

**Banks' Survival during the Financial Crisis:
The Role of Financial Reporting Transparency**

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ABSTRACT

In this paper, we investigate the effect of bank transparency before the crisis on bank stability during the financial crisis that erupted in 2008. Using a large sample of private and public commercial banks in the United States, we find that transparency enhances stability. We use two measures of transparency. We develop a new measure of financial reporting transparency based on loan loss provision estimation errors. We corroborate our findings using a second measure based on the incidence of accounting restatements. We show that lower transparency before the crisis is associated with higher non-performing loans and lower profitability at the onset of the crisis. We document that banks with lower transparency are more likely to experience regulatory intervention through enforcement actions and bank failures during the crisis. We also find some evidence that higher transparency improves the effectiveness of regulatory enforcement actions.

We appreciate helpful comments from Craig Chapman, John Core, Christopher Noe, Wan Wongsunwai, Joe Weber and seminar participants at MIT, Syracuse University, and Washington University in St. Louis. We are grateful for financial support from the MIT Sloan School of Management and the Accounting Research Center at the Kellogg School of Management.

1. Introduction

The importance of financial reporting transparency as a corporate governance mechanism in financial markets can hardly be overstated (Bushman and Smith, 2001, 2003; Hutton, Marcus, and Tehranian, 2009). A lack of transparency has been regarded as a key reason for turmoil after prominent events such as Enron's December 2001 collapse and the financial crisis that erupted in 2008. Morgan (2002) concludes that the banking industry is more opaque than other industries based on evidence of greater ratings disagreement between bond raters; he suggests that this finding provides some support for banking reforms that will reduce opacity. In this paper, we focus on how financial reporting quality affects bank stability by examining the relation between bank transparency and regulatory intervention in the form of enforcement orders and bank closures. Enforcement orders are issued against banks in which a federal regulator such as the Federal Reserve, the OCC, or the FDIC has found unsafe or unsound banking practices and violations of law and/or regulations. A bank closure, also known as a bank failure, generally refers to the closing of a bank by a federal or state banking regulatory agency due to concerns that the bank will be unable to meet its obligations to its depositors or other creditors.

Various institutions such as the Basel Committee on Banking Supervision, the International Monetary Fund, the World Bank, and bank regulators such as the Federal Deposit Insurance Corporation in the United States and the Financial Services Authority in the United Kingdom have argued that greater financial reporting transparency is an important contributor to bank stability because of the use of financial reports in effective market discipline and bank supervision (e.g., Basel, 1998, 2001; FDIC, 2002; Flannery and Thakor, 2006; FSA, 2011).¹

¹ Basel (1998, p. 15) defines transparency as "public disclosure of reliable and timely information that enables users of that information to make an accurate assessment of a bank's financial condition and performance, its business activities, and the risks related to those activities." Basel (1998) emphasizes that more transparent disclosure is high quality disclosure.

According to Basel (1998), high quality (i.e., more transparent) public disclosure (i) allows a more accurate assessment of a bank's financial strength and performance, (ii) increases the credibility of information disclosed by the bank, (iii) demonstrates the bank's ability to monitor and manage its exposures, and (iv) reduces the uncertainty of market participants.

The prior literature has examined the relation between transparency and stability almost exclusively in a cross-country setting, with mixed results. In an influential cross-country study of how regulatory and supervisory regimes influence the likelihood of country-level banking crises in a sample of 51 countries during the late 1980s and 1990s, Barth, Caprio, and Levine (2004) do not find any significant evidence of the effect of transparency. They define transparency as the market's ability to monitor banks and measure it at the country level as an aggregate of the following individual indicators: (i) whether banks' accounts were required to be audited, (ii) the percentage of a country's top ten banks that were rated by a rating agency, (iii) whether or not the country had an explicit deposit insurance scheme, (iv) whether banks were required to disclose off-balance sheet items, risk management procedures, and non-performing loans, and (v) whether subordinated debt counted as regulatory capital.

In contrast, in a study of 550 listed banks from 32 countries for the years 1994-2000, Nier (2005) uses a disclosure index based on a count of the number of disclosures in the annual reports, as reported in the BankScope database, and finds that greater transparency is associated with a lower likelihood of dramatic stock price drops in any given year. Demirgüç-Kunt, Detragiache, and Tressel (2008), using a sample of 203 banks from 39 countries, find that banks receive more favorable Moody's financial strength ratings in countries with better compliance with the Basel Core Principles related to information provision. Using a sample of banks from 23 countries, Bushman and Williams (2009) distinguish between more and less transparent

accounting regimes by the extent to which banks in each country use loan loss provisioning to smooth accounting earnings. Their findings suggest that accounting discretion over loan loss provisions degrades banks' transparency and weakens the discipline exerted over bank risk taking.

One advantage of the cross-country design is that one can potentially achieve greater variation in transparency across banks. A disadvantage, however, is that many other factors are likely to vary across countries and these are hard to control for, given the limited number of countries. In contrast to these studies, we will study the effect of bank transparency on bank stability within the US. This sample has several advantages. First, we can hold the overall economic and legal environment constant. Second, unlike most prior studies we have data on actual bank failures rather than noisy proxies for financial stability. Third, we can investigate regulatory enforcement actions as a precursor to bank failure. Fourth, our approach allows us to use data on both public and private banks, leading to large sample of commercial banks (6,768 banks). This sample covers almost all the commercial banks operating the United States just before the crisis and contrasts with earlier studies that typically include only the larger and/or publicly listed banks.

To proxy for pre-crisis transparency, we use two measures derived from the Consolidated Reports of Condition and Income that banks file quarterly with their regulators.² For our first measure, we focus on the quality of the loan loss provisioning process; this process is an important accounting process through which banks recognize loan losses in a more timely fashion so as to better match the expenses and revenue of loan making. Consistent with regulatory statements that banks should make appropriate loan loss provisions to adjust for the economic conditions they face, we argue that loan loss provisions are of a higher quality if there

² In this paper, we use the terms “transparency”, reporting quality” and “information quality” interchangeably.

are smaller deviations (over a period of time) from an economic model of loan loss provisions. This interpretation, that more noise in a signal is an indication of lower quality, is also consistent with disclosure theory (see survey by Verrecchia, 2001) and the extensive empirical literature on earnings quality (see survey by Dechow, Ge, and Schrand, 2010).³ We complement this measure using a second reporting quality measure based on the incidence of accounting restatements. Consistent with prior literature on model-based measures of accounting quality and restatements (Dechow, Ge, Larson, and Sloan, 2011), we find that the relation between our two measures is in the predicted direction and is highly statistically significant.

Using these measures, we investigate the effect of bank transparency on bank stability and on several potential mediating mechanisms: non-performing loans, profitability, and bank capital. We provide evidence that poor loan loss provision quality and a higher incidence of restatements is associated with a higher likelihood of subsequent regulatory intervention and bank failures. We also examine some of the underlying mechanisms through which information quality could lead to these associations. One obvious mechanism is the level of non-performing loans, because one might expect banks with poorer information for decision making and monitoring to end up with more problem loans and lower profitability, which, in turn, attracts regulatory interventions. We provide evidence consistent with these mechanisms.

In addition, we examine the effect of transparency on bank capital. Bank capital is the buffer that bank has to absorb losses and is widely regarded as a very important determinant of bank stability. Diamond and Rajan (2000) argue that banks facing greater uncertainty are prone to runs and therefore have incentives to maintain higher capital. This suggests that banks with greater transparency will hold less capital. In contrast, Nier and Baumann (2006) find

³ For example, the extensively-used measure of accruals quality by Dechow and Dichev relies on the principle that accruals are of higher quality if there are smaller deviations in accruals from an economic model of accruals.

empirically that higher transparency is associated with higher capital buffers; they conclude that more effective market discipline provides incentives to hold more capital. Our evidence on the relation between transparency and capital ratios is mixed with our two transparency measures yielding opposite results.

Finally, we investigate whether transparency affects the effectiveness of regulatory intervention. Better reporting quality can enhance the effectiveness of regulatory intervention by alerting the regulator earlier to potential problems and by providing better information for resolving such problems. These two factors lead to the prediction that, conditional on being targeted for regulatory intervention, banks with higher reporting quality will have a lower subsequent probability of bank failure. Our evidence is consistent with this hypothesis but only statistically significant with loan loss provision quality.

Our paper adds to a growing literature that studies the problems that banks faced during the recent financial crisis. For example, Veronesi and Zingales (2010) study the cost and benefits of the government intervention among banks that were the first to participate in the Capital Purchase Program under the broader Troubled Assets Relief Program (TARP). Demyank and Van Hemert (2009), Ivashina and Scharfstein (2010), Keys, Mukherjee, Seru, and Vig (2010), and Beatty and Liao (2011) examine the lending behavior of banks before and during the financial crisis. Campello, Graham, and Harvey (2010) study the real effects of financial constraints during the crisis. Gorton and Metrick (2011) characterize the crisis as a run on the sale and repurchase (repo) market. Unlike these papers, we focus on the role of bank transparency in mitigating the adverse events that banks faced during the crisis.

To the best of our knowledge, we are the first to empirically study the relation between transparency (in terms of loan loss provision quality and restatements), regulatory enforcement

and bank failures. In our analyses, not only do we examine the relation between bank transparency and regulatory intervention, we also study the underlying mechanisms through which bank transparency could impact regulatory intervention. From a policy reform perspective, our finding that greater transparency increases bank stability and improves the effectiveness of regulatory intervention supports the push by various regulators for greater bank transparency so as to increase bank stability.

The remainder of the paper is organized as follows. Section 2 provides background on the US federal banking regulations. Section 3 presents our hypotheses. Section 4 introduces the data and develops the measures of bank transparency. Section 5 covers the empirical analyses on bank transparency and bank stability; Section 6 concludes.

2. Background on the regulation of commercial banks in the United States

2.1 Regulatory agencies

Commercial banks in the US are subject to oversight from various federal regulators. Commercial banks with a national bank charter are supervised by the Office of the Comptroller of the Currency (OCC). State-chartered banks are regulated by state banking regulators. In addition, state-chartered banks that are members of the Federal Reserve System are supervised by the Federal Reserve Board (FRB), while state-chartered banks that are not members are supervised by the Federal Deposit Insurance Corporation (FDIC). (See Figure 1 for an overview of the supervisory responsibilities in the US banking sector.) Responsibilities may overlap; for example, a national charter bank may be part of a bank holding company, in which case the OCC will supervise the national bank but the FRB will oversee the bank holding company. Similarly, the FDIC insures deposits even in banks that are supervised by the OCC and the FRB.

The Office of the Comptroller of the Currency (OCC) is the oldest of the three regulators; it was established in 1863 as an independent bureau of the U.S. Department of the Treasury. The OCC's mission is "to ensure a stable and competitive national banking system". The OCC's bank examiners conduct on-site reviews of national banks to monitor their financial condition and risk management practices. The OCC is financed through assessments on national banks, which pay for the examinations of their operations and other services the OCC provides.⁴ The Federal Reserve System, established in 1913, is the central bank for the United States. It is responsible for monetary policy, bank regulation and supervision, maintaining the stability of the financial system, and providing financial services to financial institutions and the US government.⁵

The Federal Deposit Insurance Corporation (FDIC) is an independent agency of the federal government, created in 1933 in response to the large number of bank failures during the Great Depression. The FDIC insures deposits in commercial banks and thrifts. This deposit insurance is financed through premiums funded by banks and thrift institutions for deposit insurance coverage and from investments in U.S. Treasury securities. The FDIC's mission is "to maintain stability and public confidence in the nation's financial system by: (1) insuring deposits, (2) examining and supervising financial institutions for safety and soundness and consumer protection, and (3) managing receiverships."⁶

The FDIC provides insurance to the depositors up to the insurance limit. Prior to the recent financial crisis, the insurance limit was \$100,000 per depositor, per insured bank, for each account ownership category. The covered amounts include principal and accrued interest and apply to all depositors of the insured bank. On October 3, 2008, shortly after the Lehman Bankruptcy, the limit was raised to \$250,000 to reduce the likelihood of a "run" on bank

⁴ For more information on the OCC, see the OCC website: <http://www.occ.treas.gov/about/index-about.html>.

⁵ For more information on the Federal Reserve System, see: http://www.federalreserve.gov/pf/pdf/pf_1.pdf.

⁶ For more information on the FDIC, see the FDIC website: <http://www.fdic.gov/about/>.

deposits. Initially intended to be a temporary increase, it was later extended and then made permanent under the Dodd-Frank Act on July 21, 2010.

2.2 *Bank examinations and enforcement actions*

The three federal regulatory agencies perform annual examinations of the banks they supervise.⁷ For banks in good financial health, the examination interval can be extended to 18 months. Under certain conditions, further extensions are possible. For example, the FDIC can reduce the examination frequency to alternate periods, provided that the appropriate state supervisory authority conducts an on-site full scope examination in the interim. The regulators' examinations consist of a comprehensive review of six components of a bank's financial conditions. These components include adequacy of capital, quality of assets, capability of management, the quality and level of earnings, adequacy of liquidity, and sensitivity to market risk. Under the Uniform Financial Institutions Rating System (UFIRS), financial institutions are assigned a score for each component and a composite rating. These ratings are also known as CAMELS ratings, an acronym based on the six components of the bank's financial conditions (Capital, Assets, Management, Earnings, Liquidity, and Sensitivity). Ratings range from 1 through 5, with 1 indicating the highest rating.

The ratings are discussed with the bank's senior management so as to give them a better understanding of how they are derived, and to enable the management to better address any weakness in specific areas. If the examination reveals serious weaknesses, regulators can take formal administrative actions to ensure the bank remedies the weaknesses. While ratings are confidential, formal regulatory actions are publicly disclosed on the website of the relevant regulator (FDIC, OCC, or FRB). These enforcement actions contain an identification of the

⁷ Details of the three regulators' policies on bank examinations and their administrative actions can be found at: <http://www.fdic.gov/regulations/safety/manual/>, <http://www.occ.gov/static/publications/handbook/lbs.pdf>, and <http://www.federalreserve.gov/boarddocs/supmanual/cbem/cbem.pdf>.

weaknesses, as well as specific instructions on how and when to address them. The instructions can contain both governance provisions, which require changes in board and management people and practices, and provisions regarding the bank's operations, including the loan loss provision. At the FDIC and the OCC, these actions take the form of cease-and-desist orders; at the FRB, the primary conduit is comprised of written agreements. For some examples of cease-and-desist orders and written agreements, see Appendix A.

For example, with regard to the allowance for loans and lease losses (ALLL), cease-and-desist orders from the FDIC typically include the following clause (Example 1, Appendix A):

“Within thirty (30) days from the effective date of this Order, the Board shall review the appropriateness of the ALLL and establish a comprehensive policy for determining an appropriate level of the ALLL and for documenting its analysis according to the standards set forth in the July 25, 2001, Interagency Policy Statement on Allowance for Loan and Lease Losses Methodologies and Documentation for Banks and Savings Associations. ... Said review should be completed at least ten (10) days prior to the end of each quarter, in order that the findings of the Board with respect to the ALLL may be properly reported in the quarterly Reports of Condition and Income. The review should focus on the results of the Bank's internal loan review, loan and lease loss experience, trends of delinquent and non-accrual loans, an estimate of potential loss exposure of significant credits, concentrations of credit, and present and prospective economic conditions. ...”

As can be seen from the passage above, the regulator wants the bank to ensure that it has appropriate loan loss reserves and, if necessary, to make adjustments to the loan loss reserves (via loan loss provisions).

2.3 *Bank Failures*

A bank failure is the closing of a bank by a federal or state banking regulatory agency. Generally, a bank is closed when it is unable to meet its obligations to depositors and others. When a bank fails, the FDIC acts in two capacities. First, as the insurer of the bank's deposits, the FDIC pays insurance to the depositors up to the insurance limit. Second, the FDIC, as the receiver of the failed bank, assumes the task of selling/collecting the bank's assets and settling its

debts, including claims for deposits in excess of the insured limit. The Federal Deposit Insurance Corporation Improvement Act (FDICIA) of 1991 mandates the use of the least-cost resolution method for bank failures, the objective of which is to minimize the present value of the net losses incurred by the FDIC.

There are two primary types of failure resolution methods: (1) purchase-and-assumption transactions and (2) deposit pay-offs. In a purchase-and-assumption transaction, a healthy bank acquires a failed bank by purchasing “some or all” of its assets and assuming “some or all” of its liabilities. The FDIC often provides assistance to the acquiring bank, e.g., in the form of loan-loss sharing agreements, and then liquidates the remaining assets and liabilities, internalizing the cost of doing so. The acquiring bank usually compensates the FDIC for the franchise value from the failed bank’s established customer relationships, which helps reduce the insurer’s resolution cost. In a deposit-payoff transaction, the FDIC pays the failed bank’s depositors the full amount of their insured deposits. See Appendix B for an example of an FDIC press release of a bank failure.

3. Hypothesis development

Having a high quality accounting system is important for at least two reasons. First, the greater transparency inherent in such a system facilitates the decision making and internal monitoring of a bank’s loan portfolio by managers and its board of directors. Second, it facilitates external monitoring by regulators and other stakeholders (e.g., auditors, investors, and customers). Lower information quality for internal decision-making creates greater uncertainty about investment and lending decisions, which results in greater risk exposure. If competing banks have higher information quality, then they will be able to make better lending decisions,

reducing the quality of the remaining pool. In such a case, weaker information quality does not only lead to higher risk regarding credit losses, it also leads to higher expected losses. Both of these effects will undermine bank stability ex-post. However, ex-ante, banks may choose to hold more equity capital as a buffer against these risks (Diamond and Rajan, 2000).

Lower information quality also can affect the efficacy of external monitoring. In principle, better information quality should improve monitoring, reduce risk, and increase profitability. However, this assessment has several caveats. First, Cordella and Yeyati (1998) show that under some conditions, full transparency can raise the deposit interest rate that banks have to pay, which in turn reduces profitability and may increase the chance of bank failure. Second, external monitoring may not be as effective if other stakeholders are insulated from the negative effects of bank failures. For example, deposit insurance removes depositors' incentives to monitor the bank's failure risk (as long as their deposits remain below the insured limit). For this reason, Hyytinen and Takalo (2002) suggest that transparency regulation aimed at reducing financial fragility might not work because an extensive financial safety net eliminates the disciplinary effect of transparency regulation. If transparency is costly, it dilutes charter values, hence reducing the private costs of risk taking, which may increase the risk of bank failure (Keeley, 1990).

Overall, the literature provides competing hypotheses regarding the effect of transparency on bank failure; it is ultimately an empirical question as to which effect dominates. To gain more insight into the mechanisms through which transparency affects bank failure, we therefore first investigate the relation between reporting quality and several mediating mechanisms.

First, if a bank with lower information quality is competing with banks that have better information quality, then the bank will end up with a portfolio that consists of the weaker assets

within each risk class. In addition, with lower information transparency it is harder for various stakeholders to monitor the bank's actions and take appropriate actions to prevent problems from accumulating and festering. We therefore predict that banks with lower information quality will end up with more non-performing loans (loans that are more than 90 days past due but still accruing interest and non-accruing loans). Because of competition, banks cannot sufficiently increase the interest they charge on their loans to offset their greater costs due to non-performing loans, as this would merely drive the better borrowers to the bank's competitors. We therefore also predict that banks with lower information quality will be less profitable. This leads to the following hypotheses:

H1: More transparency is associated with less non-performing loans.

H2: More transparency is associated with higher profitability.

Bank failure is a function not just of the current performance but also of the buffer that the bank has available to absorb the losses. There are two opposing effects at work. First, lower profitability directly leads to lower equity capital because retained earnings are lower. Second, to safeguard against the additional risk caused by lower information quality, banks can opt to hold more equity capital. To ensure that banks hold adequate capital, regulators set minimum capital ratio guidelines; the minimum tier 1 and total capital that must be maintained is 4% and 8%, respectively, of risk-weighted assets (Basel II). However, these are the minimum capital ratios; regulators encourage higher levels and banks can hold additional capital at their own discretion. According to the theory of bank capital proposed by Diamond and Rajan (2000), banks deposits are prone to runs and increased uncertainty increases the likelihood of runs. As a result, banks associated with greater uncertainty have an incentive to maintain greater bank capital to reduce the probability of financial distress. However, using a sample of about 450

banks from 32 countries, Nier and Baumann (2006) find that higher transparency is associated with higher capital buffers.⁸ They conclude that more effective market discipline due to higher transparency provides incentives to hold higher capital buffers. This leads to the following hypothesis, stated in null form because of the competing arguments:

H3: More transparency is not associated with the level of bank capital.

Next, we investigate the relation between transparency and bank failures by looking at two sets of measures. In addition to the bank failures, we look at the enforcement actions of the three federal regulators (OCC, FRB, and FDIC). Our purpose in doing so is twofold. First, regulatory enforcement actions are targeted towards banks with serious, but not yet fatal, weaknesses in their operations. This broader definition of “failure” allows for a larger sample. Second, to the extent that regulatory intervention is successful in improving the bank, this may diminish the effect of transparency on bank failure. As we hypothesized above, we expect banks with lower transparency to have more non-performing loans and lower profitability, which will lead to higher incidence of bank failure. However, to the extent these banks hold more capital, the effect is more ambiguous. Given that the setting of our paper is the financial crisis of 2008, a worse-than-usual crisis, we expect the first effect to dominate. This leads to the following hypotheses:

H4: More transparency is associated with a lower likelihood of regulatory enforcement.

H5: More transparency is associated with a lower likelihood of bank failure.

Our hypotheses so far suggest that banks with better reporting quality have better outcomes in terms of their performance, the likelihood of regulatory intervention, and the likelihood of bank failure. These hypotheses are consistent with banks with higher reporting

⁸ Nier and Baumann (2006) measure transparency in terms of: (i) whether the bank has a listing on a primary US exchange, (ii) whether the bank is rated by a major rating agency, and (iii) a disclosure index based on a count of the number of disclosures in the annual reports, as reported in the BankScope database.

quality having better information available for internal decision making, but also with higher reporting quality enabling other stakeholders to better monitor the bank. We try to partially separate these two explanations by examining the effect of reporting quality on the effectiveness of regulatory intervention. As the regulators' actions are observable, we are able to examine the behavior of an important external monitor. Better reporting quality can enhance the effectiveness of regulatory intervention by alerting the regulator earlier to potential problems and by providing better information for resolving such problems. These two factors lead to the prediction that, conditional on being targeted for regulatory intervention, banks with higher reporting quality will have a lower subsequent probability of bank failure. In support of the null hypothesis is the fact that the regulators can rely on their own audits of the bank, which may make the quality of the reporting system less important. This leads to the following hypothesis:

H6: More transparency is associated with a lower incidence of bank failures following regulatory enforcement actions

In testing each of hypotheses 4 through 6, we first consider the total effect of transparency on regulatory enforcement action and failure. Next, we separately consider the effects of the mediating mechanisms identified in hypotheses 1 through 3 and the remaining effect after controlling for these mechanisms. Obviously, the three mechanisms we identify (non-performing loans, profitability, and tier 1 capital) affect enforcement actions and bank failures for reasons other than transparency. The implicit assumption we are making in the analysis is that the other causes are uncorrelated with our measures of transparency after the control variables are included. We therefore extensively control for risk and other bank characteristics. The connection between the hypotheses is depicted in Figure 2.

4. Data and measures

We obtain data on the banks' financial information from the call reports banks file with the Federal Reserve, the Federal Deposit Insurance Corporation, or the Office of the Comptroller of the Currency. The data is available in machine-readable form at the Chicago Federal Reserve website.⁹ Using this data, we construct two measures of transparency using the call report data from 2002 to 2007; the choice of this time period is because we want to measure the pre-crisis level of transparency. The first measure is based on the quality of the loan loss provision estimates; the second measure is based on whether the bank restated its prior reports. In the next section, we discuss these measures in greater detail.

4.1 Loan loss provision quality

Our first measure of bank transparency is based on the quality of the loan loss provisioning estimates in the bank's regulatory reports. Loan loss reserves, also known as the 'allowance for loan and lease losses', are balance sheet adjustments to the loans' book value made to cover expected loan losses. According to the Interagency Policy Statement on the Allowance for Loan and Lease Losses (2006), issued jointly by the Office of the Comptroller of the Currency, the Board of Governors of the Federal Reserve System, the Federal Deposit Insurance Corporation, the National Credit Union Administration, and the Office of Thrift Supervision, the loan loss reserve represents one of the most significant estimates in an institution's financial statements and regulatory reports. When loans are charged-off, they are taken out of these loan loss reserves, rather than directly out of earnings. Banks make periodic loan loss provisions to adjust the loan loss reserves so that they reflect the expected loan losses.

Theoretically, the transparency of loan loss provisioning can be viewed as the precision of the loan loss provision signal received by the signal's users; a more precise signal reflects

⁹ http://www.chicagofed.org/webpages/banking/financial_institution_reports/commercial_bank_data.cfm.

greater transparency (e.g., Verrecchia, 2001). Hence, we assume that a more precise signal regarding loan loss provisions translates into greater transparency over credit losses. Hence, we focus on the noise in loan loss provisioning rather than whether it is high or low. This focus is also supported by the objectives of the regulators. In its testimony to the U.S. House of Representatives on June 16, 1999, the OCC notes that “A wide range of factors comes into play in that analysis, including economic trends and other environmental influences. If the reserve is found to be too small, then the bank must increase its provision – the amount it takes out of earnings – to restore the reserve to an appropriate amount. If, on the other hand, the reserve exceeds the amount of estimated losses, the bank must decrease its provision.” (OCC, 1999). Similarly, the Interagency Policy Statement on the Allowance for Loan and Lease Losses (2006) states that the ALLL “should take into consideration all available information existing as of the financial statement date, including environmental factors such as industry, geographical, economic, and political factors.”

To measure loan loss provision quality, we begin with a simple accounting equation regarding loan loss reserves:

$$\text{Loan loss reserves}_t = \text{Loan loss reserves}_{t-1} - \text{Net charge-offs}_t + \text{Loan loss provisions}_t \quad (1a)$$

The loan loss reserves at the end of the prior period, i.e., $t-1$, reflect an estimate of the loans that were expected to be charged-off. During the period, actual net charge-offs (charge-offs are also known as loan losses) reduce the available reserves. The loan loss provisions are then used to increase the reserves, such that the ending balance reflects the loan losses that are expected to occur in the future (Wall and Koch, 2000). Hence, the equation for loan loss provisions is:

$$\text{Loan loss provisions}_t = \text{Loan loss reserves}_t - \text{Loan loss reserves}_{t-1} + \text{Net charge-offs}_t \quad (1b)$$

This set-up suggests the following two drivers of the loan loss provisions made at time t . First, banks are expected to make more loss loan provisions if the beginning loan loss reserves

were insufficient or if there are high levels of current charge-offs (e.g., Wahlen, 1994; Beaver and Engel, 1996; Beatty, Ke, and Petroni, 2002). Hence, loan loss provisions are expected to be negatively related to beginning loan loss reserves and positively related to contemporaneous charge-offs. Second, banks are expected to make more loan loss provisions if they expect future loan losses to be higher (e.g., Wahlen, 1994; Beaver and Engel, 1996; Beatty et al., 2002; Beatty and Liao, 2011). To capture these expectations, we use realized net charge-offs at $t+1$ as a proxy for banks' ex-ante expectations of these losses at time t ; we expect a positive association between loan loss provisions and net charge-offs at $t+1$. In addition, we use the change in non-performing loans (loans that are 90-days or more past due or that are nonaccrual) at time t and time $t+1$ as a proxy for expectations of future charge-offs; hence, we expect a positive association between loan loss provisions and the contemporaneous and future changes in non-performing loans. Hence our empirical model for loan loss provisions is:

$$LLP_t = \beta_0 + \beta_1 LLR_{t-1} + \beta_2 NCO_t + \beta_3 NCO_{t+1} + \beta_4 CH_NPL_t + \beta_5 CH_NPL_{t+1} + \varepsilon_t, \quad (2)$$

where LLP_t is loan loss provisions at time t ; LLR_{t-1} is the beginning-of-period level of the loan loss reserves; NCO_t , and NCO_{t+1} are net charge-offs at times t and $t+1$, respectively; and CH_NPL_t and CH_NPL_{t+1} are the change in non-performing loans from time $t-1$ to time t , and from time t to $t+1$, respectively. All variables are scaled by total loans at time t .

Table 1 presents the descriptive statistics and regression results based on the specification in Eq. (2). First, Panel A provides some descriptive statistics for the variables. The mean LLP_t is 0.336, indicating that the mean loan loss provision for the years 2002 to 2006 is 0.336% of total loans. The loan loss provision represents about 5.5% of the net interest revenue for the average bank, suggesting that it is an important component of a bank's earnings. The mean net charge-offs for the current, and next year, as a percentage of total assets, are 0.247%, and 0.234%,

respectively. The change in non-performing loans as a percentage of total loans from the previous to the current year is -0.035%, and from the current to the next year is 0.066%.

Panel B presents the results of the loan loss provision model for each year from 2002 to 2006. There is evidence that the current year's net charge-offs (NCO_t) are a very significant determinant of the current year's loan loss provisions (LLP_t). For example, in 2006, the coefficient on NCO_t is 0.77 and highly statistically significant (t-statistic = 82.82). Economically, this means that a \$1 increase in the current year's net charge-offs is associated with a \$0.77 increase in the current year's loan loss provision. The statistically significant and positive coefficient on NCO_{t+1} provides strong evidence that banks anticipate next year's net charge-offs when forming loan loss provisions in the current year.¹⁰ Finally, an increase in non-performing loans is significantly associated with more loan loss provisions, consistent with the notion that indications of a loan portfolio's deteriorating condition lead to more loan loss provisions. The explanatory power of this model is high, with the R-squared averaging 68%.

Similar to how accruals quality is defined in Dechow and Dichev (2002), loan loss provision quality, $LLPQ$, is then constructed for each bank by first taking the standard deviation of the bank-specific residuals, ε , over the five years and then multiplying the resulting number by minus one.¹¹ The latter step is done so that higher values of $LLPQ$ indicate higher loan loss provision quality. Two sources of error in the loan loss provisioning process will lead to a higher standard deviation of residuals. First, if the bank has a poor understanding of the development of its loans losses and instead relies on average loss rates, it will result in a mismatch between loan

¹⁰ The results in this paper are very similar if we estimate the $LLPQ$ based on the residuals from a model that also includes NCO_{t-1} . In particular, the coefficients on NCO_{t-1} are small relative to the other variables, not always statistically significant, and the contribution to the R-squared is minimal.

¹¹ Dechow and Dichev's (2002) accruals quality measure has been adapted and used in many subsequent studies that examine issues related to the quality of accounting information (e.g., McNichols, 2002; Francis, LaFond, Olsson, and Schipper, 2004, 2005; Lee and Masulis, 2009).

loss provision and its economic determinants, which, in turn, will result in more volatile residuals. Second, if the bank uses the loan loss reserve to manage earnings, then the earnings management and subsequent reversals will increase the volatility of the residuals. In our sample, we measure *LLPQ* as of 2007 as the negative of the standard deviation of its five loan loss provision residuals from 2002 to 2006; the one year lag is introduced because the loan loss provision model at time t requires net charge-offs at time $t+1$. The number of banks for which *LLPQ* can be estimated is 6,768.

In the regression analysis, we use indicator variables for the extreme terciles rather than the continuous variable. This is a parsimonious approach that is more robust to outliers and potential non-linearities. While this approach is more robust, it does suffer from lower power if the data are well behaved. However, Lys and Sabino (1992) show that a tercile approach is close to the optimal grouping that maximizes power.

Institutionally, there are many factors that could influence the extent to which there are loan loss provision estimation errors. First, the estimation of loan loss reserves is a complex process that requires the use of models and assumptions, and is hence subject to significant estimation noise. Second, when projecting losses, less transparent loan loss provisioning can arise from the inability or opportunism of employees, and of management in particular. For example, Kaminsky and Reinhart (1999, p. 476) note that indicators of non-performing loans are “made less informative by banks’ desire to hide their problems for as long as possible”. Second, low-quality loss loan provisioning can also be due to poor information and internal control systems and processes. For example, Doyle, Ge, and McVay (2007) find that in non-financial firms, weak internal controls are generally associated with poor accruals quality. Finally, loan loss provisioning might also be less transparent because of the innate nature of the loan portfolio;

if, for example, it is riskier and/or less diversified, it might be less transparent. To focus on transparency that is driven by accounting, we control for these innate characteristics in this study.

4.2 *Restatements*

Our second measure of reporting quality is based on whether the bank needed to restate its prior reports. Errors in financial statements that lead to restatements make it harder to monitor the bank, as the true financial condition is only known after the restatement has been made. In addition, Doyle, Ge, and McVay (2007) find that restatements are indicative of weaknesses in internal control systems, suggesting that firms with restatements also have lower quality information available for internal decision making. Durnev and Mangen (2009) find evidence that restatements provide information important to investment decisions, and consistent with restatements affecting firms' outcomes, Chen, Cheng, and Lo (2009) find that following restatements, firms having problems raising capital.

According to the Instructions for Preparation of Consolidated Reports of Condition and Income (FFIEC 031 and 041), banks need to restate their financials under the following conditions:¹²

- (1) Mathematical mistakes.
- (2) Mistakes in applying accounting principles.
- (3) Improper use of information which existed when the prior Reports of Condition and Income were prepared.
- (4) A change from an accounting principle that is neither accepted nor sanctioned by bank supervisors to one that is acceptable to supervisors.

Mere changes in accounting estimates, such as increases in the loan loss provisions to address previous shortfalls, do not lead to restatements, since "changes in accounting estimates are an inherent part of the accrual accounting process."

¹² www.ffiec.gov/PDF/FFIEC_forms/FFIEC031_041_200503_i.pdf

The advantage of the restatement measure is that it is a readily available and unambiguous measure of errors in financial reporting. The drawback is that it does not capture the quality of the accounting estimates, which is also important for monitoring and internal decision making. In contrast, the loan loss provision quality measure (*LLPQ*) is intended to capture both errors of the sort that necessitate restatements as well as the quality of accounting estimates. However, the loan loss provision quality measure has drawbacks of its own: it relies on a necessarily imperfect model and it focuses on a single, albeit very important, accounting estimate. The two measures complement each other; together they provide a more complete picture of the effect of transparency on regulatory enforcement actions and bank failures.

We construct the restatement variable by identifying banks with restatements during the 2002-2006 period. We use an indicator variable, *NO_RESTATEMENT*, that is equal to one if the bank had no restatements in any year during this period and zero otherwise; note that firms with no restatements are regarded as being more transparent. During the sample period, the majority of the banks (80%) had no restatements and about 20% of the banks had one or more restatements. Consistent with prior literature on model-based measures of accounting quality and restatements (Dechow et al., 2011), we find that the relation between *LLPQ* and *NO_RESTATEMENT* is in the predicted direction and is highly statistically significant (the Pearson correlation is 0.07775 with a p-value < 0.0001).

4.3 Sample construction and descriptive statistics

To be included in our sample, a bank must have sufficient data to compute the proxies for financial reporting transparency and the control variables which are constructed from the 2007 call reports. All the control variables are measured using data on the banks' financial information from the call reports. The data requirements reduce the sample to 6,768 banks. We then obtain

the data on enforcement actions from the websites of the three federal regulators. Included are the cease-and-desist orders issued by all three regulators and the written agreements issued by the Federal Reserve Board. We also obtain bank failure data from the website of the FDIC. The FDIC is appointed as the receiver in the event of a bank failure and consequently makes public a press release that provides details about the bank at the time of the failure, including the actions being taken to deal with it. See Figure 2 for the timeline for the construction of the variables.

Table 2 provides descriptive statistics for the enforcement actions and bank failures. Panel A provides the number of banks and enforcement actions by regulator. The FDIC is the primary regulatory authority for almost two thirds of the sample banks. It also issues the majority of the enforcement actions in the sample, although it is smaller as a percentage of banks under supervision, suggesting that the FDIC issues enforcement actions to a lesser degree than do the other two regulators. Panel B shows the time-series of commercial bank failures. From this it is clear that the number of bank failures drastically increases during the financial crisis. We provide both all commercial bank failures (on the left) and those of the banks that are in our final sample (on the right). From this it can be seen that we capture most of the bank failures in both number and total cost to the FDIC. Panel C shows the distribution of regulatory enforcements (bank failures) in 2008, 2009, and 2010 across the various states and overseas territories.

Table 3 provides descriptive statistics for the variables used in the regression analysis. Panel A shows the distribution of the main variables and the control variables and Panel B offers a correlation table of the reporting quality measures and the dependent variables. As discussed above, our measures of reporting quality correlate as expected. Banks with the highest (lowest) loan loss provision quality have a lower (higher) incidence of restatements. Univariate correlations with the dependent variables are generally in the hypothesized direction and

consistent across the reporting quality measures. The only exception is the relation between *HIGH_LLPO* and *TIER1*, which is statistically indistinguishable from zero. We next discuss the results of the multivariate analysis.

5. Empirical analyses

The framework of our empirical analyses is depicted in Figure 2. To study the overall link between loan loss provision quality and regulatory intervention, we first examine how loan loss provisioning quality is associated with three important factors that regulators focus on: non-performing loans, profitability, and bank capital. We then examine the overall link between loan loss provision quality and regulatory intervention, as well as determine whether reporting quality has a direct effect on regulatory intervention, after accounting for npl, profitability, and bank capital as mediating mechanisms.

5.1 *The effect of bank transparency on non-performing loans, profitability, and capital*

We first test the effect of the loan loss provision quality on the mediating mechanism (H1 through H3). To ensure that the *LLPO* measure captures information quality rather than a bank's underlying risk, we control for several aspects of risk. First, we include the standard deviation of the underlying net charge-offs (*STD_NCO*). Second, we include several risk related variables in order to capture the amount of diversification in the loan portfolio (*LOAN_CONCENTRATION*), the overall diversification (*TOTAL_ASSET*), exposure to real estate (*LOAN_REAL_ESTATE*), and the fraction of assets with the highest risk weighting (*ASSET_RISK*), as well as several general control variables. We also include indicator variables for the bank's region and its primary federal regulator. *LLPO*, *NO_RESTATEMENT*, and *STD_NCO* are measured over 2002-2006; all other variables are measured as of 2007. The results are displayed in Table 4.

The first two columns show the relation between our measures of transparency, *LLPQ* and *NO_RESTATEMENT*, and the fraction of non-performing loans. Consistent with our prediction, banks with better information quality have fewer non-performing loans. Given that our transparency variables are indicator variables, the economic significance can readily be seen from the coefficients. The coefficient on *HIGH_LLQ* (*LOW_LLQ*) is -0.25 (0.29), indicating that banks in the top (bottom) tercile have 0.25% less (0.29% more) non-performing loans as a percentage of total loans, compared to the middle tercile. This compares to a sample average *NPL* fraction of 1.2% of total loans, suggesting this is an economically meaningful effect. Results using the *NO_RESTATEMENT* are consistent but smaller. A notable finding in the control variables is that banks with a large portion of real estate loans have, by the end of 2007, already begun to accumulate more non-performing loans.

The third and fourth column shows the relation between transparency and banks' profitability, measured by *ROA*. Consistent with the prediction, banks with better information quality enjoy a higher profitability. The difference in profitability for the extreme terciles is 0.30% (0.09% – -0.21%), compared to a sample average *ROA* of 0.98%, which again suggests that this is an economically meaningful effect. Results using the *NO_RESTATEMENT* are consistent but again somewhat smaller. These findings imply that reporting transparency does not just affect the quality of the loan portfolio, but that it also directly affects the bank's bottom line.

The final pair of columns shows the relation between transparency and banks' holdings of equity capital. Here the findings are mixed. The coefficient on *HIGH_LLQ* is positive and significant, while the coefficient on *LOW_LLQ* is also positive, but much smaller and statistically insignificant. This is consistent with findings in Nier and Baumann (2006) that more

transparent banks hold more capital. In contrast, the results using the *NO_RESTATEMENT* are consistent with the theory presented in Diamond and Rajan (2000) that more transparent banks hold less capital. Control variables generally load in the expected direction. Banks with less diversified loan portfolios hold more capital, and larger banks hold less capital. In addition, banks with a large portion of real estate loans hold less capital, which may seem strange given the role of mortgages in the current financial crisis. However, in general, these loans are considered less risky due to the greater amount of collateral.

While it is difficult to firmly establish causality, we carefully control for different dimensions of the bank's risk exposure and our key independent variables, *LLPQ* and *NO_RESTATEMENT*, are lagged relative to the other variables. As an additional robustness analysis, we also perform the regressions including the lagged dependent variable at its 2001 value, in order to control for the condition of the bank before the measurement of the reporting quality variables. As expected, in all six regressions, the lagged dependent variable has a positive and significant coefficient. More importantly, the coefficients on *LLPQ* and *NO_RESTATEMENT* maintain their sign and significance, although the coefficient magnitudes are somewhat reduced. Overall, these analyses provide some added assurance to our analysis.

5.2 *The effect of bank transparency on regulatory enforcement actions and bank failure*

Table 5 displays our tests of H5, the effect of information quality on regulatory intervention. The dependent variable is an indicator equal to one if the bank was targeted by its federal regulator with an enforcement action at any point in the 2008 to 2010 period. In the first column, we show the *LLPQ* results with the risk and general controls included, but excluding the hypothesized mediating mechanisms. The results indicate that banks with weaker loan loss provision quality are more likely to be targeted by regulators. In the second column, we show the

effects using *NO_RESTATEMENT* and find similar effects. To evaluate the economic significance of the effects, we calculate the marginal effects at the mean of the control variables. The marginal effects (not tabulated) for *HIGH_LLPO*, *LOW_LLPO*, and *NO_RESTATEMENT* are -1.9%, 2.2%, and -1.6% respectively. For comparison, the baseline probability of receiving an enforcement action is 4.6% at the mean of all the variables in the model, and the unconditional probability of receiving an enforcement action is 7.9%.

The third column shows the effects of the mediating mechanisms; the coefficients are in the expected direction and are highly significant. The fourth and fifth columns show the full model. While the coefficients are somewhat smaller than those in the first two columns, they are still statistically significant. The marginal effects (not tabulated) for *HIGH_LLPO*, *LOW_LLPO*, and *NO_RESTATEMENT* are -1.0%, 1.1%, and -1.0% respectively. For comparison, the baseline probability of receiving an enforcement action is 3.7% at the mean of all the variables in the model; the unconditional probability of receiving an enforcement action is 7.9%. These results indicate that loan loss provision quality affects regulatory enforcement actions beyond the indirect effects through the mediating mechanisms.

Next, Table 6 shows the relation between bank transparency and bank failures. The dependent variable is an indicator equal to one if the bank failed during any of the years between 2008 and 2010. In the first column, we show the results with the risk and general controls included, but excluding the hypothesized mediating mechanisms. The results indicate that banks with weaker loan loss provision quality are more likely to fail. In the second column, we show the effects using *NO_RESTATEMENT* and find similar though weaker effects. The marginal effects (not tabulated) for *HIGH_LLPO*, *LOW_LLPO*, and *NO_RESTATEMENT* are -0.55%, 0.35%, and -0.36% respectively. For comparison, the baseline probability of bank failure is 1.0%

at the mean of all the variables in the model, and the unconditional probability bank failure is 3.1%.

The third column shows the effects of the mediating mechanisms; the coefficients are in the expected direction and are highly significant. The fourth and fifth columns show the full model. The coefficients are somewhat smaller than those in the first two columns, and only *HIGH_LLPO* remains statistically significant. The marginal effects (not tabulated) for *HIGH_LLPO*, *LOW_LLPO*, and *NO_RESTATEMENT* are -0.22%, 0.08%, and -0.16% respectively. For comparison, the baseline probability of bank failure is 0.62% at the mean of all the variables in the model and the unconditional probability of bank failure is 3.1%. These results indicate that bank transparency affects bank failure primarily through the mediating mechanisms.

Our results so far suggest that banks with better reporting quality have better outcomes in terms of their performance, the likelihood of regulatory intervention, and the likelihood of bank failure. To partially separate monitoring versus the quality of internal decision making explanations, we next examine the effect of reporting quality on the effectiveness of regulatory intervention. We test this prediction using the sample of 534 banks targeted by their regulator for formal intervention (cease-and-desist orders and written agreements). These banks tend to have significant problems. While only about 3% of banks in the full sample fail, 27% of banks in this subsample fail. If bank transparency affects the effectiveness of regulatory intervention, then we expect the incidence of bank failure following enforcement actions to be lower for more transparent banks.¹³

¹³ An alternative measure of the regulatory effectiveness is to examine the likelihood of ‘surprise’ bank failures, banks that failed before the regulator took action. The drawback of this approach is that the sample size becomes very small, leading to low power. Only slightly less than one third of the failures can be characterized as a ‘surprise’

The results are reported in Table 7. The findings are consistent with the bank transparency improving the effectiveness of regulatory enforcement actions, though only the coefficient on *HIGH_LLPO* is statistically significant. The marginal effects (not tabulated) for *HIGH_LLPO*, *LOW_LLPO*, and *NO_RESTATEMENT* are 11%, 1.5%, and -5.8% respectively. For comparison, the baseline probability of bank failure is 24% at the mean of all the variables in the model and the unconditional probability of bank failure is 27% in the sample of banks that received a regulatory enforcement action. These results provide some evidence that reporting quality affects the effectiveness of regulatory intervention, and that audits performed by the regulator cannot fully overcome deficiencies in a bank's reporting system.

6. Conclusion

In this paper, we examine the effect of bank transparency on bank stability during the financial crisis. We first develop a new measure of bank transparency based on the mapping between the loan loss provision and net charge-offs. We argue that the quality of loan loss provisions and earnings is increasing in the strength of the mapping between loan loss provisions and current and future net charge-offs. Our model for loan loss provisions fits the data well, with an average cross-sectional R-squared of 68%. We then construct our loan loss provision quality measure (*LLPO*) as the negative of the bank-specific standard deviation of model residuals. We complement this measure using a second reporting quality measure based on the incidence of accounting restatements. Consistent with prior literature on model-based measures of accounting quality and restatements (Dechow et al., 2011), we find that the relation between our two measures is in the predicted direction and is highly statistically significant.

failure. Using this alternative test, the univariate results are consistent with the hypotheses and statistically significant. However, after including the control variables, the results are no longer statistically significant.

We then use these measures to investigate the effect of bank transparency on bank stability during the crisis period. We posit that weaker information quality leads to lower quality loan portfolios, which results in more non-performing loans and lower profitability. We find evidence consistent with both of these predictions. A potential factor that offsets the negative outcomes of weaker information quality is that, ex-ante, banks might hold more capital to safeguard against the higher uncertainty (Diamond and Rajan, 2000); our results on this are mixed. Next, we investigate the relation between transparency and bank stability, focusing on two measures of bank stability. First, the three federal bank regulators (the Office of the Comptroller of the Currency, the Federal Reserve Board, and the Federal Deposit Insurance Corporation) perform regular audits of the commercial banks in our sample. If they find significant weaknesses in a bank's operations, they will issue enforcement actions against it. Using these enforcement actions and data on actual bank failures, we find that banks with lower loan loss provision quality and a higher incidence of restatements have a greater incidence of regulatory intervention and bank failure. We also find some evidence that higher reporting quality improves the effectiveness of regulatory intervention. Overall, our findings highlight the importance of banks' reporting quality.

Appendix A: Extracts from enforcement actions against banks

Example 1: FDIC Cease-and-desist Order against Hometown Bank of Villa Rica

Full report available at: <http://www.fdic.gov/bank/individual/enforcement/2008-01-01.pdf>

ORDER TO CEASE AND DESIST

“IT IS HEREBY ORDERED, that the Bank, its institution-affiliated parties, as that term is defined in section 3(u) of the Act, 12 U.S.C. § 1813(u), and its successors and assigns cease and desist from the following unsafe and unsound banking practices and violations of law and regulation:

- (a) operating with a board of directors (“Board”) that has failed to provide adequate supervision over and direction to the management of the Bank;
- (b) operating with inadequate management;
- (c) operating with inadequate equity capital and reserves in relation to the volume and quality of assets held by the Bank;
- (d) operating with a large volume of poor quality loans;
- (e) operating with an inadequate allowance for loan and lease losses (“ALLL”);
- (f) following hazardous lending and lax collection practices;
- (g) operating with inadequate routine and controls policies;
- (h) operating in such a manner as to produce operating losses; and
- (i) violating laws, regulations and/or statements of policy as more fully described on pages 17-22 of the FDIC Report of Examination as of September 30, 2006 (“Report”).”

“IT IS HEREBY ORDERED, that the Bank, its institution-affiliated parties, and its successors and assigns, take affirmative action as follows:”

BOARD OF DIRECTORS

“Immediately upon the effective date of this Order, the Board shall increase its participation in the affairs of the Bank, assuming full responsibility for the approval of sound policies and objectives and for the supervision of all of the Bank's activities, consistent with the role and expertise commonly expected for directors of banks of comparable size. This participation shall include meetings to be held no less frequently than monthly at which, at a minimum, the following areas shall be reviewed and approved: reports of income and expenses; new, overdue, renewal, insider, charged-off, and recovered loans; investment activity; operating policies; and individual committee actions. Board minutes shall document these reviews and approvals, including the names of any dissenting directors.”

MANAGEMENT

“Within sixty (60) days from the effective date of this Order, the Bank shall have and retain qualified management. Each member of management shall have qualifications and experience commensurate with his or her duties and responsibilities at the Bank. Management shall include a chief executive officer responsible for supervision of the lending function and with oversight responsibility for all other areas of bank operations. This individual must have the proven ability in managing a bank of comparable size and in effectively implementing lending, investment and operating policies in accordance with sound banking practices. Management shall also include a senior lending officer with significant appropriate lending, collection, and loan supervision experience, and proven success in upgrading a low quality loan portfolio. Each member of management shall be provided appropriate written authority from the Board to implement the provisions of this Order.”

CAPITAL

“Within thirty (30) days from the effective date of this Order, the Bank shall have Tier 1 capital in such an amount as to equal or exceed 7.0 percent of the Bank's total assets. Thereafter, during the life of this Order, the Bank shall maintain Tier 1 capital in such an amount as to equal or exceed 7.0 percent of the Bank's total assets.”

CHARGE-OFF

“Within ten (10) days from the effective date of this Order, the Bank shall eliminate from its books, by charge-off or collection, all assets or portions of assets classified “Loss” and fifty (50) percent of all assets or portions of assets

classified "Doubtful" in the Report that have not been previously collected or charged-off. (If an asset classified "Doubtful" is a loan, the Bank may, in the alternative, increase its ALLL by an amount equal to fifty (50) percent of the loan classified "Doubtful.") Elimination of these assets through proceeds of other loans made by the Bank is not considered collection for purposes of this paragraph."

NO ADDITIONAL CREDIT

"Beginning with the effective date of this Order, the Bank shall not extend, directly or indirectly, any additional credit to, or for the benefit of, any borrower who has a loan or other extension of credit from the Bank that has been charged off or classified, in whole or in part, "Loss" or "Doubtful" and is uncollected. The requirements of this paragraph shall not prohibit the Bank from renewing (after collection in cash of interest due from the borrower) any credit already extended to any borrower."

PLANS FOR REDUCING/IMPROVING CLASSIFIED ASSETS

"Within ninety (90) days of the effective date of this Order, the Bank shall submit to the Supervisory Authorities specific plans and proposals to effect the reduction and/or improvement of any lines of credit which are adversely classified by the Supervisory Authorities as of the date of the Report and which aggregate \$500,000 or more as of that date. Such plans shall thereafter be monitored and progress reports thereon resubmitted by the Bank at 90-day intervals concurrently with the other reporting requirements set forth in Paragraph 25 of this Order."

LENDING AND COLLECTION POLICIES

"Within sixty (60) days from the effective date of this Order, the Bank shall revise, adopt, and implement written lending and collection policies to provide effective guidance and control over the Bank's lending function, which policies shall include specific guidelines for placing loans on a non-accrual basis as well as monitoring individual and industry loan concentrations. In addition, the Bank shall obtain adequate and current documentation for all loans in the Bank's loan portfolio. Such policies and their implementation shall be in a form and manner acceptable to the Supervisory Authorities as determined at subsequent examinations and/or visitations."

REDUCE CONCENTRATIONS OF CREDIT

"Within thirty (30) days from the effective date of this Order, the Bank shall adopt and produce to the Supervisory Authorities a plan to reduce, within one hundred eighty (180) days, each loan concentration as specified on Pages 75-76 of Report to an amount which shall be less than twenty-five (25) percent of the Bank's total equity capital and reserves for each individual concentration. In addition, the Bank shall not make new extensions of credit to any borrower or associated entities which will equal twenty-five (25) percent or more of the Bank's total equity capital and reserves."

ESTABLISH/MAINTAIN ALLOWANCE FOR LOAN/LEASE LOSSES

"Within thirty (30) days from the effective date of this Order, the Board shall review the appropriateness of the ALLL and establish a comprehensive policy for determining an appropriate level of the ALLL and for documenting its analysis according to the standards set forth in the July 25, 2001, Interagency Policy Statement on Allowance for Loan and Lease Losses Methodologies and Documentation for Banks and Savings Associations. For the purpose of this determination, an appropriate ALLL shall be determined after the charge-off of all loans or other items classified "Loss." The policy shall provide for a review of the ALLL at least once each calendar quarter. Said review should be completed at least ten (10) days prior to the end of each quarter, in order that the findings of the Board with respect to the ALLL may be properly reported in the quarterly Reports of Condition and Income. The review should focus on the results of the Bank's internal loan review, loan and lease loss experience, trends of delinquent and non-accrual loans, an estimate of potential loss exposure of significant credits, concentrations of credit, and present and prospective economic conditions. A deficiency in the ALLL shall be remedied in the calendar quarter it is discovered, prior to submitting the Report of Condition, by a charge to current operating earnings. The minutes of the Board meeting at which such review is undertaken shall indicate the results of the review. The Bank's policy for determining the adequacy of the Bank's ALLL and its implementation shall be satisfactory to the Supervisory Authorities as determined at subsequent examinations and/or visitations."

Example 2: FRB Written Agreement with Century Bank of Florida

Full report available at: <http://www.federalreserve.gov/newsevents/press/enforcement/enf20090917a1.pdf>

“WHEREAS, in recognition of their common goal to maintain the financial soundness of Century Bank of Florida, Tampa, Florida (the “Bank”), a state chartered bank that is a member of the Federal Reserve System, the Bank, the Federal Reserve Bank of Atlanta (the “Reserve Bank”), and the State of Florida Office of Financial Regulation (the “OFR”) have mutually agreed to enter into this Written Agreement (the “Agreement”); and

WHEREAS, on August 25, 2009, the board of directors of the Bank, at a duly constituted meeting, adopted a resolution authorizing and directing Jose Vivero to enter into this Agreement on behalf of the Bank, and consenting to compliance with each and every provision of this Agreement by the Bank and its institution-affiliated parties, as defined in Section 3(u) of the Federal Deposit Insurance Act, as amended (the “FDI Act”) (12 U.S.C. § 1813(u)), and Section 655.005(1)(i), Florida Statutes.

NOW, THEREFORE, the Bank, the Reserve Bank, and the OFR agree as follows:”

Board Oversight

“Within 60 days of this Agreement, the board of directors of the Bank shall submit to the Reserve Bank and the OFR a written plan to strengthen board oversight of the management and operations of the Bank. The plan shall, at a minimum, address, consider, and include:

- (a) The actions that the board of directors will take to improve the Bank’s condition and maintain effective control over and supervision of the Bank’s senior management and major operations and activities, including, but not limited to, credit risk management, loan underwriting, credit administration, the adequacy of the allowance for loan and lease losses (“ALLL”), capital, and earnings;
- (b) a description of the information and reports that will be regularly reviewed by the board of directors in its oversight of the operations and management of the Bank, including information on the Bank’s adversely classified assets, ALLL, capital, liquidity, and earnings;
- (c) the establishment of measures to ensure Bank staff’s adherence to approved policies and procedures; and
- (d) the establishment of written procedures to ensure corrective actions are promptly taken to address regulatory findings.”

Management Review

“Within 30 days of this Agreement, the board of directors of the Bank shall retain an independent consultant acceptable to the Reserve Bank and the OFR to conduct a review of all managerial and staffing needs of the Bank and the qualifications and performance of all senior Bank management and all loan officers (the “Management Review”), and to prepare a written report of findings and recommendations (the “Report”). The primary purpose of the Management Review shall be to aid in the development of a suitable management structure that is adequately staffed by qualified and trained personnel, particularly in the areas of problem loan resolution and credit risk management.”

Loan Review

“Within 60 days of this Agreement, the Bank shall submit to the Reserve Bank and the OFR an acceptable written program for the on-going review and grading of the Bank’s loan portfolio. The program shall, at a minimum, address, consider, and include:

- (a) The scope and frequency of loan review, including external loan reviews;
- (b) standards and criteria for assessing the credit quality of loans;
- (c) application of loan grading standards and criteria to the loan portfolio;
- (d) controls to ensure adherence to the revised loan review and grading standards; and
- (e) written reports to the board of directors, at least quarterly, that identify and report the status of those loans that are nonperforming or adversely graded and the prospects for full collection or strengthening of the quality of any such loans.”

Asset Improvement

“The Bank shall not, directly or indirectly, extend or renew any credit to or for the benefit of any borrower, including any related interest of the borrower, who is obligated to the Bank in any manner on any extension of credit or portion thereof that has been charged off by the Bank or classified, in whole or in part, “loss” in the report of examination of the Bank by the Reserve Bank that commenced on February 17, 2009 (the “Report of Examination”) or in any subsequent report of examination, as long as such credit remains uncollected.”

Allowance for Loan and Lease Losses

- “(a) Within 10 days of this Agreement, the Bank shall eliminate from its books, by charge-off or collection, all assets or portions of assets classified “loss” in the Report of Examination that have not been previously collected in full or charged off. Thereafter the Bank shall, within 30 days from the receipt of any federal or state report of examination, charge off all assets classified “loss” unless otherwise approved in writing by the Reserve Bank and the OFR.
- (b) Within 60 days of this Agreement, the Bank shall review and revise its allowance for ALLL methodology consistent with relevant supervisory guidance, including the Interagency Policy Statements on the Allowance for Loan and Lease Losses, dated July 2, 2001 (SR 01-17 (Sup)) and December 13, 2006 (SR 06-17), and the findings and recommendations regarding the ALLL set forth in the Report of Examination, and submit a description of the revised methodology to the Reserve Bank and the OFR. The revised ALLL methodology shall be designed to maintain an adequate ALLL and shall address, consider, and include, at a minimum, the reliability of the Bank’s loan grading system, the volume of criticized loans, concentrations of credit, the current level of past due and nonperforming loans, past loan loss experience, evaluation of probable losses in the Bank’s loan portfolio, including adversely classified loans, and the impact of market conditions on loan and collateral valuations and collectability.”

Appendix B: Sample FDIC press release of a bank failure

FDIC Approves the Assumption of all the Deposits of Douglass National Bank, Kansas City, Missouri

FOR IMMEDIATE RELEASE
January 25, 2008

Media Contact:
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The Board of Directors of the Federal Deposit Insurance Corporation (FDIC) today approved the assumption of all the deposits of Douglass National Bank, Kansas City, Missouri, by Liberty Bank and Trust Company, New Orleans, Louisiana.

Douglass National, with \$58.5 million in total assets and \$53.8 million in total deposits as of October 22, 2007, was closed today by the Office of the Comptroller of the Currency, and the FDIC was named receiver.

Depositors of Douglass National will automatically become depositors of the assuming bank. The failed bank's three offices will reopen on Monday as branches of Liberty Bank and Trust. Over the weekend, customers can access their money by writing checks, or by using their debit or ATM cards.

In addition to assuming all of the deposits of the failed bank, Liberty Bank and Trust will purchase approximately \$55.7 million of Douglass National's assets at book value, less a discount of \$6.1 million. The FDIC will retain approximately \$2.8 million in assets for later disposition.

Customers with questions about today's transaction or who would like more information about the failure of Douglass National can visit the FDIC's Web site at <http://www.fdic.gov/bank/individual/failed/Douglas.html> or call the FDIC toll-free at 1-888-206-4662.

The transaction is the least costly resolution option, and the FDIC estimates that the cost to its Deposit Insurance Fund is approximately \$5.6 million. Douglass National is the first FDIC-insured bank to fail this year, and the first in Missouri since Superior National Bank, Kansas City, was closed on April 14, 1994. Last year, three FDIC-insured institutions failed.

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Congress created the Federal Deposit Insurance Corporation in 1933 to restore public confidence in the nation's banking system. The FDIC insures deposits at the nation's 8,560 banks and savings associations and it promotes the safety and soundness of these institutions by identifying, monitoring and addressing risks to which they are exposed. The FDIC receives no federal tax dollars – insured financial institutions fund its operations.

FDIC press releases and other information are available on the Internet at www.fdic.gov, by subscription electronically (go to www.fdic.gov/about/subscriptions/index.html) and may also be obtained through the FDIC's Public Information Center (877-275-3342 or 703-562-2200). **PR-7-2008**

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Figure 1: Federal regulation of the banking sector in the United States

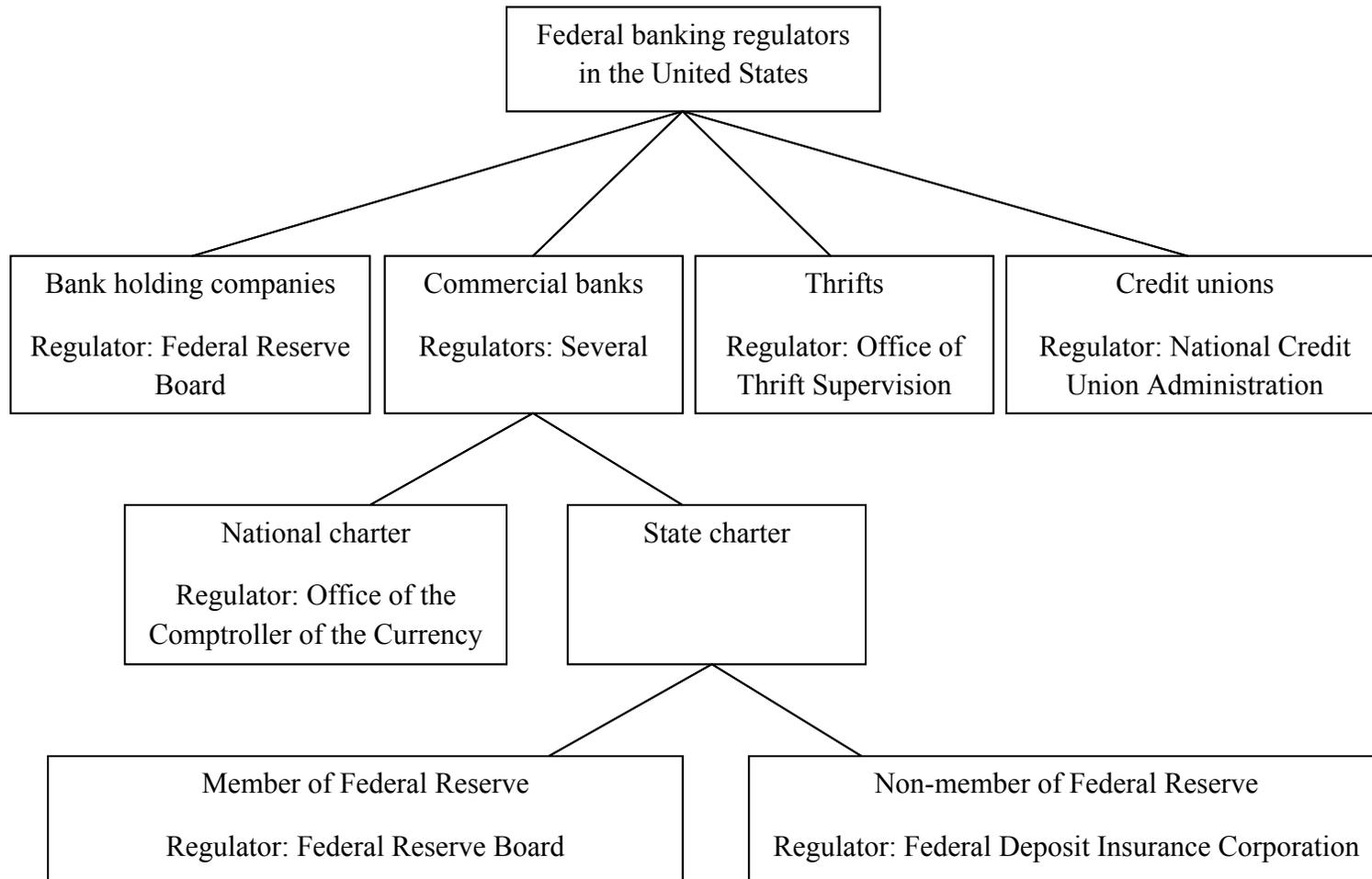


Figure 2: Connection between hypotheses

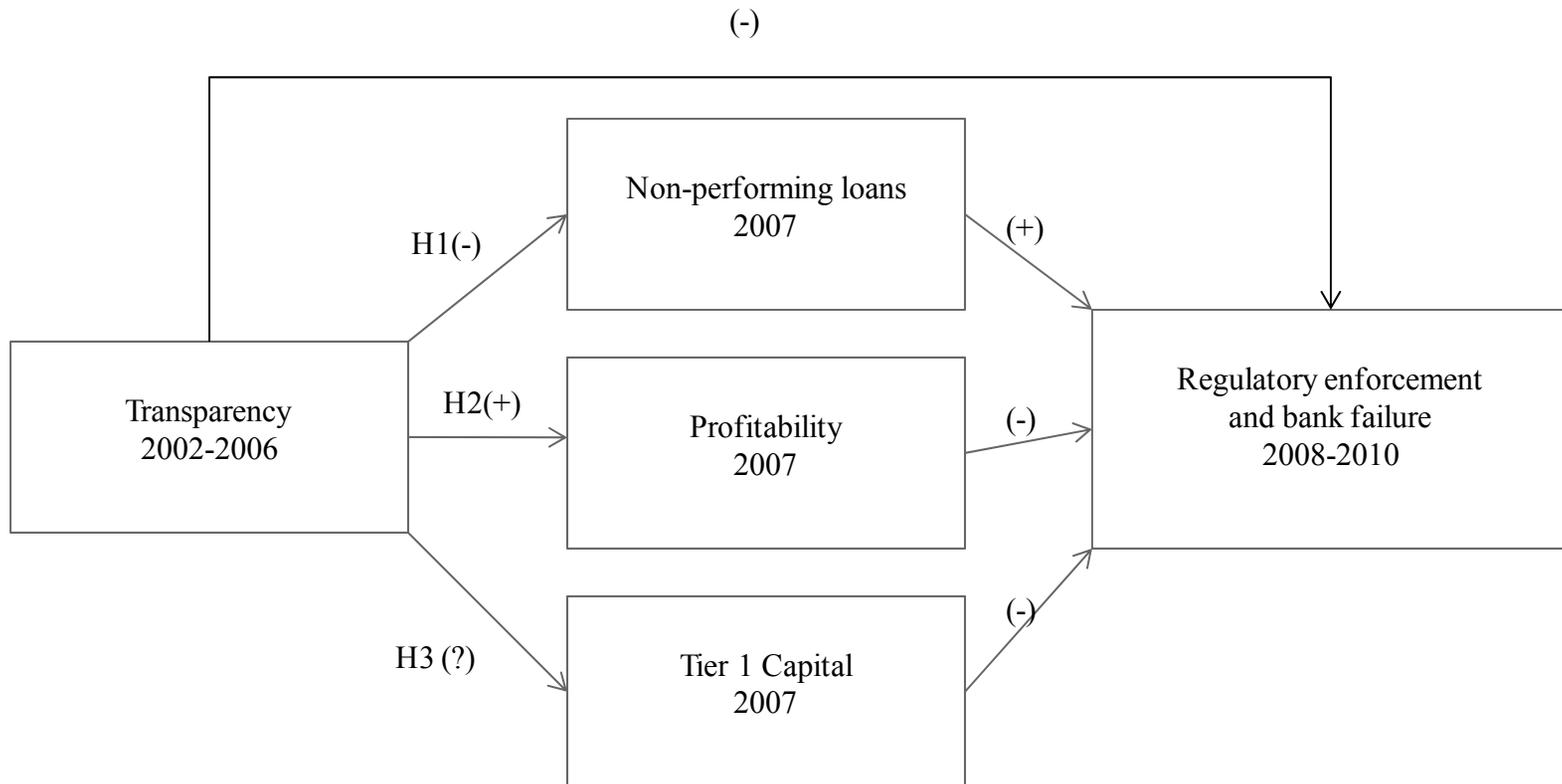


Table 1 Measuring loan loss provision quality

This table presents the results of the regressions used to estimate the loan loss provision quality measure. The sample used in the estimation consists of 38,058 bank-year observations. Panel A presents descriptive statistics for the variables used in the model of loan loss provisions. LLP_t is loan loss provisions in year t ; $BEGIN_LLR_t$ is the beginning loan loss reserves at the beginning of year t ; NCO_t , (NCO_{t+1}) are net charge-offs in years t and $t+1$, respectively; and CH_NPL_t (CH_NPL_{t+1}) are the change in non-performing loans from year $t-1$ to time t (from year t to year $t+1$). All the variables are scaled by total loans at time t and multiplied by 100 to express them as a percent of loans. All the variables have been winsorized at the 1st and 99th percentiles within the year. Panel B presents the results of the regressions that model loan loss provision for each year from 2002 to 2006. The t-statistic of each coefficient is provided in brackets below the coefficient. Significance levels are based on two-tailed tests. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Panel A Descriptive statistics

Variable	Mean	Std Dev	P25	Median	P75
LLP_t	0.336	0.509	0.068	0.205	0.408
$BEGIN_LLR_t$	1.319	0.750	0.899	1.146	1.499
NCO_t	0.247	0.482	0.012	0.096	0.277
NCO_{t+1}	0.234	0.463	0.011	0.090	0.259
CH_NPL_t	-0.035	0.877	-0.272	0.000	0.189
CH_NPL_{t+1}	0.066	0.993	-0.227	0.000	0.271

Panel B Model of loan loss provision

	LLP_t				
	2002	2003	2004	2005	2006
Intercept	0.28*** (39.85)	0.24*** (35.00)	0.22*** (36.21)	0.22*** (38.47)	0.22*** (33.99)
$BEGIN_LLR_t$	-0.13*** (-26.14)	-0.11*** (-22.79)	-0.10*** (-23.34)	-0.11*** (-25.69)	-0.11*** (-24.33)
NCO_t	0.88*** (118.00)	0.82*** (103.95)	0.73*** (86.71)	0.80*** (89.15)	0.77*** (82.82)
NCO_{t+1}	0.04*** (10.32)	0.02*** (6.46)	0.02*** (4.99)	0.03*** (8.12)	0.03*** (8.32)
CH_NPL_t	0.23*** (29.85)	0.19*** (23.11)	0.26*** (27.85)	0.19*** (21.79)	0.16*** (22.92)
CH_NPL_{t+1}	0.01*** (2.73)	0.00 (1.07)	0.02*** (4.75)	0.01*** (3.45)	0.01*** (6.55)
Observations	7,972	7,777	7,600	7,417	7,292
Adjusted R-square (%)	77.80	71.00	65.30	64.40	61.10

Table 2 Regulatory enforcement and bank failures

This table presents descriptive information about regulatory enforcement and bank failures within our sample of 6,768 banks. Panel A provides information on the distribution of bank and regulatory enforcements across the three regulators, FDIC, FED, and OCC. Panel B presents the distribution of commercial bank failures, which have been reported by the FDIC since 2001. Panel C shows the distribution of regulatory enforcements (bank failures) in 2008, 2009, and 2010 across the various states and overseas territories. The format of the set of numbers within each parenthesis is X / Y / Z, where X is the number of banks that have received at least one regulatory enforcement action between January 2008 to December 2010, Y is the number of banks that failed between January 2008 to December 2010, and Z is the number of banks.

Panel A Regulatory enforcement from 2008 to 2010

	Regulator			Total
	FDIC	FED	OCC	
Total number of banks	4,455 65.82%	856 12.65%	1,457 21.53%	6,768
Banks issued at least one enforcement order from 2008 to 2010	282 52.81%	129 24.16%	123 23.03%	534

Panel B Distribution of bank failures

Year	All commercial bank failures			Bank failures within sample of 6,768 banks		
	Bank Failures	Bank failures with FDIC cost info	Total cost (\$m)	Bank Failures	Bank failures with FDIC cost info	Total cost (\$m)
2001	3	3	4.6			
2002	10	4	361.9			
2003	3	2	135.6			
2004	3	3	14.1			
2005	0	.	.			
2006	0	.	.			
2007	2	1	3.0			
2008	20	19	4,580.5	15	14	4,160.2
2009	120	120	24,100.9	90	90	20,793.1
2010	139	139	20,243.7	108	108	18,862.8

Panel C Regional distribution of regulatory enforcement and bank failures

Region 1: Northeast: Enforce = 3.75%; Fail = 0.98%		
New England	Middle Atlantic	
Connecticut (0 / 0 / 39)	New Jersey (6 / 2 / 72)	
Maine (0 / 0 / 24)	New York (6 / 1 / 118)	
Massachusetts (3 / 1 / 154)	Pennsylvania (8 / 2 / 174)	
New Hampshire (0 / 0 / 15)		
Rhode Island (0 / 0 / 5)		
Vermont (0 / 0 / 13)		
Region 2: Midwest: Enforce = 6.41%; Fail = 2.47%		
East North Central	West North Central	
Indiana (4 / 1 / 116)	Iowa (4 / 0 / 360)	Nebraska (12 / 1 / 231)
Illinois (52 / 36 / 588)	Kansas (23 / 6 / 332)	North Dakota (1 / 0 / 92)
Michigan (19 / 7 / 135)	Minnesota (28 / 12 / 394)	South Dakota (5 / 1 / 82)
Ohio (12 / 1 / 172)	Missouri (17 / 8 / 308)	
Wisconsin (20 / 2 / 262)		
Region 3: South: Enforce = 7.43%; Fail = 3.07%		
South Atlantic	East South Central	West South Central
Delaware (3 / 0 / 21)	Alabama (8 / 3 / 128)	Arkansas (6 / 1 / 136)
District of Columbia (0 / 0 / 4)	Kentucky (11 / 0 / 175)	Louisiana (5 / 0 / 133)
Florida (45 / 23 / 185)	Mississippi (3 / 1 / 88)	Oklahoma (9 / 2 / 248)
Georgia (38 / 31 / 249)	Tennessee (10 / 0 / 154)	Texas (17 / 6 / 573)
Maryland (6 / 2 / 47)		
North Carolina (7 / 2 / 71)		
South Carolina (4 / 3 / 55)		
Virginia (7 / 0 / 82)		
West Virginia (0 / 0 / 61)		
Region 4: West: Enforce = 19.97%; Fail = 8.23%		
Mountain	Pacific	
Arizona (6 / 4 / 24)	Montana (7 / 0 / 68)	Alaska (0 / 0 / 5)
Colorado (21 / 2 / 127)	Utah (10 / 4 / 43)	California (41 / 18 / 177)
Idaho (2 / 0 / 12)	Nevada (6 / 7 / 21)	Hawaii (0 / 0 / 5)
New Mexico (6 / 1 / 46)	Wyoming (4 / 1 / 35)	Oregon (9 / 4 / 24)
		Washington (19 / 14 / 69)
Region 5: Overseas Territories: Enforce = 25.00%, Fail = 18.75%		
American Samoa (0 / 0 / 1)	Virgin Islands (0 / 0 / 2)	
Guam (0 / 0 / 2)	Federated States of Micronesia (0 / 0 / 1)	
Puerto Rico (4 / 3 / 10)		

Table 3 Descriptive statistics

This table presents descriptive statistics for the variables used in the analyses. The sample consists of 6,768 banks. *HIGH_LLPO* (*LOW_LLPO*) is an indicator variable equaling one if the firm is in the top (bottom) tercile of loan loss provision quality (*LLPO*). *NO_RESTATEMENT* is an indicator variable equaling one if the bank has no restatement from 2002 to 2006. *ENFORCE* is an indicator variable equaling one if the bank was issued at least one enforcement order in the years 2008 to 2010, and zero otherwise. *ENFORCE* is an indicator variable equaling one if the bank was issued at least one enforcement order by its regulator in the years 2008 to 2010, and zero otherwise. *FAIL* is an indicator variable equaling one if the bank was closed by the FDIC in the years 2008 to 2010, zero otherwise. The remaining variables are measured as of the end of 2007. *NPL* is the non-performing loans as a percentage of total loans. *ROA* is return on assets, expressed as a percentage. *TIER1* is tier1 capital as a percentage of total risk-weighted assets. *STD_NCO* is the standard deviation of net charge-offs for the years 2002 to 2006. *LOAN_CONCENTRATION* is the Herfindahl index of the various classes of loans, specifically, real estate loans, loans to depository institutions, agricultural loans, commercial and industrial loans, loans to individuals, and loans to foreign governments, in the bank's loan portfolio; a higher Herfindahl index indicates a greater concentration (i.e., a less diversified loan portfolio). *LOAN_REAL_ESTATE* is real estate loans as a percentage of total loans. *LOAN_TO_ASSET* is total loans as a percentage of total assets. *ASSET_RISK* is the percentage of total assets that have a 100% risk-weight. *TOTAL_ASSET* is the total assets of the bank in billions of dollars. *AUDIT_QUALITY* is an indicator variable equaling one if the bank underwent an independent audit conducted in accordance with generally accepted auditing standards by a certified public accounting firm that submits a report on the bank, zero otherwise. *LIQUIDITY* is cash as a percentage of total deposits. *UNINSURED_DEPOSIT* is uninsured assessable deposits as a percentage of total assessable deposits. *FDIC*, *FED* and *OCC* are indicator variables equaling one if a bank is supervised by the FDIC, FED, and OCC, respectively. *NORTHEAST*, *MIDWEST*, *SOUTH*, *WEST*, and *OVERSEAS* are indicator variables equaling one if the bank is located within a particular region, and zero otherwise; see Table 2 for states and territories within each region. All continuous variables have been winsorized at the 1st and 99th percentiles within 2007.

Panel A: Descriptive statistics

Variable	Mean	Std Dev	P25	Median	P75
<i>HIGH_LLPO</i>	0.333	0.471	0.000	0.000	1.000
<i>LOW_LLPO</i>	0.333	0.471	0.000	0.000	1.000
<i>NO_RESTATEMENT</i>	0.803	0.398	1.000	1.000	1.000
<i>NPL</i>	1.202	1.553	0.203	0.677	1.561
<i>ROA</i>	0.978	0.729	0.602	0.967	1.332
<i>TIER1</i>	15.319	7.281	10.550	12.925	17.250
<i>ENFORCE</i>	0.079	0.270	0.000	0.000	0.000
<i>FAILED</i>	0.031	0.175	0.000	0.000	0.000
<i>STD_NCO</i>	0.228	0.275	0.059	0.130	0.279
<i>LOAN_CONCENTRATION</i>	54.765	19.728	39.267	53.809	69.022
<i>LOAN_REAL_ESTATE</i>	68.039	19.555	56.792	71.459	82.464
<i>LOAN_TO_ASSET</i>	65.831	15.233	57.077	68.259	77.074
<i>ASSET_RISK</i>	55.793	16.848	44.201	56.937	68.222
<i>TOTAL_ASSET</i>	0.500	1.517	0.064	0.139	0.325
<i>LIQUIDITY</i>	5.344	4.625	2.904	3.992	5.922
<i>UNINSURED_DEPOSIT</i>	0.392	0.146	0.290	0.371	0.473
<i>FDIC</i>	0.658	0.474	0.000	1.000	1.000
<i>FED</i>	0.126	0.332	0.000	0.000	0.000
<i>OCC</i>	0.215	0.411	0.000	0.000	0.000
<i>NORTHEAST</i>	0.091	0.287	0.000	0.000	0.000
<i>MIDWEST</i>	0.454	0.498	0.000	0.000	1.000
<i>SOUTH</i>	0.356	0.479	0.000	0.000	1.000
<i>WEST</i>	0.097	0.296	0.000	0.000	0.000
<i>OVERSEAS</i>	0.002	0.049	0.000	0.000	0.000

Panel B: Correlation table

This panel presents Pearson correlations between the two measures of transparency, *LLPQ* and *NO_RESTATEMENT*, and the main dependent variables. All the variables are defined in Panel A. The p-values for the correlations are provided below the correlations.

	<i>HIGH_LLQ</i>	<i>LOW_LLQ</i>	<i>NO_RESTATEMENT</i>	<i>NPL</i>	<i>ROA</i>	<i>TIER1</i>	<i>ENFORCE</i>	<i>FAIL</i>
<i>HIGH_LLQ</i>	1.000	-0.500 <.0001	0.045 0.000	-0.149 <.0001	0.075 <.0001	0.007 0.592	-0.086 <.0001	-0.061 <.0001
<i>LOW_LLQ</i>	-0.500 <.0001	1.000	-0.057 <.0001	0.157 <.0001	-0.128 <.0001	0.081 <.0001	0.080 <.0001	0.043 0.000
<i>NO_RESTATEMENT</i>	0.045 0.000	-0.057 <.0001	1.000	-0.045 0.000	0.065 <.0001	-0.050 <.0001	-0.038 0.002	-0.028 0.022
<i>NPL</i>	-0.149 <.0001	0.157 <.0001	-0.045 0.000	1.000	-0.249 <.0001	-0.066 <.0001	0.265 <.0001	0.253 <.0001
<i>ROA</i>	0.075 <.0001	-0.128 <.0001	0.065 <.0001	-0.249 <.0001	1.000	0.113 <.0001	-0.144 <.0001	-0.115 <.0001
<i>TIER1</i>	0.007 0.592	0.081 <.0001	-0.050 <.0001	-0.066 <.0001	0.113 <.0001	1.000	-0.139 <.0001	-0.110 <.0001
<i>ENFORCE</i>	-0.086 <.0001	0.080 <.0001	-0.038 0.002	0.265 <.0001	-0.144 <.0001	-0.139 <.0001	1.000	0.396 <.0001
<i>FAIL</i>	-0.061 <.0001	0.043 0.000	-0.028 0.022	0.253 <.0001	-0.115 <.0001	-0.110 <.0001	0.396 <.0001	1.000

Table 4 Transparency, non-performing loans, return on assets, and tier 1 capital

This table presents the results of regressions that examine how transparency, as proxied by loan loss provision quality (*LLPQ*) and the absence of restatements (*NO_RESTATEMENT*), is associated with non-performing loan (*NPL*), return on assets (*ROA*), and tier 1 capital (*TIER1*). All the variables are defined in Table 3. The t-statistic of each coefficient is provided in brackets below the coefficient. Significance levels are based on two-tailed tests. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

	<i>NPL</i>		<i>ROA</i>		<i>TIER1</i>	
Intercept	-0.79*** (-5.67)	-0.76*** (-5.36)	0.96*** (14.58)	0.88*** (13.25)	35.71*** (70.37)	36.49*** (71.65)
<i>HIGH_LLPO</i>	-0.25*** (-5.51)		0.09*** (4.11)		0.41** (2.50)	
<i>LOW_LLPO</i>	0.29*** (6.04)		-0.21*** (-9.16)		0.16 (0.92)	
<i>NO_RESTATEMENT</i>		-0.15*** (-3.32)		0.11*** (4.99)		-0.67*** (-4.10)
<i>STD_NCO</i>	0.66*** (8.52)	1.04*** (15.37)	-0.10*** (-2.72)	-0.32*** (-9.97)	0.97*** (3.42)	0.83*** (3.38)
<i>LOAN_CONCENTRATION</i>	0.01*** (7.91)	0.01*** (7.65)	0.00** (2.35)	0.00** (2.51)	0.12*** (19.38)	0.12*** (19.47)
<i>LOAN_REAL_ESTATE</i>	0.01*** (4.75)	0.01*** (4.73)	-0.01*** (-10.76)	-0.01*** (-10.63)	-0.13*** (-20.09)	-0.13*** (-20.16)
<i>LOAN_TO_ASSET</i>	-0.01*** (-4.01)	-0.01*** (-4.86)	0.00 (1.38)	0.00** (2.33)	-0.16*** (-22.65)	-0.16*** (-22.61)
<i>ASSET_RISK</i>	0.02*** (9.82)	0.02*** (10.57)	0.00 (1.53)	0.00 (0.80)	-0.14*** (-21.69)	-0.14*** (-22.01)
<i>TOTAL_ASSET</i>	0.04*** (2.94)	0.03** (2.39)	-0.02*** (-2.74)	-0.01** (-2.10)	-0.57*** (-12.58)	-0.57*** (-12.64)
<i>LIQUIDITY</i>	-0.00 (-0.53)	-0.00 (-0.62)	0.00** (2.19)	0.00** (2.31)	0.11*** (7.17)	0.11*** (7.14)
<i>UNINSURED_DEPOSIT</i>	-0.58*** (-4.13)	-0.53*** (-3.76)	0.18*** (2.76)	0.15** (2.33)	-3.45*** (-6.77)	-3.46*** (-6.80)
<i>FED</i>	-0.17*** (-3.06)	-0.17*** (-3.02)	-0.00 (-0.16)	-0.00 (-0.13)	-0.44** (-2.19)	-0.46** (-2.28)
<i>OCC</i>	-0.06 (-1.42)	-0.06 (-1.39)	0.05** (2.16)	0.04** (2.09)	-0.33** (-2.01)	-0.30* (-1.84)
<i>MIDWEST</i>	0.44*** (6.20)	0.49*** (6.88)	0.26*** (7.82)	0.24*** (6.96)	0.24 (0.90)	0.25 (0.97)
<i>SOUTH</i>	0.37*** (5.20)	0.43*** (6.06)	0.43*** (12.78)	0.40*** (11.78)	0.33 (1.28)	0.30 (1.15)
<i>WEST</i>	0.21** (2.42)	0.30*** (3.34)	0.56*** (13.45)	0.52*** (12.37)	0.89*** (2.78)	0.86*** (2.69)
<i>OVERSEAS</i>	2.94*** (7.81)	3.00*** (7.94)	-0.09 (-0.48)	-0.10 (-0.58)	-0.73 (-0.53)	-0.96 (-0.70)
Adjusted R-square (%)	11.20	9.91	10.20	8.53	46.30	46.40

Table 5 Transparency and regulatory enforcement

This table presents the results of regressions that examine how transparency, as proxied by loan loss provision quality (*LLPQ*) and no-restatement (*NO_RESTATEMENT*), is associated with the likelihood of being issued at least one regulatory enforcement order by its regulator in the years 2008 to 2010 (*ENFORCE*). All the variables are defined in Table 3. The t-statistic of each coefficient is provided in brackets below the coefficient. Significance levels are based on two-tailed tests. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

	<i>ENFORCE</i>				
Intercept	-9.63*** (-19.25)	-9.53*** (-19.00)	-7.95*** (-12.56)	-7.86*** (-12.38)	-7.75*** (-12.09)
<i>HIGH_LLQ</i>	-0.47*** (-3.50)			-0.30** (-2.17)	
<i>LOW_LLQ</i>	0.48*** (3.98)			0.31** (2.42)	
<i>NO_RESTATEMENT</i>		-0.33*** (-2.88)			-0.25** (-2.06)
<i>NPL</i>			0.30*** (11.68)	0.30*** (11.36)	0.30*** (11.65)
<i>ROA</i>			-0.43*** (-6.33)	-0.38*** (-5.62)	-0.42*** (-6.19)
<i>TIER1</i>			-0.05*** (-3.46)	-0.06*** (-3.57)	-0.06*** (-3.52)
<i>STD_NCO</i>	0.56*** (3.09)	1.10*** (6.98)	0.70*** (3.96)	0.36* (1.83)	0.68*** (3.87)
<i>LOAN_CONCENTRATION</i>	0.01 (1.04)	0.01 (0.92)	0.00 (0.41)	0.00 (0.48)	0.00 (0.39)
<i>LOAN_REAL_ESTATE</i>	0.03*** (5.30)	0.03*** (5.31)	0.02*** (3.40)	0.02*** (3.48)	0.02*** (3.42)
<i>LOAN_TO_ASSET</i>	0.02*** (2.67)	0.01** (2.22)	0.02*** (3.09)	0.02*** (3.25)	0.02*** (3.11)
<i>ASSET_RISK</i>	0.03*** (6.63)	0.03*** (7.17)	0.02*** (3.96)	0.02*** (3.77)	0.02*** (3.94)
<i>TOTAL_ASSET</i>	0.08*** (2.93)	0.06** (2.39)	0.03 (1.08)	0.04 (1.38)	0.03 (1.00)
<i>LIQUIDITY</i>	-0.01 (-0.67)	-0.01 (-0.73)	0.00 (0.07)	0.00 (0.14)	0.00 (0.08)
<i>UNINSURED_DEPOSIT</i>	0.62* (1.71)	0.66* (1.81)	0.94** (2.47)	0.87** (2.27)	0.94** (2.46)
<i>FED</i>	0.95*** (7.57)	0.94*** (7.55)	1.07*** (8.17)	1.07*** (8.15)	1.06*** (8.11)
<i>OCC</i>	0.61*** (5.09)	0.63*** (5.28)	0.68*** (5.36)	0.68*** (5.32)	0.69*** (5.40)
<i>MIDWEST</i>	0.63*** (2.64)	0.77*** (3.23)	0.62** (2.51)	0.55** (2.21)	0.63** (2.57)
<i>SOUTH</i>	0.52** (2.18)	0.65*** (2.75)	0.58** (2.37)	0.50** (2.04)	0.58** (2.36)
<i>WEST</i>	1.21*** (4.78)	1.37*** (5.41)	1.56*** (5.94)	1.46*** (5.54)	1.56*** (5.97)
<i>OVERSEAS</i>	2.54*** (3.82)	2.71*** (4.11)	1.46** (1.99)	1.35* (1.84)	1.39* (1.89)
Pseudo R-square (%)	17.05	16.03	23.20	23.65	23.31

Table 6 Transparency and bank failure

This table presents the results of regressions that examine how transparency, as proxied by loan loss provision quality (*LLPQ*) and no-restatement (*NO_RESTATEMENT*), is associated with the likelihood of bank closure by the FDIC in the years 2008 to 2010 (*FAIL*). All the variables are defined in Table 3. The t-statistic of each coefficient is provided in brackets below the coefficient. Significance levels are based on two-tailed tests. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

	<i>FAIL</i>				
Intercept	-11.61*** (-13.36)	-11.60*** (-13.26)	-8.54*** (-7.77)	-8.39*** (-7.63)	-8.31*** (-7.49)
<i>HIGH_LLPO</i>	-0.61*** (-2.91)			-0.38* (-1.77)	
<i>LOW_LLPO</i>	0.34* (1.91)			0.13 (0.68)	
<i>NO_RESTATEMENT</i>		-0.33* (-1.88)			-0.24 (-1.32)
<i>NPL</i>			0.34*** (9.53)	0.33*** (9.32)	0.34*** (9.53)
<i>ROA</i>			-0.34*** (-3.39)	-0.30*** (-2.95)	-0.33*** (-3.30)
<i>TIER1</i>			-0.13*** (-3.81)	-0.13*** (-3.87)	-0.13*** (-3.85)
<i>STD_NCO</i>	0.31 (1.06)	0.77*** (3.08)	0.32 (1.12)	0.10 (0.32)	0.30 (1.05)
<i>LOAN_CONCENTRATION</i>	0.02*** (2.91)	0.02*** (2.81)	0.02** (2.32)	0.02** (2.35)	0.02** (2.28)
<i>LOAN_REAL_ESTATE</i>	0.03*** (3.48)	0.03*** (3.48)	0.02* (1.85)	0.02* (1.89)	0.02* (1.86)
<i>LOAN_TO_ASSET</i>	-0.01 (-0.69)	-0.01 (-0.98)	-0.01 (-0.69)	-0.01 (-0.62)	-0.01 (-0.67)
<i>ASSET_RISK</i>	0.06*** (7.14)	0.06*** (7.53)	0.04*** (4.94)	0.04*** (4.83)	0.04*** (4.92)
<i>TOTAL_ASSET</i>	0.08* (1.92)	0.06 (1.54)	0.01 (0.26)	0.02 (0.44)	0.01 (0.21)
<i>LIQUIDITY</i>	-0.15*** (-3.91)	-0.15*** (-4.00)	-0.14*** (-3.55)	-0.13*** (-3.45)	-0.14*** (-3.57)
<i>UNINSURED_DEPOSIT</i>	1.00* (1.85)	0.98* (1.83)	1.48** (2.57)	1.43** (2.48)	1.46** (2.54)
<i>FED</i>	0.08 (0.35)	0.08 (0.34)	0.12 (0.50)	0.11 (0.47)	0.10 (0.43)
<i>OCC</i>	0.34* (1.81)	0.38** (2.01)	0.36* (1.78)	0.34* (1.70)	0.35* (1.78)
<i>MIDWEST</i>	1.21*** (2.72)	1.38*** (3.08)	1.12** (2.43)	1.05** (2.28)	1.12** (2.45)
<i>SOUTH</i>	1.00** (2.26)	1.16*** (2.63)	0.87* (1.92)	0.81* (1.77)	0.87* (1.92)
<i>WEST</i>	1.39*** (3.03)	1.57*** (3.43)	1.70*** (3.58)	1.60*** (3.36)	1.70*** (3.59)
<i>OVERSEAS</i>	3.80*** (4.47)	4.02*** (4.75)	2.55*** (2.79)	2.41*** (2.63)	2.46*** (2.68)
Pseudo R-square (%)	22.66	21.80	30.82	31.09	30.90

Table 7 Transparency and the effectiveness of regulatory enforcement

This table presents the results of regressions that examine how transparency, as proxied by loan loss provision quality (*LLPQ*) and no-restatement (*NO_RESTATEMENT*), is associated with the likelihood of bank closure by the FDIC in the years 2008 to 2010 (*FAIL*), conditional on regulatory enforcement actions. The sample consists of the 534 banks that were subject to enforcement actions from 2008 to 2010. All the variables are defined in Table 3. The t-statistic of each coefficient is provided in brackets below the coefficient. Significance levels are based on two-tailed tests. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

	<i>FAIL</i>				
Intercept	-3.16** (-2.51)	-3.36*** (-2.70)	-2.38 (-1.54)	-1.93 (-1.23)	-2.16 (-1.39)
<i>HIGH_LLPO</i>	-0.70** (-2.24)			-0.61* (-1.91)	
<i>LOW_LLPO</i>	-0.09 (-0.35)			-0.16 (-0.63)	
<i>NO_RESTATEMENT</i>		-0.31 (-1.32)			-0.24 (-0.98)
<i>NPL</i>			0.12** (2.46)	0.11** (2.31)	0.12** (2.44)
<i>ROA</i>			-0.24* (-1.86)	-0.23* (-1.74)	-0.23* (-1.77)
<i>TIER1</i>			-0.06 (-1.30)	-0.06 (-1.34)	-0.06 (-1.32)
<i>STD_NCO</i>	-0.61 (-1.40)	-0.48 (-1.20)	-0.56 (-1.33)	-0.65 (-1.42)	-0.59 (-1.40)
<i>LOAN_CONCENTRATION</i>	0.02* (1.90)	0.02* (1.87)	0.03** (2.22)	0.03** (2.17)	0.03** (2.22)
<i>LOAN_REAL_ESTATE</i>	-0.00 (-0.26)	-0.00 (-0.17)	-0.01 (-0.94)	-0.01 (-0.96)	-0.01 (-0.97)
<i>LOAN_TO_ASSET</i>	-0.02 (-1.57)	-0.02 (-1.53)	-0.02 (-1.55)	-0.02 (-1.60)	-0.02 (-1.54)
<i>ASSET_RISK</i>	0.04*** (3.47)	0.04*** (3.59)	0.04*** (3.01)	0.04*** (2.96)	0.04*** (3.02)
<i>TOTAL_ASSET</i>	0.03 (0.50)	0.03 (0.45)	0.02 (0.33)	0.02 (0.33)	0.02 (0.29)
<i>LIQUIDITY</i>	-0.10** (-2.38)	-0.10** (-2.33)	-0.11** (-2.43)	-0.11** (-2.41)	-0.11** (-2.41)
<i>UNINSURED_DEPOSIT</i>	1.23 (1.61)	1.40* (1.86)	1.43* (1.84)	1.28 (1.63)	1.44* (1.85)
<i>FED</i>	-0.56** (-2.06)	-0.58** (-2.14)	-0.48* (-1.72)	-0.49* (-1.75)	-0.49* (-1.78)
<i>OCC</i>	-0.31 (-1.13)	-0.29 (-1.06)	-0.16 (-0.58)	-0.19 (-0.68)	-0.17 (-0.62)
<i>MIDWEST</i>	0.16 (0.28)	0.20 (0.35)	0.25 (0.43)	0.21 (0.36)	0.23 (0.39)
<i>SOUTH</i>	0.01 (0.02)	0.02 (0.03)	0.16 (0.28)	0.15 (0.26)	0.15 (0.25)
<i>WEST</i>	-0.08 (-0.14)	-0.10 (-0.17)	0.24 (0.40)	0.23 (0.38)	0.22 (0.36)
<i>OVERSEAS</i>	2.36* (1.67)	2.50* (1.74)	2.01 (1.43)	1.82 (1.29)	1.92 (1.35)
Pseudo R-square (%)	10.40	9.78	12.50	13.11	12.65