95)	(<0.01)	(<0.01)	(0.01)	(0.40)	(<0.01)	(<0.01)	

Pearson (Spearman) correlation coefficients are shows below (above) the diagonal. P-values are presented below each correlation coefficient. Variable definitions are provided in the Appendix.

Table 3

Earnings management using the discretionary loan loss provision (DLLP).

Panel A: Downward earnings management using the DLLP

$$DLLP_t = \psi_{0t} + \psi_1(FVE_t) + \psi_2(High\_PME_t) + \psi_3(FVE_t*High\_PME_t) + \psi_4(FDICIA_t) + \psi_5(FDICIA_t*High\_PME_t) + \psi_6(PostReg_t) + \psi_7(PostReg_t*High\_PME_t) + \psi_8(HomPct_t) + \psi_9(HomPct_t*High\_PME_t) + \varepsilon_t \quad (2a)$$

	Full sample		*Top and bottom quintiles of PME*	
Variable	*Coefficient*	*p-value*	*Coefficient*	*p-value*
Intercept	0.00013	0.643	-0.00104	0.118
FVE	-0.00030	0.594	0.00110	0.389
High_PME	0.00212	0.002	0.00358	<0.001
*FVE*High_PME*	-0.00456	0.005	-0.00601	0.003
FDICIA	-0.00014	0.336	0.00060	0.134
*FDICIA*High_PME*	-0.00106	0.019	-0.00189	0.001
PostReg	0.00285	<0.001	0.00452	<0.001
*PostReg*High_PME*	0.00050	0.259	0.00025	0.642
HomPct	-0.00070	0.091	0.00055	0.595
*HomPct*High_PME*	0.00154	0.204	0.00018	0.907
Year Fixed Effects	Included		Included	
N	2,935		1,175	
Adj. R^2	9%		11%	

Panel B: Upward earnings management using the DLLP

$$DLLP_t = \chi_{0t} + \chi_1(FVE_t) + \chi_2(Low\_PME_t) + \chi_3(FVE_t*Low\_PME_t) + \chi_4(FDICIA_t) + \chi_5(FDICIA_t*Low\_PME_t) + \chi_6(PostReg_t) + \chi_7(PostReg_t* Low\_PME_t) + \chi_8(HomPct_t) + \chi_9(HomPct_t* Low\_PME_t) + \varepsilon_t \quad (2b)$$

	Full sample		*Top and bottom quintiles of PME*	
Variable	*Coefficient*	*p-value*	*Coefficient*	*p-value*
Intercept	0.00103	0.001	0.00255	0.001
FVE	-0.00182	0.003	-0.00491	0.001
Low_PME	-0.00199	0.003	-0.00358	<0.001
*FVE*Low_PME*	0.00173	0.257	0.00601	0.003
FDICIA	-0.00062	<0.001	-0.00129	0.003
*FDICIA*Low_PME*	0.00150	0.001	0.00189	0.001
PostReg	0.00289	<0.001	0.00477	<0.001
*PostReg*Low_PME*	0.00010	0.788	-0.00025	0.642
HomPct	-0.00068	0.135	0.00073	0.525
*HomPct*Low_PME*	0.00100	0.380	-0.00018	0.907
Year Fixed Effects	Included	Included	Included	Included
N	2,935		1,175	
Adj. R^2	7%		11%	

See appendix for the definition of variables. P-values are calculated using two-tailed tests.

Table 4
Trade-off between discretionary loan loss provision (DLLP) and discretionary realized gains/losses (DRSGL).

Panel A: Downward earnings management using the DRSGL

$DRSGL_t = \theta_{0t} + \theta_1(FVE_t) + \theta_2(High\_PME_t) + \theta_3(FVE_t*High\_PME_t) + \theta_4(DLLP_t) + \theta_5(FVE_t*DLLP_t) + \theta_6(FDICIA_t) + \theta_7(FDICIA_t*DLLP_t) + \theta_8(PostReg_t) + \theta_9(PostReg_t*DLLP_t) + \theta_{10}(HomPct_t) + \theta_{11}(HomPct_t*DLLP_t) + \varepsilon_t$ (4a)

	Full sample		*Full sample*		*Top and bottom quintiles of PME*	
Variable	*Coefficient*	*p-value*	*Coefficient*	*p-value*	*Coefficient*	*p-value*
Intercept	-0.00002	0.776	-0.00026	0.004	-0.00032	0.051
FVE			0.00121	<0.001	0.00162	<0.001
High_PME	-0.00029	<0.001	0.00007	0.439	-0.00002	0.872
*FVE*High_PME*			-0.00160	0.001	-0.00204	0.001
DLLP	0.04629	0.026	0.02336	0.238	0.02790	0.262
*FVE*DLLP*			0.14756	0.016	0.15376	0.069
FDICIA	0.00001	0.833	-0.00001	0.752	0.00005	0.512
*FDICIA*DLLP*	0.00319	0.789	0.00176	0.876	-0.00267	0.860
PostReg	-0.00051	<0.001	-0.00047	<0.001	-0.00055	0.021
*PostReg*DLLP*	-0.01405	0.321	-0.01354	0.275	-0.00759	0.628
HomPct	-0.00008	0.559	-0.00016	0.214	-0.00031	0.123
*HomPct*DLLP*	-0.05151	0.164	-0.05374	0.125	-0.06070	0.132
Year Fixed Effects	Included		Included		Included	
N	2,935		2,935		1,175	
Adj. R^2	8%		9%		14%	

Panel B: Upward earnings management using the DRSGL

$DRSGL_t = \lambda_{0t} + \lambda_1(FVE_t) + \lambda_2(Low\_PME_t) + \lambda_3(FVE_t*Low\_PME_t) + \lambda_4(DLLP_t) + \lambda_5(FVE_t*DLLP_t) + \lambda_6(FDICIA_t) + \lambda_7(FDICIA_t*DLLP_t) + \lambda_8(PostReg_t) + \lambda_9(PostReg_t*DLLP_t) + \lambda_{10}(HomPct_t) + \lambda_{11}(HomPct_t*DLLP_t) + \varepsilon_t$ (4b)

	Full sample		*Full sample*		*Top and bottom quintiles of PME*	
Variable	*Coefficient*	*p-value*	*Coefficient*	*p-value*	*Coefficient*	*p-value*
Intercept	-0.00017	0.040	-0.00024	0.005	-0.00034	0.028
FVE			0.00057	0.008	-0.00042	0.365
Low_PME	0.00030	<0.001	0.00001	0.929	0.00002	0.872
*FVE*Low_PME*			0.00119	0.006	0.00204	0.001
DLLP	0.04889	0.016	0.02489	0.199	0.02790	0.262
*FVE*DLLP*			0.14987	0.012	0.15376	0.069
FDICIA	0.00003	0.497	0.00000	0.912	0.00005	0.512
*FDICIA*DLLP*	-0.00051	0.966	-0.00289	0.797	-0.00267	0.860
PostReg	-0.00050	<0.001	-0.00047	<0.001	-0.00055	0.021
*PostReg*DLLP*	-0.01542	0.266	-0.01312	0.284	-0.00759	0.628
HomPct	-0.00004	0.756	-0.00012	0.358	-0.00031	0.123
*HomPct*DLLP*	-0.05779	0.111	-0.05692	0.098	-0.06070	0.132
Year Fixed Effects	Included		Included		Included	
N	2,935		2,935		1,175	
Adj. R^2	8%		9%		14%	

See appendix for the definition of variables. P-values are calculated using two-tailed tests.

Table 5
The effect of auditor industry specialization on earnings management using the discretionary loan loss provision (DLLP).

Panel A: Downward earnings management using the DLLP

$$DLLP_t = \xi_{0t} + \xi_1(FVE_t) + \xi_2(High\_PME_t) + \xi_3(FVE_t*High\_PME_t) + \xi_4(SPECIALIST_t) + \xi_5(SPECIALIST_t*FVE_t) + \xi_6(SPECIALIST_t*High\_PME_t) + \xi_7(SPECIALIST_t*FVE_t*High\_PME_t) + \xi_8(FDICIA_t) + \xi_9(FDICIA_t*High\_PME_t) + \xi_{10}(PostReg_t) + \xi_{11}(PostReg_t*High\_PME_t) + \xi_{12}(HomPct_t) + \xi_{13}(HomPct_t*High\_PME_t) + \varepsilon_t \quad (5a)$$

	Full sample			*Top and bottom quintiles of PME*		
Variable	*All Auditors*	*All Auditors*	*Big N Only*	*All Auditors*	*All Auditors*	*Big N Only*
Intercept	0.00013	-0.00003	0.00096**	-0.00130*	-0.00171*	-0.00102
FVE	-0.00017	-0.00004	-0.00040	0.00184	0.00261	0.00064
High_PME	0.00241***	0.00289***	0.00174*	0.00417***	0.00488***	0.00389***
*FVE*High_PME*	-0.00657***	-0.00862***	-0.00532***	-0.00874***	-0.01166***	-0.00693**
SPECIALIST	-0.00007	0.00012	-0.00045	0.00229**	0.00277**	0.00083
*SPECIALIST*FVE*	-0.00037	-0.00047	0.00026	-0.00617*	-0.00681*	-0.00257
*SPECIALIST*High_PME*	-0.00207**	-0.00267**	-0.00148	-0.00458***	-0.00541***	-0.00311*
*SPECIALIST*FVE*High_PME*	0.00873**	0.01075**	0.00701*	0.01512***	0.01796***	0.01063*
OtherBigN		0.00056			0.00163	
*OtherBigN*FVE*		-0.00070			-0.00289	
*OtherBigN*High_PME*		-0.00138			-0.00229	
*OtherBigN*FVE*High_PME*		0.00412			0.00645	
FDICIA	-0.00013	-0.00029*	-0.00036*	0.00053	0.00021	0.00084
*FDICIA*High_PME*	-0.00101**	-0.00082*	-0.00074	-0.00177***	-0.00148**	-0.00198***
PostReg	0.00285***	0.00297***	0.00434***	0.00455***	0.00479***	0.00863***
*PostReg*High_PME*	0.00052	0.00043	-0.00004	0.00028	0.00012	-0.00106
HomPct	-0.00068	-0.00065	-0.00119**	0.00057	0.00046	-0.00030
*HomPct*High_PME*	0.00187	0.00201*	0.00267*	0.00053	0.00078	0.00156
Year Fixed Effects	Included	Included	Included	Included	Included	Included
N	2,935	2,935	1,625	1,175	1,175	636
Adj. R^2	9%	9%	15%	11%	12%	23%

Table 5, continued

Panel B: Upward earnings management using the DLLP

$$DLLP_t = \sigma_{0t} + \sigma_1(FVE_t) + \sigma_2(Low\_PME_t) + \sigma_3(FVE_t*Low\_PME_t) + \sigma_4(SPECIALIST_t) + \sigma_5(SPECIALIST_t*FVE_t) + \sigma_6(SPECIALIST_t*Low\_PME_t) + \sigma_7(SPECIALIST_t*FVE_t*Low\_PME_t) + \sigma_8(BigBank_t) + \sigma_9(BigBank_t*Low\_PME_t) + \sigma_{10}(PostReg_t) + \sigma_{11}(PostReg_t* Low\_PME_t) + \sigma_{12}(HomPct_t) + \sigma_{13}(HomPct_t* Low\_PME_t) + \varepsilon_t \quad (5b)$$

	Full sample			*Top and bottom quintiles of PME*		
Variable	*All Auditors*	*All Auditors*	*Big N Only*	*All Auditors*	*All Auditors*	*Big N Only*
Intercept	0.00117***	0.00123***	0.00176***	0.00286***	0.00317***	0.00288***
FVE	-0.00230***	-0.00308***	-0.00197**	-0.00690***	-0.00904***	-0.00630***
Low_PME	-0.00240***	-0.00284***	-0.00223**	-0.00417***	-0.00488***	-0.00389***
*FVE*Low_PME*	0.00297*	0.00449**	0.00135	0.00874***	0.01166***	0.00693**
SPECIALIST	-0.00099***	-0.00104**	-0.00102**	-0.00229**	-0.00264**	-0.00228**
*SPECIALIST*FVE*	0.00277**	0.00357**	0.00240	0.00895**	0.01115**	0.00806**
*SPECIALIST*Low_PME*	0.00333***	0.00381***	0.00208	0.00458***	0.00541***	0.00311*
*SPECIALIST*FVE*Low_PME*	-0.00940**	-0.01081***	-0.00591	-0.01512***	-0.01796***	-0.01063*
OtherBigN		-0.00003			-0.00066	
*OtherBigN*FVE*		0.00110			0.00355	
*OtherBigN*Low_PME*		0.00148			0.00229	
*OtherBigN*FVE*Low_PME*		-0.00376			-0.00645	
FDICIA	-0.00059	-0.00067***	-0.00082***	-0.00124***	-0.00127***	-0.00114**
*FDICIA*Low_PME*	0.00141	0.00122***	0.00196***	0.00177***	0.00148**	0.00198***
PostReg	0.00289	0.00297***	0.00410***	0.00483***	0.00491***	0.00757***
*PostReg*Low_PME*	0.00010	0.00022	0.00113**	-0.00028	-0.00012	0.00106
HomPct	-0.00063	-0.00058	-0.00054	0.00110	0.00124	0.00126
*HomPct*Low_PME*	0.00096	0.00081	-0.00029	-0.00053	-0.00078	-0.00156
Year Fixed Effects	Included	Included	Included	Included	Included	Included
N	2,935	2,935	1,625	1,175	1,175	636
Adj. R^2	8%	8%	15%	11%	12%	23%

See appendix for the definition of variables. ***, **, and * indicate significance at the one, five, and ten percent level, using two-tailed tests.

Table 6

Earnings management using the discretionary loan loss provision (DLLP) for AFS vs. Other FVE

Panel A: Downward earnings management using the DLLP

$$DLLP_t = \psi_{0t} + \psi_1(OTHER\_FVE_t) + \psi_2(AFS\_FVE_t) + \psi_3(High\_PME_t) + \psi_4(OTHER\_FVE_t*High\_PME_t) + \psi_5(AFS\_FVE_t*High\_PME_t) + \psi_6(FDICIA_t) + \psi_7(FDICIA_t*High\_PME_t) + \psi_8(PostReg_t) + \psi_9(PostReg_t*High\_PME_t) + \psi_{10}(HomPct_t) + \psi_{11}(HomPct_t*High\_PME_t) + \varepsilon_t \quad (2a)$$

	Full sample		*Top and bottom quintiles of PME*	
Variable	*Coefficient*	*p-value*	*Coefficient*	*p-value*
Intercept	0.00019	0.517	-0.00114	0.129
OTHER_FVE	0.00055	0.092	0.00041	0.391
AFS_FVE	-0.00064	0.377	0.00147	0.377
High_PME	0.00207	0.003	0.00369	<0.001
*OTHER_FVE*High_PME*	-0.00260	0.038	-0.00253	0.067
*AFS_FVE*High_PME*	-0.00501	0.028	-0.00705	0.011
FDICIA	-0.00016	0.285	0.00060	0.135
*FDICIA*High_PME*	-0.00104	0.022	-0.00190	0.001
PostReg	0.00283	0.000	0.00455	<0.001
*PostReg*High_PME*	0.00050	0.254	0.00023	0.672
HomPct	-0.00078	0.062	0.00064	0.546
*HomPct*High_PME*	0.00159	0.190	0.00006	0.971
Year Fixed Effects	Included		Included	
N	2,935		1,175	
Adj. R^2	9%		11%	

Panel B: Upward earnings management using the DLLP

$$DLLP_t = \chi_{0t} + \chi_1(OTHER\_FVE_t) + \chi_2(AFS\_FVE_t) + \chi_3(Low\_PME_t) + \chi_4(OTHER\_FVE_t*Low\_PME_t) + \chi_5(AFS\_FVE_t*Low\_PME_t) + \chi_6(FDICIA_t) + \chi_7(FDICIA_t*Low\_PME_t) + \chi_8(PostReg_t) + \chi_9(PostReg_t* Low\_PME_t) + \chi_{10}(HomPct_t) + \chi_{11}(HomPct_t* Low\_PME_t) + \varepsilon_t \quad (2b)$$

	Full sample		*Top and bottom quintiles of PME*	
Variable	*Coefficient*	*p-value*	*Coefficient*	*p-value*
Intercept	0.00111	0.001	0.00255	0.001
OTHER_FVE	0.00032	0.468	-0.00212	0.100
AFS_FVE	-0.00262	0.001	-0.00558	0.010
Low_PME	-0.00207	0.007	-0.00369	<0.001
*OTHER_FVE*Low_PME*	-0.00027	0.679	0.00253	0.067
*AFS_FVE*Low_PME*	0.00248	0.207	0.00705	0.011
FDICIA	-0.00065	<0.001	-0.00130	0.003
*FDICIA*Low_PME*	0.00153	<0.001	0.00190	0.001
PostReg	0.00289	<0.001	0.00478	<0.001
*PostReg*Low_PME*	0.00010	0.787	-0.00023	0.672
HomPct	-0.00073	0.110	0.00070	0.542
*HomPct*Low_PME*	0.00102	0.381	-0.00006	0.971
Year Fixed Effects	Included		Included	
N	2,935		1,175	
Adj. R^2	8%		11%	

See appendix for the definition of variables. P-values are calculated using two-tailed tests.

Table 7
Earnings management using the discretionary loan loss provision (DLLP) pre-crisis vs. crisis

Panel A: Downward earnings management using the DLLP

$DLLP_t = \psi_{0t} + \psi_1(FVE_t) + \psi_2(High\_PME_t) + \psi_3(FVE_t*High\_PME_t) + \psi_4(FDICIA_t) + \psi_5(FDICIA_t*High\_PME_t) + \psi_6(PostReg_t) + \psi_7(PostReg_t*High\_PME_t) + \psi_8(HomPct_t) + \psi_9(HomPct_t*High\_PME_t) + \varepsilon_t$ (2a)

	2000-2006		*2007-2008*	
Variable	*Full Sample*	*Top and Bottom PME Quantiles*	*Full Sample*	*Top and Bottom PME Quantiles*
Intercept	0.00070**	-0.00031	0.00106	-0.00217
FVE	-0.00081*	0.00043	0.00208	0.01201**
High_PME	0.00172***	0.00272***	0.00569**	0.01018***
*FVE*High_PME*	-0.00268*	-0.00352**	-0.01338***	-0.02451***
FDICIA	-0.00051***	-0.00044	0.00210***	0.00627***
*FDICIA*High_PME*	-0.00091**	-0.00107**	-0.00277	-0.00700***
PostReg	-0.00061***	-0.00091***	-	-
*PostReg*High_PME*	0.00014	0.00031	-	-
HomPct	-0.00051	0.00073	-0.00201	-0.00048
*HomPct*High_PME*	0.00126	0.00015	0.00451	0.00290
Year Fixed Effects	Included	Included	Included	Included
N	2,378	951	557	224
Adj. R^2	6%	7%	12%	14%

Panel B: Upward earnings management using the DLLP

$DLLP_t = \chi_{0t} + \chi_1(FVE_t) + \chi_2(Low\_PME_t) + \chi_3(FVE_t*Low\_PME_t) + \chi_4(FDICIA_t) + \chi_5(FDICIA_t*Low\_PME_t) + \chi_6(PostReg_t) + \chi_7(PostReg_t* Low\_PME_t) + \chi_8(HomPct_t) + \chi_9(HomPct_t* Low\_PME_t) + \varepsilon_t$ (2b)

	2000-2006		*2007-2008*	
Variable	*Full Sample*	*Top and Bottom PME Quantiles*	*Full Sample*	*Top and Bottom PME Quantiles*
Intercept	0.00149***	0.00245***	0.00288***	0.00801***
FVE	-0.00189***	-0.00340**	-0.00143	-0.01250***
Low_PME	-0.00187***	-0.00276***	-0.00574**	-0.01018***
*FVE*Low_PME*	0.00182	0.00349*	0.01099*	0.02451***
FDICIA	-0.00083***	-0.00144***	0.00053	-0.00073
*FDICIA*Low_PME*	0.00052*	0.00109**	0.00595***	0.00700***
PostReg	-0.00054**	-0.00110**	-	-
*PostReg*Low_PME*	-0.00021	-0.00029	-	-
HomPct	-0.00066	0.00078	-0.00085	0.00243
*HomPct*Low_PME*	0.00156*	0.00003	0.00019	-0.00290
Year Fixed Effects	Included	Included	Included	Included
N	2,378	951	557	224
Adj. R^2	5%	7%	11%	14%

See appendix for the definition of variables. ***, **, and * indicate significance at the one, five, and ten percent level, using two-tailed tests.

Table 8

Provision for loan losses following the Liu and Ryan (2006) model.

$PLL_t = \psi_{0t} + \psi_1(High\_ROA_t) + \psi_2(HomPct_t) + \psi_3(X_t) + \psi_4(DNPA_t) + \psi_5(X_t * High\_ROA_t) + \psi_6(X_t * HomPct_t) + \psi_7(CAPR1_t) + \psi_8(FVE_t) + \psi_9(X_t * FVAT_t) + \psi_{10}(X_t * FVAT_t * High\_ROA_t) + \varepsilon_t$

Variable	*Coefficient*	*p-value*
Intercept	0.01457	<0.001
High_ROA	-0.00624	<0.001
$HomPct_t$	-0.00372	0.014
X	-0.02976	0.376
DNPA	0.26403	<0.001
X High_ROA*	0.15292	0.005
X HomPct*	0.10037	0.028
CAPR1	-0.00017	<0.001
FVE	0.00072	0.663
*X*FVE*	0.00089	0.986
*X*FVE*High_ROA*	-0.19680	0.005
Year Fixed Effects	Included	
N	2,935	
Adj. R^2	44%	

High_ROA is set to one (zero) for observations with above (below) median return on assets. *HomPct* is percent of total loans outstanding that are homogenous loans (consumer loans, 1-4 family residential mortgages, loans to financial institutions, or acceptances of other banks). *X* is net income before the provision for loan losses divided by beginning of year total loans. *DNPA* is the change in nonperforming assets divided by beginning of the year total loans. *CAPR1* is Tier 1 risk-based capital ratio. All other variables are as defined in the appendix.

Table 9

Abnormal loan loss provision (ALLP) following the Kanagaretnam et al. (2010) model.

Panel A: Downward earnings management (Positive ALLP)

$ALLP_t = \psi_{0t} + \psi_1(EXEMPT) + \psi_2(FVE_t) + \psi_3(BIGN_t) + \psi_4(MB_t) + \psi_5(LMVE_t) + \psi_6(LOSS_t) + \psi_7(PASTLLP_t) + \psi_8(EBP_t) + \psi_9(TIER1_{t-1}) + \psi_{10}(TCAP_{t-1}) + \varepsilon_t$

Variable	*Coefficient*	*p-value*
Intercept	0.00129	<0.001
EXEMPT	0.00015	0.111
FVE	-0.00067	0.035
BIGN	-0.00004	0.610
MB	0.00000	0.942
LMVE	-0.00006	0.117
LOSS	0.00215	<0.001
PASTLLP	0.08402	<0.001
EBP	0.02075	0.001
TIER1	0.00003	0.195
TCAP	-0.00003	0.294
Year Fixed Effects	Included	
N	1,310	
Adj. R^2	24%	

Panel B: Upward earnings management (Negative ALLP)

$ALLP_t = \psi_{0t} + \psi_1(EXEMPT) + \psi_2(FVE_t) + \psi_3(BIGN_t) + \psi_4(MB_t) + \psi_5(LMVE_t) + \psi_6(LOSS_t) + \psi_7(PASTLLP_t) + \psi_8(EBP_t) + \psi_9(TIER1_{t-1}) + \psi_{10}(TCAP_{t-1}) + \varepsilon_t$

Variable	*Coefficient*	*p-value*
Intercept	-0.00184	<0.001
EXEMPT	0.00007	0.288
FVE	0.00119	<0.001
BIGN	0.00005	0.294
MB	0.00011	0.013
LMVE	0.00007	0.001
LOSS	-0.00083	0.001
PASTLLP	-0.03380	0.008
EBP	-0.00941	0.046
TIER1	0.00004	0.003
TCAP	-0.00005	<0.001
Year Fixed Effects	Included	
N	1,591	
Adj. R^2	14%	

ALLP is the residual from model (1). *EXEMPT* is set to one (zero) for observations with assets less (greater) than $500 million for fiscal years prior to 2005, and less (greater) than $1 billion for fiscal years in 2005 or later. *MB* is the market-to-book ratio. *LMVE* is the natural log of market value of common equity at the end of the year. *LOSS* is set to one (zero) if net income is less (equal to or greater) than zero. *PASTLLP* is prior year LLP divided by total assets at the beginning of the year. *EBP* is net income before extraordinary items and loan loss provisions divided by total assets at the beginning of the year. *TIER1* is tier 1 risk-adjusted capital ratio at the beginning of the year. *TCAP* is total risk-adjusted capital ratio at the beginning of the year. All other variables are as defined in appendix.