

THE FINANCIAL CRISIS:
DID CORPORATE GOVERNANCE AFFECT THE PERFORMANCE
OF PUBLICLY-TRADED U.S. BANK HOLDING COMPANIES?

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Abstract

In this paper, we look at the performance of publicly-traded U.S. banks before and during the financial crisis. Obviously, bank performance decreased dramatically during the financial crisis. This decrease occurred for all size banks. However, the biggest banks saw the largest losses. We also explore the extent to which corporate governance in the banking industry changed during the financial crisis and how corporate governance measures related to the performance of banks during the period of the crisis. We find that corporate governance, particularly CEO pay-for-performance sensitivity (PPS) and insider ownership, weakened significantly just before and during the financial crisis. Most interesting, we find that corporate governance variables had a significant impact on 2008 market returns for the largest banks and not as much for smaller banks, e.g., those banks with the strongest corporate governance controls performed best. However, just prior to the start of the financial crisis, some banks, particularly larger banks, weakened their corporate governance controls (i.e., PPS and insider ownership) in place which led to more severe drops in market returns. At a time when corporate governance would have been vitally important, these banks experienced decreases in management monitoring.

JEL classification: G21, G30, G34

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The Financial Crisis: Did Corporate Governance affect the Performance of Publicly-Traded U.S. Bank Holding Companies?

I. Introduction

The U.S., and indeed the world, is in the middle of the worst financial crisis since the 1930s. In late 2008, the National Bureau of Economic Research declared that the U.S. had been in a recession since December 2007, one of the longest downturns since the Depression of the 1930s. In mid-March 2009, the Dow Jones Industrial Average had fallen in value 54 percent in less than a year and a half, larger than the decline of 1937-1938 when it fell 49 percent. Home foreclosures in the U.S. reached record highs in late 2008 and continued to increase into 2009. By mid-2009, 9.12 percent of mortgage borrowers nationwide were at least one payment past due. The U.S. unemployment rate was over 9 percent in mid-2009. Commercial banking giant Citigroup required a massive government guarantee against losses and an injection of cash to prevent failure. The investment banking industry has seen the failure or acquisition of all but two of its major firms (Goldman Sachs and Morgan Stanley) and these two firms converted to commercial bank holding companies. AIG, one of the largest insurance companies in the U.S., survived only because of a federal government bailout. The three major U.S. auto makers faced imminent danger of bankruptcy without a federal bailout and even with this Chrysler declared Chapter 11 bankruptcy in May 2009 and General Motors in June 2009.

The financial crisis hit the banking industry hard. In the last quarter of 2008, expenses associated with rising loan losses and declining asset values overwhelmed revenues, producing a net loss of \$32.1 billion, the industry's first quarterly loss since 1990. Return on assets for the quarter, -0.94 percent, was the worst since the second quarter of 1987. For the full year 2008, net income was \$10.2 billion, down 89.8 percent from 2007. Return on assets for 2008 was 0.08 percent, the lowest since 1987. Further, 23.6 percent of the industry experienced negative profit in 2008 and 62.8 percent reported lower full-year earnings than in 2007. A total of 25 banks failed in all of 2008 versus 3 in 2007.¹ By August 2009, the Federal Deposit Insurance Corporation (FDIC) reported that the list of troubled banks had climbed to over 400 banks, the highest level in 15 years.

Corporate governance variables have been shown in many contexts to affect firm performance and behavior. Such variables include CEO pay-for-performance sensitivity, director and executive officer stock ownership, and board of director characteristics (e.g., board composition, number of meetings per year). Research on the role of the board of directors in the modern corporation has focused on board effectiveness in monitoring management (Fama and Jensen (1983 a, b)). Specifically, corporate governance mechanisms have been

¹ As of August 2009, another 81 banks had failed and been closed by the FDIC.

found to limit managerial discretion and mitigate manager-shareholder conflict. For example, Cornett, Marcus, and Tehranian (2008) and Klein (2002) show that board characteristics (such as audit committee independence) predict lower magnitudes of discretionary accruals. Warfield, Wild, and Wild (1995) find that a high level of managerial ownership is positively related to the explanatory power of reported earnings for stock returns. If corporate governance mechanisms work as intended, those banks with strong corporate governance measures in place should be the ones that performed best through the financial crisis.

In this paper, we look at the performance of publicly-traded U.S. banks before and during the financial crisis. We find that banks were doing well before the financial crisis, from 2003 through 2006. Profit was high as loans and off-balance-sheet (OBS) items offered solid returns. However, bank performance decreased dramatically during the financial crisis and the biggest banks saw the largest losses. Loan losses increased as the financial crisis took hold in 2007 and 2008. While banks tried to cut expenses as the crisis wore on, losses continued to grow and performance deteriorated. This decrease occurred for all size banks, but the largest banks saw the most significant losses. Further, off-balance-sheet business, especially in the derivatives area, slowed significantly. All size groups saw a significant drop in total off-balance-sheet securities to total assets during the financial crisis. However, because the largest banks held so many more of these OBS securities, the drop in their holdings had a significantly bigger impact on the performance of these largest banks.

We also explore the extent to which corporate governance in the banking industry changed during the financial crisis and how corporate governance measures related to the performance of banks during the period of the crisis. We find that corporate governance weakened significantly just before and during the financial crisis. CEO pay-for-performance sensitivity, board (and particularly insider and affiliated outsider) stock ownership, and board independence decreased. Boards failed to meet more frequently. CEOs continued to serve in the dual role as board chair, nominating committees remained friendly to the CEO, and the incident of CEO golden parachutes increased. Most interesting, we find that corporate governance variables had a significant impact on 2008 market returns for the largest banks and not as much for smaller banks, i.e., those banks with the strongest corporate governance controls performed best. However, just prior to the start of the financial crisis, some banks, particularly the larger banks, weakened their corporate governance controls (i.e., PPS and insider ownership) in place which led to more severe drops in market returns. At a time when corporate governance would have been vitally important, these banks saw decreases in management monitoring. It tended to be these large banks that were initially bailed out by the U.S. government through the Troubled Asset Relief

Program (TARP).² While the smaller banks also reduced their corporate governance controls, the reductions were not as large and the consequences to market returns and to the U.S. taxpayer were not as severe.

The remainder of the paper is organized as follows. Section II describes the data and methodology. Section III presents empirical results and Section IV describes additional regression analysis. Finally, Section V concludes the paper.

II. Data and Methodology

II.1. Sample Selection

The sample examined in this study includes all publicly-traded bank holding companies (BHCs) (with available information) headquartered in the United States and operating during the 2003 through 2008 period.³ Table I lists the distribution of the sample banks by year and by total assets at the end of each year. The first four years in the sample period (2003 - 2006) were years in which the U.S. economy was not recessionary, while the last two years (2007 and 2008) are years in which the U.S. economy faced a severe financial crisis. Following Federal Deposit Insurance Corporation (FDIC) and Federal Reserve guidelines, we classify banks into one of five size groups based on year-end book value of assets: i) greater than \$10 billion; ii) between \$3 billion and \$10 billion; iii) between \$1 billion and \$3 billion; iv) between \$500 million and \$1 billion; and v) less than \$500 million. Asset sizes of the BHCs as well as all accounting data used throughout the study are obtained from Federal Financial Institutions Examination Council (FFIEC) Call Reports (FFIEC 031 and 041) found on the Chicago Federal Reserve's web-site. Data are summed at the holding company level. That is, based on the highest holding company number of the bank, we collect and combine data for all banks with the same highest holding company number.⁴ Thus, when we refer to bank performance, we treat bank holding companies as if they have only one bank, by combining their subsidiaries into one (consolidated) statement.⁵ We begin our analysis with a total of 2,207 bank years.⁶

III.2. Market-based Performance Measures

We examine stock price performance for the banks before and during the financial crisis. Specifically, we compute buy-and-hold abnormal returns for the sample banks each year during the period 2003 - 2008. The buy-and-hold

² On October 28, 2008, eight of the largest U.S. financial institutions received the initial allotment of \$115 billion in TARP funds through the Capital Purchase Program (CPP). The 2008 year-end average total assets of these firms was \$837.6 billion. Through July 24, 2009, 657 financial institutions have received \$204.3 billion through the CPP.

³ We use the Center for Research in Securities Prices-Federal Reserve Bank (CRSP-FRB) link found at the New York Federal Reserve's website, www.newyorkfed.org, to identify publicly traded banks and bank holding companies that have information available through CRSP.

⁴ We note that data are not adjusted for intra-company transactions.

⁵ Consequently, we mean bank holding company whenever we refer to bank or bank holding company.

⁶ The aforementioned CRSP-FRB link nets 2,358 firm-year observations. We remove 130 observations where proxy statements are not available, ten observations where banks have split classes of stock that vote separately for split boards of directors, eight observations where proxy statements do not report complete stock option grant information, and three observations where fiscal year-end changes result in proxy statements that report activity for only a six month period.

abnormal return is estimated in a manner used in Spiess and Affleck-Graves (1995), and Safieddine and Titman (1999), and Cornett et al. (2006) and is similar to variations explored in Barber and Lyon (1997) and Kothari and Warner (1997). Specifically, the percentage buy-and-hold abnormal return is calculated for bank i over the twelve calendar months as:

$$\text{BHAR}_i = \left[\prod_{t=1}^{12} (1 + R_{i,t}) - \prod_{t=1}^{12} (1 + R_{\text{benchmark},t}) \right] \quad (1)$$

where $t = 1$ is January, $t = 12$ is December, $R_{i,t}$ is the monthly return for the bank i in month t , and $R_{\text{benchmark},t}$ is the return on a benchmark portfolio for bank i . The benchmark portfolio consists of CRSP-listed stocks in the same size quintile, the same book-to-market quintile, and the same momentum quintile (stock return performance over the previous year).⁷

II.3. Accounting-based Performance Measures

The accounting-based measures we use to test for changes in operating performance before and during the financial crisis are those in Cornett, McNutt, and Tehranian (2006) and Cornett, Mehran, and Tehranian (1998). Cornett, McNutt, and Tehranian look at merger-related operating performance in commercial banks. Cornett, Mehran, and Tehranian look at performance around voluntary versus involuntary equity issuances by commercial banks. We collect data for the sample banks both before and during the financial crisis. A comparison of the financial crisis values with the pre-crisis benchmark allows us to measure the impact of the financial crisis on the performance of the banks.

Following Cornett, McNutt, and Tehranian (2006), we evaluate eight common bank performance indicators:

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|---|---|
| 1) <i>Profitability Indicators</i> | Measure overall performance |
| 2) <i>Capital Adequacy Indicators</i> | Measure the bank's ability to meet regulated capital standards and still attract loans and deposits |
| 3) <i>Asset Quality Indicators</i> | Measure changes in the bank's loan quality |
| 4) <i>Operating Efficiency Indicators</i> | Measure the bank's ability to generate revenue, pay expenses, and measure employee productivity |
| 5) <i>Loan Composition Indicators</i> | Measure changes in the composition of and return on the bank's loan portfolio |
| 6) <i>Non-interest Income Indicators</i> | Measure changes in income generated from other than |

⁷ We follow the procedure of Daniel, et al. (1997) and Cornett et al. (2006) in constructing 125 reference portfolios based on size, book-to-market ratio, and momentum characteristics. Our reference portfolios include all firms listed on the NYSE, AMEX, and Nasdaq exchanges from 2003 through 2008 provided that the following three requirements are met: (1) COMPUSTAT data are available for the firm at least two years prior to the inclusion of the firm into the portfolio; (2) the firm has market value data available on the CRSP data tapes at the end of December and the end of June preceding the inclusion; and (3) in the twelve months prior to the inclusion, at least six monthly returns are available on the CRSP data tapes. The exact process works as follows. First, all NYSE firms are sorted into quintiles according to their market equity value, calculated for the last day of June from 1990 to 2000, AMEX and Nasdaq firms are then put into quintiles according to their size. Within each quintile we further sort firms into five portfolios according to their book-to-market ratios. Finally, for each size and book-to-market sorted portfolio, we sort the firms into quintiles according to their preceding twelve-month return. This process gives us a total of 125 portfolios. Once we form the 125 benchmark portfolios, we match each of our sample bank stocks to a benchmark portfolio according to its size, book-to-market ratio, and momentum rank. We are able to identify a benchmark portfolio for each of our sample banks.

	lending activities at the bank
7) <i>Off-Balance-Sheet Indicators</i>	Measure changes in the bank's off-balance-sheet activities ⁸
8) <i>Liquidity Risk Indicators</i>	Measure changes in the bank's cash position
9) <i>Growth Indicators</i>	Measure the bank's change in assets and deposits

The specific measures used to represent these factors are defined in Panel A of Table II. The values used to calculate the performance measures are year-end figures as reported in the FFIEC Report of Income and Report of Condition data files available at the Federal Reserve Bank of Chicago website. We examine these nine indicators of bank performance in an attempt to identify specific areas within the sample banks that might drive any differences in performance before and during the financial crisis. The appendix to the paper lists descriptive statistics for the overall sample of 2,207 observations.

There is collinearity between some of the specific ratios representing the different factors (e.g., loans to equity and loans to assets). Therefore, changes in the various areas of performance, reported in the next section, may be a result of common elements. Differences in pre-crisis and crisis performance of the sample banks are tested using the t-statistic,

$$t = \left(\frac{\sum_{i=1}^N (d_{crisis} - d_{pre-crisis}) / N \right) / (\sigma / \sqrt{N}), \quad (2)$$

where d_{crisis} reflects the performance of the banks in 2007 and 2008, $d_{pre-crisis}$ measures the pre-crisis performance of the banks, σ is the standard deviation of the distribution of the change in performance of the banks, and N is the numbers of banks in the sample.

II.4. Corporate Governance Data

Having defined the performance measures, we next look at corporate governance variables that could influence the performance measures. Panel B of Table II lists and defines corporate governance variables used in the paper. The focus of this study is not only to identify the performance of banks before and during the financial crisis, but also to identify governance mechanisms that purportedly align executive decisions with shareholder interests such that bank value, and thus shareholder wealth, is maximized. As the board of directors represents the shareholders, we examine board characteristics to identify important corporate governance mechanisms. Boards of director data are obtained from BHC proxy statements available the Security and Exchange Commission's (SEC's) website, <http://idea.sec.gov>. We use proxy statements for each year to obtain board stock ownership and composition (i.e., the number of insiders, affiliated

⁸ This does not include Special Investment Vehicles (SIV) or Special Purpose Vehicles (SPV). SIVs and SPVs are separate entities structured as operating companies that invest in assets that are designed to generate higher returns than the cost of funds.

outsiders, and unaffiliated outsiders on the board), board size, number of board meetings per year, CEO/chair duality, composition of the nominating committee, and golden parachute information. ExecuComp includes only a fraction of the banks in our study. Thus, CEO stock and options ownership and compensation data was collected by hand from proxy statements—including the detailed options information necessary to replicate ExecuComp’s Black-Scholes value calculations. This replication process requires detailed options information from proxy statements as well as information from COMPUSTAT (to get dividend yields), CRSP (to get data to calculate stock price volatility), and the U.S. Treasury website, www.ustreas.gov, (to get the risk free rate). The appendix to the paper lists descriptive statistics on the corporate governance measures for the overall sample of 2,207 observations.

II.3.a. CEO Pay-for-Performance Sensitivity

A natural measure of the sensitivity of CEO wealth to firm performance would compare the value of option grants to other compensation. Indeed, option grants have been used as a proxy for incentives to manage earnings in several studies (see for example, Bergstresser and Philippon (2006), Cheng and Warfield (2005), Cohen et al. (2005)). Because option grants are skewed, however, the ratio of option holdings to other compensation could contain extreme outliers. As in Mehran (1995), we re-scale this variable by computing the ratio of (Black-Scholes value) option grants to the sum of these holdings plus other compensation. This ratio of top executive officer pay-for-performance (PPS) is similar to Bergstresser and Philippon’s (2006) measure of incentive to manage firm performance and is constrained to lie between 0 and 1. The higher the PPS, the more sensitive is management’s pay to the performance of the firm. As reported in the appendix to the paper, the PPS for our sample averages 0.151, ranging from 0.000 to 1.000.

II.3.b. Board of Director Stock Ownership

Several studies argue that stock ownership by board members gives them an incentive to monitor managers carefully and thus helps resolve agency conflicts between directors and shareholders (see Brickley et al. (1988) and Brown and Maloney (1999)). When board members own stock they are more likely to monitor managers, directing them to improve the performance of the firm and, consequently, board members’ personal wealth.

Members of the boards of directors are divided into three categories: inside directors, affiliated directors, and unaffiliated directors. Inside directors are defined as directors who are BHC or bank executives and any director who was an executive officer of the bank and who is currently serving as chairman of the board of directors.

Affiliated directors are those directors who have relationships with the bank listed in the proxy statement beyond

loans made in the normal course of business.⁹ Outside or unaffiliated directors are those directors who have no discernable association with the bank other than the directorship.¹⁰ As reported in the appendix, insiders on the boards of directors in the sample banks own an average of 7.06 percent of the bank's stock, the minimum value is 0.01 percent, and the maximum is 90.30 percent.¹¹ Further, the top 5 insiders on the boards of directors own an average of 6.30 percent of the bank's stock, the minimum value is 0.01 percent, and the maximum is 73.79 percent.¹² Affiliated insiders own an average of 1.72 percent of the bank's stock, the minimum value is 0.00 percent, and the maximum is 76.19 percent. Unaffiliated directors own an average of 1.78 percent of the bank's stock, the minimum value is 0.000 percent, and the maximum is 54.30 percent.

II.3.c. Board of Director Independence

There is considerable literature on the impact of the composition of the board of directors, specifically, inside versus outside directors, on firm performance. Boards dominated by outsiders are arguably in a better position to monitor and control managers. Outside directors are likely to be more independent of the firm's managers and to bring a greater breadth of experience to the firm. A number of studies link the proportion of outside directors to financial performance and shareholder wealth (Cornett et al. (2008), Byrd and Hickman (1992), and Rosenstein and Wyatt (1990)). These studies consistently find better stock returns and operating performance when outside directors hold a significant percentage of board seats.

Members of the boards of directors are again divided into three categories: inside directors, affiliated directors, and unaffiliated directors. Using these categories, we calculate the percent of inside directors, affiliated directors, and unaffiliated directors on the board, respectively. The appendix to the paper reports that the average percentage of inside directors is 16.65, the minimum is 0.00 percent, and the maximum is 75.00 percent. The average percentage of affiliated board members is 17.56, the minimum is 0.00, and the maximum is 91.67. The average percentage of unaffiliated board members is 65.78, the minimum is 0.00, and the maximum is 100.00. While inside and affiliated board members are expected to be more easily influenced by the CEO than outside board members, the average board is clearly dominated by outsiders. If, as previous research has shown, outside directors on the board

⁹ Examples of relationships include former bank executives, lawyers who perform legal services for the bank, property owners who lease property to the bank, directors with family relationships to insiders, and instances where the bank CEO sits on the board of directors of a company run by a bank director.

¹⁰ Independent outside directors are directors listed in proxy statements as managers in an unaffiliated non-financial firm, managers of an unaffiliated bank or insurance company, retired managers of another company, lawyers unaffiliated with the firm, and academics unaffiliated with the firm.

¹¹ Reported ownership for each group includes ownership by related non-director blockholders.

¹² Since the passage of the Sarbanes-Oxley Act in 2002, multiple insiders are rare on the board of directors. Thus, we collect stock ownership data for the top five executives, in addition to just those insiders that are on the board.

enhance monitoring, they would also be associated with better performance throughout the financial crisis.

Board size is the total number of directors on the board. For the sample banks, the mean board size is 11.38, the minimum is 3, and the maximum is 31. All else equal, larger boards are expected to be more easily dominated by CEOs and smaller boards are expected to have a constraining effect on executive behavior. We follow Brick et al. (2006) and combine board composition and board size into a composite measure of board independence. That is, our specification of board independence is the inverse of board size times the ratio of the number of unaffiliated directors to the number of affiliated and inside directors. Smaller boards and/or boards with more unaffiliated directors increase board independence. Thus, a higher level of board independence is associated with boards of directors that are less dominated by the CEO. The mean level of board independence is 0.268, the minimum is 0.00, and the maximum is 1.000.

III.1.3.d. Number of Board Meetings per Year

Vafeas (1999) finds that a greater level of involvement and oversight by the board of directors is characteristic of firms that are value maximizers for their owners. Specifically, he finds that a greater number of board meetings per year are associated with increased firm performance. Pertinent to this study, previous findings suggest that if frequent board meetings lead to more effective monitoring in a firm they would also be associated with better performance before and during the financial crisis. The average number of board meetings for the banks in our sample is 10.40 per year.

II.3.e. CEO/Chair Duality

In about 80 percent of U.S. companies the CEO is also the chairman of the board (Brickley et al. (1997)). CEO/chair duality concentrates power in the CEO's position, potentially allowing for more management discretion. The dual office structure also permits the CEO to effectively control information available to other board members and thus impedes effective monitoring (Jensen, 1993). Consequently, if CEO/Chair duality impedes effective monitoring, it could affect bank performance before and during the financial crisis. We define CEO/chair duality as a dummy variable equal to one if the CEO is also the board chair and zero otherwise. Of the 2,207 firm years, 1,059 CEOs are also the board chair, while 1,148 CEOs are not.

II.3.f. Friendly Nominating Committee

The primary duty of a firm's nominating committee is to lead the recruitment process for qualified members of the board of directors. Given that the nominating committee is charged with finding members of the board of directors, and that the board is charged with monitoring the firm's management, the composition (insiders

versus outsiders) of the nominating committee can affect the degree to which firm managers are monitored, and ultimately firm performance. Indeed, Shivdasani and Yermak (1999) find that when the CEO is on the nominating committee or no nominating committee exists, firms appoint fewer independent outside directors. As a result of this conflict of interest in the set up of a firm's nominating committee, the Sarbanes-Oxley Act, enacted in 2002, requires nominating committees to be "independent." Accordingly, after 2002, few firms have the CEO serving as a member of the nominating committee. However, nominating committees that are not composed entirely of independent directors can still be "friendly" to the CEO in the selection process.

We use a dummy variable equal to one if an inside or affiliated board member is a member of the nominating committee or if there is no nominating committee, and zero otherwise. We posit that when an insider or affiliated board member is on the nominating committee, which selects nominees for board positions, the board of directors is less independent and monitoring of management is less effective. As reported in the appendix, an insider or affiliated board member is on the nominating committee for 1,273 of the 2,207 firm years and is not on the nominating committee for the remaining 934 firm years.

II.3.g. Golden Parachute

Golden parachutes took center stage during the financial crisis as bank executives, fired from their failing banks, received lavish payouts through their golden parachutes. A golden parachute is an agreement between a company and an upper executive specifying that the executive will receive certain significant benefits (e.g., severance pay, cash bonuses, stock options) if employment is terminated. Proponents of golden parachutes argue that they provide value enhancing benefits for a firm. For example, golden parachutes make it easier to hire and retain executives, especially in industries like banking that are prone to mergers. Further, they allow executives to remain objective about the company during a takeover. Finally, they dissuade takeover attempts by increasing the cost of a takeover. However, critics have pointed out that executives are already well compensated and do not deserve significant payouts upon termination. Further, executives have a fiduciary responsibility to their companies, and should not need additional incentives to stay objective.

Given the nature of the golden parachutes awarded to managers of failing banks during the financial crisis, we collect information on whether each bank offers its top executive golden parachute protection in the event of termination. We define golden parachute as a dummy variable equal to one if a golden parachute exists, and zero otherwise. As reported in the appendix, golden parachutes are offered for 1,842 of the 2,207 firm years and are not

offered for the remaining 365 firm years.

III. Empirical Results

III. 1. Market-based Performance Measures

Table III first lists the average annual percentage buy-and-hold abnormal returns (BHAR) for the sample banks. Results for 2003 through 2006 are very similar. As would be expected, the biggest changes in the performance measures occur from 2006 to 2008. Thus, to make the Table III more readable, we report results for only 2003, 2006, and 2008.¹³ Panel A of Table III reports results for banks with year-end book value of total assets greater than \$10 billion; Panel B lists results for banks with asset values between \$3 billion and \$10 billion; Panel C between \$1 billion and \$3 billion; Panel D between \$500 million and \$1 billion; and Panel E less than \$500 million.

For all size groupings, the BHAR increased significantly between 2003 and 2006. For example, the mean BHAR for the largest banks (Panel A) increased from 0.42% in 2003 to 1.09% in 2006. The difference, 0.67%, is significant at the 5% level. Similarly, the mean BHAR for the smallest banks (Panel E) increased from 0.22% in 2003 to 1.01% in 2006. The difference, 0.79%, is significant at 5%. In contrast, From Table III, we also see that regardless of asset size, BHAR decreased dramatically from 2006 to 2008. However, the biggest banks saw the largest drop in BHAR. The mean BHAR for the largest banks (Panel A) decreased from 1.09% in 2006 to -4.82% in 2008. The difference, -5.91%, is significant at the 1% level. The mean BHAR for the smallest banks (Panel E) decreased from 1.01% in 2006 to -2.55% in 2008 (the difference, -3.56%, is significant at the 1% level). Thus, the financial crisis significantly reduced the market value of publicly traded banks, and particularly the largest banks.

III.2. Accounting Measures

Table III lists mean values for the accounting performance measures grouped by year and bank asset size. Profitability indicators: For all size groupings, the three profitability indicators see no significant changes from 2003 to 2006. For example, the mean ROA (ratio 1) for the largest banks (Panel A) decreased from 1.37% in 2003 to 1.29% in 2006. The difference, -0.08%, is insignificant. Similarly, the mean ROA for the smallest banks (Panel E) increased from 0.88% in 2003 to 0.97% in 2006. The difference, 0.09%, is insignificant. The mean ROE (ratio 2) for the largest banks (Panel A) increased from 15.69% in 2003 to 16.09% in 2006, while the mean ROE (ratio 1) for the smallest banks (Panel E) increased from 9.69% in 2003 to 10.35% in 2006. The differences are insignificant. Net interest margin (NIM, ratio 3) also shows an insignificant change from 2003 to 2006 across all size groups.

¹³ Results for other years are available from the authors on request.

From Table III, we also see that regardless of asset size, ROE and ROA decreased significantly from 2006 to 2008. The mean ROA for the largest banks (Panel A) decreased from 1.29% in 2006 to 0.07% in 2008. The difference, -1.22%, is significant at the 1% level. The mean ROA for the smallest banks (Panel E) decreased from 0.97% in 2006 to -0.11% in 2008 (the difference, -1.08%, is significant at the 1% level). Likewise, the mean ROE (ratio 2) for the largest banks (Panel A) decreased from 16.09% in 2006 to 0.96% in 2008, while the mean ROE for the smallest banks (Panel E) decreased from 10.35% in 2006 to -3.73% in 2008. The differences are significant at the 1% level. Thus, the financial crisis significantly reduced the profitability of publicly traded banks.

Notice that NIM did not change significantly from 2006 to 2008 for any of the bank groups. For example, the mean NIM for the largest banks decreased from 2.90% in 2006 to 2.86% in 2008. Net interest margin is calculated as interest income minus interest expense divided by total assets. To combat the effects of the financial crisis the Federal Reserve decreased interest rates dramatically throughout 2008. Thus, while banks were experiencing significant losses in interest income as loan income fell, they also saw significant drops in interest expense as rates on deposits fell along with the general level of interest rates.

Capital adequacy indicators: Table III reports an increase in the mean capital ratio (ratio 4) for banks in all size groups from 2003 to 2006. The increase is significant at the 5% level for banks with assets between \$500 million and \$1 billion (Panel D). Similarly, both the mean of loans to total capital (ratio 5) and deposits to total capital (ratio 6) decreased for virtually all banks during this period (loans to capital increased insignificantly for banks with total assets between \$1 billion and \$3 billion (Panel C) and banks with total assets between \$500 million and \$1 billion (Panel D)). Thus, as the sample banks' capital to assets increased, each dollar of capital supported a greater number of both loans and deposits in banks. The increase in equity along with the ability of each dollar of equity to support more dollars of loans and deposits may explain the improvement in bank performance. For example, an increase in loans can lead to enhanced revenues.

Surprisingly, capital ratios did not fall significantly for the three largest banks groups from 2006 to 2008. In fact, the largest banks saw an increase, albeit insignificant, in the mean capital ratio from 9.55% to 9.62% from 2006 to 2008. For these banks, while ROA and ROE decreased significantly during the financial crisis capital to assets remained healthy (at least through 2008). The smaller banks did see a significant decrease in their capital ratios: from 10.19% in 2006 to 9.70% in 2008 for banks with total assets between \$500 million and \$1 billion (significant at the 5% level) and from 9.43% in 2006 to 8.58% in 2008 for banks with total assets less than \$500 million (significant at the 1%

level). Larger banks have significant access to financial markets (i.e., stock and commercial paper). Further, the largest banks received TARP and other funds from the federal government during the financial crisis. Smaller banks did not have such an extensive source of funds. Thus, larger banks had more opportunity to maintain their capital ratios (albeit government-contributed capital) than smaller banks (limited to enterprise-contributed capital) during the financial crisis.

Asset quality indicators: Table III reports significant decreases in the mean allowance for loan losses to loans (ratio 7) and loan loss provision to loans (ratio 8) for all bank groups from 2003 to 2006. For example, the mean loan loss provision to loans (ratio 8) for the largest banks (Panel A) decreased from 0.56% in 2003 to 0.24% in 2006. The difference, -0.32%, is significant at the 5% level. Similarly, the mean loan loss provision to loans for the smallest banks (Panel E) decreased from 0.27% in 2003 to 0.19% in 2006. During this period prior to the financial crisis, loan performance was relatively strong and bad loans and losses associated with them were small. In contrast, both ratios increased significantly for all bank groups from 2006 to 2008. The mean loan loss provision to loans for the largest banks (Panel A) increased from 0.24% in 2006 to 1.75% in 2008. The difference, 1.51%, is significant at the 1% level. As the financial crisis and the recession deepened, banks recognized large losses on their loan portfolios.

Operating efficiency indicators: As reported in Table III, many of the operating efficiency measures (ratios 9 through 15) changed significantly before and during the financial crisis. Prior to the financial crisis, non-interest expenses generally dropped relative to net operating income (ratio 10) (except for banks with assets greater than \$10 billion and with assets between \$500 million and \$1 billion) and to total assets (ratio 11) (except for banks with assets between \$500 million and \$1 billion); personnel expenses to total assets fell (ratio 12) (except for banks with assets between \$500 million and \$1 billion); and total assets (ratio 14) and net income (ratio 15) to employees increased significantly for all the bank groups. Thus, in general we see that regardless of bank size, operating efficiency generally increased from 2003 to 2006.

During the financial crisis, non-interest expenses to non-interest revenue increased significantly for the largest banks (from 187.36% in 2006 to 258.47% to 2008) and decreased significantly for the other four groups as they worked to cut operating expenses to fight loan losses associated with the financial crisis. As discussed below, the result for the biggest banks is due to a drop in non-interest revenue rather than an increase in non-interest expenses. Similarly, non-interest expenses to net operating income (interest income plus non-interest income) (ratio 10) generally increased significantly or changed insignificantly (banks with assets between \$1 billion and \$3 billion decreased significantly) from 2006 to 2008. Yet, personnel expenses to total assets (ratio 12) decreased for all but the smallest banks. For

example, the mean non-interest expenses to net operating income for the largest banks (Panel A) increased from 57.48% in 2006 to 68.62% in 2008, while the mean personnel expenses to total assets decreased from 1.45% in 2006 to 1.30% in 2008. Thus, banks cut operating expenses as operating income fell during the financial crisis.

Loan composition indicators: Loan composition indicators (ratios 16 through 25) allow us to look specifically at loan activity before and after the financial crisis. As reported in Table III, for all size groups, from 2003 to 2006 loans (and particularly real estate loans) increased as a percent of total assets (ratios 23 through 25) and returns on these loans increased significantly (ratios 16 through 19). Both of these trends reversed from 2006 through 2008. For example, the mean real estate loans to total assets for the largest banks (Panel A) increased from 35.52% in 2003 to 40.39% in 2006, then decreased to 36.61% by 2008. The mean return on these real estate loans increased from 5.14% in 2003 to 6.46% in 2006, then dropped to 5.48% in 2008. During the financial crisis, banks stopped giving out as many loans and returns on loans fell (see also ratios 7 and 8 above).

Non-interest income and off-balance-sheet indicators: Similar to loan composition indicators, non-interest income and off-balance-sheet (OBS) indicators allow us to examine revenue enhancement (other than through loans) opportunities. As reported in Table III, non-interest income items generally increased for all size groups between 2003 and 2006 and then decreased by 2008. For example, the mean other non-interest income to total assets for the largest banks (ratio 29 in Panel A) increased from 1.46% in 2003 to 2.67% in 2006, then decreased to 0.87% by 2008. Other non-interest income includes income on trading of both balance sheet securities and off-balance-sheet derivative securities (including mortgage-backed securities that were at the center of the financial market collapse). Thus, not only did interest income decrease during the financial crisis, so did non-interest income.

Note that the drop in non-interest income was particularly large for the largest banks (Panel A). This is attributed to the fact that it is the largest banks that participate most heavily in the loan commitment and derivative securities markets and business. Ratio 30 in Table III reports the ratio of unused loan commitments to loans. For the biggest banks (Panel A) this ratio decreased from 37.67% in 2003, to 22.47% in 2006, to 19.60% in 2008. No other size group has anywhere near this level of loan commitments or the other non-interest income associated with these securities. For the smallest banks (Panel E) this ratio increased from 9.53% in 2003, to 10.73% in 2006, then decreased to 7.09% in 2008. Further, Ratio 33 reports the ratio of notional amount of derivatives to total assets. For the biggest banks this ratio increased from 239.35% in 2003 to 294.84% in 2006, then decreased to 280.83% in 2008. Again, no other size group has anywhere near this level of derivative securities or the other non-interest income associated with the

trading of these securities. Because the largest banks held so many more of these OBS securities, the drop in their holdings has a significantly bigger impact on the performance of these largest banks.

Liquidity ratios: Ratios 34 through 37 in Table III show banks' liquidity ratios before and during the financial crisis. As reported in Table III, the liquidity ratio (ratio 37) generally decreased throughout the period 2003-2008. For the biggest banks this ratio decreased from 33.61% in 2003, to 28.31% in 2006, and to 25.71% in 2008. Thus, cash and near cash items not only decrease prior to the financial crisis, this liquidity fell even further during the crisis. Further, loans (a non-liquid asset) generally increased relative to total assets (ratio 34) and core deposits (a source of stable funds) generally decreased relative to total assets (ratio 35). The result was that for all bank size groups, the ratio of loans to deposits (ratio 36) increased from 2003 to 2008. This pattern of decreased liquidity is consistent across all size groups.

Growth indicators: The final accounting-based ratios reported in Table III are the growth indicators. For all but the smallest banks, we find that mean asset growth (ratio 38) increased from 2003 to 2006. However, with the financial crisis, all size groups' asset growth decreased significantly between 2006 and 2008. For example, for the biggest banks (Panel A) asset growth increased from 16.18% in 2003 to 18.66% in 2006, and then fell to 12.70% in 2008.

For all size groups, deposit growth fell significantly from 2003 to 2006. This trend continued during the financial crisis for the smallest two size groups (banks with assets less than \$1 billion, Panels D and E). The smallest banks saw this ratio decrease from 6.10% in 2006 to just 2.29% in 2008. However, the largest three size groups (Panels A, B, and C) experienced large increases in their deposit growth during the financial crisis. The largest banks saw deposit growth increase from 9.05% in 2006 to 28.56% in 2008 (significant at the 1% level). With the stock market performing so poorly during the financial crisis, many investors took what money they had left and deposited it at the larger banks (those that would be least likely to fail).

Summarizing the results in Table III, we find that banks were doing well before the financial crisis, from 2003 through 2006. Profit was high as loans and off-balance-sheet items offered solid returns. However, loan losses increased as the financial crisis took hold in 2007 and 2008. Further, off-balance-sheet business, especially in the derivatives area, slowed significantly. While banks tried to cut expenses as the crisis wore on, losses continued to grow and performance deteriorated.

III. 3. Corporate Governance Data

Table III also lists mean values for the corporate governance variables grouped by year and bank asset size.

To make the Table III more readable, we again report results for only 2003, 2006, and 2008.¹⁴

CEO pay-for-performance sensitivity: This ratio of top executive officer pay-for-performance (PPS) measures the CEO's incentive to manage firm performance and is constrained to lie between 0 and 1. The performance contract is set by the board of directors and the higher the PPS, the more sensitive is the CEO's pay to the performance of the firm. The data in Table III highlights differences in this measure before versus during the financial crisis as well as differences across bank size.

Note first that the PPS of the top executive officer (ratio 40) decreased significantly throughout the period of study for all bank size groups. PPS in 2006 was significantly smaller than in 2003 for all but the smallest banks with assets between \$500 million and \$1 billion (Panel D) and less than \$500 million (Panel E). Thus, going into the recession and the financial crisis, at the largest banks CEOs pay was set up to be less affected by the banks' performance. PPS decreased significantly further for all bank groups between 2006 and 2008. Note too that CEOs at the larger banks consistently had PPS contracts that were the most sensitive to bank performance. The largest banks had PPS measures that were consistently five to six times larger than the smallest banks. For the largest banks (Panel A) PPS decreased from 0.445 in 2003 to 0.298 in 2006 and to 0.220 in 2008. For banks with assets between \$3 billion and \$10 billion (Panel B) PPS decreased from 0.255 in 2003 to 0.208 in 2006 and to 0.151 in 2008. For the smallest banks (Panel E) PPS increased from 0.071 in 2003 to 0.090 in 2006 and then decreased to 0.030 in 2008. Thus, just before and during the financial crisis, top executive officer pay became significantly less sensitive to the performance of the bank. Given that the board of directors sets these contracts, boards that are dominated by the CEO or that have incentives aligned with the CEO (e.g., dominated by insiders) will tend to write contracts that are more favorable to the CEO. In this case, the data suggest that CEO's might have foreseen the huge drop in bank performance and structured pay contracts that would not be affected by these declines. Indeed, the multitude of press reports announcing huge bonuses at some of the largest banks despite record drops in performance provide anecdotal evidence that this may have been the case.

Board of director stock ownership: Stock ownership by board members gives them an incentive to monitor managers carefully, directing them to improve the performance of the firm and, consequently, board members' personal wealth. Table III reports that board ownership, and particularly insider and affiliated outsider ownership, decreased significantly during the financial crisis. At the largest banks, top five insider ownership (ratio 41) increased significantly from 4.11% in 2003 to 5.08% in 2006, then decreased significantly to 3.31% in 2008; total insider ownership (ratio 42) increased significantly from 4.85% in 2003 to 5.12% in 2006, then decreased significantly to 3.54% in 2008; affiliated outsider

¹⁴ Results for other years are available from the authors on request.

ownership (ratio 43) decreased from 2.00% in 2003 to 1.65% in 2006 (significant at 10%) to 1.42% in 2008; and outsider ownership (ratio 44) decreased significantly from 0.71% in 2003 to 0.28% in 2006 and to 0.00% in 2008. For banks with assets between \$3 billion and \$10 billion (Panel B), top five insider ownership decreased from 6.44% in 2003 to 6.22% in 2006 and to 5.33% in 2008 (significant at 5%); total insider ownership decreased significantly from 8.18% in 2003 to 7.54% in 2006 and to 6.63% in 2008; affiliated outsider ownership decreased significantly from 1.77% in 2003 to 0.85% in 2006 and to 0.41% in 2008. Outsider ownership, however, increased from 0.23% in 2003 to 0.35% in 2006 and to 0.46% in 2008. For the smallest banks (Panel E), top five insider ownership decreased significantly from 7.34% in 2003 to 7.13% in 2006 to 5.63% in 2008; total insider ownership decreased significantly from 8.20% in 2003 to 7.13% in 2006 to 5.63% in 2008; affiliated outsider ownership increased from 2.03% in 2003 to 2.27% in 2006, then decreased significantly to 1.16% in 2008. In contrast, outsider ownership increased significantly from 4.34% in 2003 to 4.49% in 2006 and to 5.41% in 2008. Thus, it appears that the boards of directors, and particularly the insiders and affiliated outsiders on the boards, sold their stock as the financial crisis hit. Insiders (and affiliated outsiders), with knowledge that bank performance would deteriorate with the financial market meltdown, sold their stock in the banks. Outsiders on the board, who were not involved in the day-to-day operations of the banks and who did not necessarily have the same information as board insiders, actually increased their ownership in the banks for all but the biggest banks.

Board of director independence: Boards dominated by outsiders are arguably in a better position to monitor and control managers. Outside directors are likely to be more independent of the firm's managers and to bring a greater breadth of experience to the firm. Further, larger boards are expected to be more easily dominated by CEOs and smaller boards are expected to have a constraining effect on executive behavior. Our specification of board independence is the inverse of board size times the ratio of the number of unaffiliated directors to the number of affiliated and inside directors. A higher level of board independence is associated with boards of directors that are less dominated by the CEO.

Table III reports that board independence (ratio 45) did not change significantly for any of the bank groups during the sample period. Further, the largest banks had the lowest levels for board independence, meaning that these banks had boards that were more dominated by the CEO (i.e., provided less monitoring). For the largest banks (Panel A), board independence increased from 0.191 in 2003 to 0.234 in 2006, then decreased to 0.228 in 2008. For the smallest banks (Panel E), board independence increased from 0.269 in 2003 to 0.312 in 2006, then decreased to 0.296 in 2008.

Number of board meetings per year: A greater level of involvement and oversight by the board of directors is characteristic of firms that are value maximizers for their owners. From Table III, we see that the number of board meetings per year

(ratio 46) did not change significantly during the sample period. For the largest banks (Panel A), the number of board meetings was 8.33 in 2003, 8.67 in 2006, and 8.85 in 2008. As financial institutions faced their greatest crisis since the Great Depression, boards of directors, charged with guiding the banks through the crisis, failed to meet more frequently.

CEO/chair duality: CEO/chair duality concentrates power in the CEO's position, potentially allowing for more management discretion. The dual office structure also permits the CEO to effectively control information available to other board members and thus impedes effective monitoring. Consequently, if CEO/Chair duality impedes effective monitoring, it could affect bank performance before and during the financial crisis. Table III reports that, in general, CEO/chair duality (ratio 47) increased or did not change significantly during the period of study. CEO/chair duality for those banks with assets between \$3 billion and \$10 billion decreased significantly, from 60.71% in 2003 to 45.00% in 2006, as did banks with assets between \$500 million to \$1 billion (from 43.30% in 2003 to 36.36% in 2006). Further, boards of the largest banks had significantly more boards with CEO/chair duality (80%) compared to any other size group (which consistently were below 50%).

Friendly nominating committee: Given that the nominating committee is charged with finding members of the board of directors, and that the board is charged with monitoring the firm's management, the composition (insiders versus outsiders) of the nominating committee can affect the degree to which firm managers are monitored, and ultimately firm performance. Table III reports that the majority of banks had "friendly" nominating committees (ratio 48). The largest banks (Panel A) had the lowest percentage of friendly nominating committees: 50.91% in 2003 and 45.83% in 2008. In contrast, 63.64% of banks with assets between \$500 million and \$1 billion (Panel D) had friendly nominating committees in 2008, down from 79.38% in 2003. Consistently, nominating committees are friendly to the CEO.

Golden parachutes: A golden parachute gives top executives significant benefits if employment is terminated. Thus, top executives may be less concerned about firm performance and their own termination when their bank offers a golden parachute. From Table III (ratio 49) we see that over 80% of the largest banks (Panel A) offered golden parachutes to their top executives throughout the sample period (85.42% still offered golden parachutes at the end of 2008). Other size groups offered golden parachutes equally as often. In 2008, 88.33 % of banks with assets between \$3 billion and \$10 billion (Panel B) offered golden parachutes to their top executives, up from 78.57% in 2003, while 91.18% of banks with assets between \$1 billion and \$3 billion (Panel C) offered golden parachutes to their top executives, up from 83.33% in 2003.

From the results in Table III, we see that corporate governance weakened significantly just before and during the financial crisis. CEO pay-for-performance sensitivity, board (and particularly insider and affiliated

outsider) stock ownership, and board independence decreased. Boards failed to meet more frequently. CEOs continued to serve in the dual role as board chair, nominating committees remained friendly to the CEO, and the incident of CEO golden parachutes increased. At a time when corporate governance would have been vitally important, banks saw decreases in management monitoring.

IV. Regression Results

The results so far show that market and accounting-based performance measures and corporate governance variables changed before and during the financial crisis. Another test of the change in performance around the crisis, and how corporate governance may have impacted bank performance, is to look at bank returns as a function of accounting measures and corporate governance through regression analysis. Because we are most interested in bank performance during the financial crisis, we look only at regressions using 2006 (just prior to the start of the financial crisis) and 2008 (during the peak of the financial crisis) data. Specifically, from the trends identified in Table III we examine various forms of the following regression:

$$\text{Performance}_{it} = a_0 + b_1 \text{ACCT}_{it} + b_2 \text{CORPGOV}_{it-1} + b_3 \text{SIZEDUM}_i \quad (2)$$

where Performance_{it} = measures of bank i 's return in year t ($t=2006$ and 2008),

ACCT_{it} = accounting measures for bank i in year t ,

CORPGOV_{it-1} = corporate governance measures for bank i in year $t-1$,

SIZEDUM_i = dummy variable for bank i 's year-end assets class,

We examine four measures of performance, Performance_{it} , in 2006 and 2008, respectively: BHAR, ROA, ROE, and Loan Loss Provision to Total Loans (LLP). For these regressions, the accounting measures are year-end values (ACCT_{it}) and corporate governance measures are lagged one year (CORPGOV_{it-1}). In separate regressions we look at changes in the three return measures from 2007 to 2008: $\Delta\text{BHAR}_{2007-2008}$, $\Delta\text{ROA}_{2007-2008}$, $\Delta\text{ROE}_{2007-2008}$, and $\Delta\text{LLP}_{2007-2008}$. In these regressions, the accounting measures are evaluated based on the change in their values from 2007 to 2008 ($\Delta\text{ACCT}_{2007-2008}$), while the corporate governance measures are the year-end 2007 values. The first set of regressions analyzes the full sample, with an independent variable (SIZEDUM) included to examine the impact of size on the dependent variable. In order to identify any unique relations between returns and accounting and corporate governance measures based on bank size, we also run the regressions one at a time for each of our five banks size categories.¹⁵

The accounting measures (ACCT_{it}) used in the regressions are the various accounting ratios described above.

¹⁵ To conserve space, we only report results for BHAR and change in BHAR for the full sample and regressions by asset size. Results and conclusions for ROA, ROE, LLP regressions are similar to those for BHAR and are available from the authors on request.

They include a cross section of the performance measures from the eight common bank performance indicator groups: total capital to assets (ratio 4), non-interest expense to non-interest revenue (ratio 9), personnel expense to total assets (ratio 12), total assets to employees (ratio 14), C&I loans to total loans (ratio 20), real estate loans to total loans (ratio 21), other non-interest income to total assets (ratio 29), *change in* unused loan commitments to total loans (ratio 30), notional amount of derivatives to total assets (ratio 33), liquidity ratio (ratio 37), and deposit growth rate (ratio 39). Note that we include the change in (rather than the end of year balance of) loan commitments to total loans. During the financial crisis, bank business and consumer customers were virtually frozen out of the credit markets. Thus, businesses and consumers in need of funds tended to draw down their loan commitments issued by commercial banks (we see this decrease in loan commitments to total loans in Table III). Accordingly, by including the change in unused loan commitments, we look how the draw down in loan commitments affected bank performance.

The corporate governance variables ($CORPGOV_{it}$) used in the regressions are also a subset of those discussed above and include top executive officer PPS (ratio 40), total insider ownership (ratio 42), affiliated ownership (ratio 43), board independence (ratio 45), number of board meetings per year (ratio 46), CEO/chair duality (ratio 47), friendly nominating committee (ratio 48), and golden parachutes (ratio 49). Tables IV and V present the regression results. We also include the change in insider and affiliated ownership (ratios 42A and 43A) over the year in the regressions. We saw in Table III that insider and affiliated ownership decreased significantly between 2007 and 2008. By including the change in insider and affiliated ownership in the regressions, we see if bank managers who made bad choices in their asset portfolios sold their claims early, leading to a correlation between insider and affiliated ownership and performance.

Table IV shows regression results for the full sample. The first regression looks at bank BHAR in 2006 (prior to the start of the financial crisis) as a function of accounting and corporate governance measures, while the second regression does the same for 2008 (at the height of the financial crisis). The third regression in the table uses the change in BHAR from 2007-2008 as the dependent variable. Results are fairly consistent across the three regressions. Specifically, regardless of the state of the economy, bank performance was significantly and positively related to the total capital to assets, total assets to employees, other non-interest income to total assets, liquidity, and deposit growth ratios and negatively related to non-interest expense to non-interest revenue, and personnel expenses to total assets ratios. Note too that the 2006 BHAR is unaffected by the ratio of real estate loans to total assets (ratio 21), the change in the ratio of unused loan commitments to total loans (ratio 30), and the notional amount of derivatives to total assets (ratio 32). However, the 2008 BHAR and the change in BHAR from 2007-2008 are significantly and negatively

related to ratios 21 and 32 and positively related to ratio 30. The financial crisis began with the collapse of the real estate market and banks' on and off-balance sheet mortgage related securities portfolios. We see that, indeed, banks that held more of these securities and those whose customers drew down their loan commitments at the start of the financial crisis experienced the lowest BHARs during the crisis.

From the corporate governance variables we see that bank BHARs increased with top executive pay-for-performance sensitivity, insider and affiliated outsider ownership and was lower for those banks that offered the top executive a golden parachute. Insider and affiliated outsider ownership had a stronger impact on BHARs during the financial crisis. Yet from the results in Table III, these board members actually decreased their ownership shares. Further, the regressions report board independence became more important in impacting BHARs during the financial crisis. Specifically, boards that exhibited greater independence had higher BHARs during the financial crisis. However, we saw in Table III that board independence did not change significantly or decreased during the crisis. Further, the largest banks had the lowest levels of board independence.

Table V reports regression results of the 2008 BHAR as a function of accounting and corporate governance measures based on bank 2008 asset size. Specifically, we classify banks by asset size as listed in Table III. The regressions allow us to identify any size-related differences in how accounting and corporate governance measures may have affected bank returns during the financial crisis. We find several consistencies in the accounting measures across the five regressions. Banks with high levels of equity (ratio 4), high employee productivity (ratio 14), lower expenses (ratios 9 and 12), and fewer real estate loans (ratio 21) performed better at the height of the financial crisis. In contrast, it was the only largest banks, those that held significant amounts of off-balance-sheet (loan commitments and derivatives) securities (ratios 30 and 32) and the non-interest income that came with them (ratio 29), that see these items significantly impact the 2008 BHAR.

Most interesting in Table V are the corporate governance variables. The coefficients on these variables have a significant impact on 2008 BHAR for the largest banks and generally not for the smaller banks. In all cases the regression results indicate that, for the largest banks, stronger corporate governance mechanisms resulted in larger increases (or, more likely, smaller decreases) in market returns during the financial crisis, i.e., 2008 BHAR. Except for top executive officer PPS and golden parachutes, the coefficients on the corporate governance variables are insignificant for the smallest banks and for these two variables the significance of the relation for the smaller banks is weaker than that for the larger banks. From Table III, we noted that just prior to the start of the financial crisis, some banks, particularly the larger banks, weakened their corporate governance controls (i.e., PPS and insider ownership) in

place which led to more severe drops in market returns. What we are finding with the regression analysis is that for the biggest banks, these decreases in corporate governance had the largest and most significant impacts on the banks' returns. At a time when corporate governance would have been vitally important, these banks saw decreases in management monitoring. It tended to be these large banks that were bailed out by the U.S. government through TARP. While the smaller banks also reduced their corporate governance controls, the reductions were not as large (see table III) and the consequences to BHARs and to the U.S. taxpayer were not as severe.

V. Conclusion

In this paper, we look at the performance of publicly-traded U.S. banks before and during the financial crisis. We find that banks were doing well before the financial crisis, from 2003 through 2006. Profit was high as loans and off-balance-sheet items offered solid returns. However, bank performance decreased dramatically during the financial crisis. Loan losses increased as the financial crisis took hold in 2007 and 2008. While banks tried to cut expenses as the crisis wore on, losses continued to grow and performance deteriorated. This decrease occurred for all size banks, but the largest banks saw the most significant losses in market value. Further, off-balance-sheet business, especially in the loan commitment and derivatives area, decreased significantly for all size groups. However, because the largest banks held so many more of these OBS securities, the drop in their holdings had a significantly bigger impact on the performance of these largest banks.

We also explore the extent to which corporate governance in the banking industry changed during the financial crisis and how corporate governance measures related to the performance of banks during the period of the crisis. We find that corporate governance weakened significantly just before and during the financial crisis. CEO pay-for-performance sensitivity, board (and particularly insider and affiliated outsider) stock ownership, and board independence decreased. Boards failed to meet more frequently. CEOs continued to serve in the dual role as board chair, nominating committees remained friendly to the CEO, and the incident of CEO golden parachutes increased. Most interesting, we find that corporate governance variables had a significant impact on 2008 market returns for the largest banks and not as much for smaller banks, i.e., those banks with the strongest corporate governance controls performed best. However, just prior to the start of the financial crisis, some banks, particularly the larger banks, weakened their corporate governance controls (i.e., PPS and insider ownership) in place which led to more severe drops in market returns. At a time when corporate governance would have been vitally important, these banks saw decreases in management monitoring.

Table I

Number of Banks Examined Between 2003 and 2008

The sample of publicly traded banks is compiled using the CRSP data base and the website of the Federal Reserve Bank of Chicago.

Year	Number of banks	Total assets > \$10 billion	Total assets \$3b - \$10b	Total assets \$1b - \$3b	Total assets \$500m - \$1b	Total assets < \$500 million
2003	419	55	56	114	97	97
2004	401	52	61	107	103	78
2005	390	57	65	112	97	59
2006	363	55	60	115	88	45
2007	332	49	66	106	75	36
2008	<u>302</u>	<u>48</u>	<u>60</u>	<u>102</u>	<u>66</u>	<u>26</u>
Total	2,207	316	368	656	526	341

Table II
Ratios Used to Analyze Bank Performance between 2003 and 2008

This table lists the ratio names and definitions used to examine bank performance during the period 2003 through 2008.

Ratio	Definition
Panel A: Accounting Measures of Performance	
<i>Profitability indicators</i>	
(1) Return on assets	Net income after taxes as a percent of book value of total assets
(2) Return on equity	Net income after taxes as a percent of book value of total equity capital
(3) Net interest margin	Interest income minus interest expense as a percent of book value of total assets
<i>Capital adequacy indicators</i>	
(4) Total capital to assets	Total equity and subordinate debt as a percent of book value of total assets
(5) Loans to total capital	Total loans as a percent of book value of total capital
(6) Deposits to total capital	Total deposits as a percent of book value of total capital
<i>Asset quality indicators</i>	
(7) Allowance for loan losses to loans	Allowance for loan losses as a percent of total loans and leases
(8) Loan loss provision to loans	Loan loss provision as a percent of total loans and losses
<i>Operating efficiency indicators</i>	
(9) Non-interest exp. to non-interest rev.	Non-interest expenses as a percent of non-interest revenue
(10) Non-interest exp. to net operating income	Non-interest expenses as a percent of net interest income plus non-interest income
(11) Non-interest exp. to total assets	Non-interest expenses as a percent of book value of total assets
(12) Personnel exp. to total assets	Salaries and employees benefits as a percent of total assets
(13) Fixed assets to total assets	Fixed assets as a percent of book value of total assets
(14) Total assets to employees	Book value of total assets to number of employees
(15) Net income to employees	Net income after taxes to number of employees
<i>Loan composition indicators</i>	
(16) Return on loans	Interest and fees on loans to total loans and leases
(17) Return on C&I loans	Interest on commercial and industrial (C&I) loans to C&I loans
(18) Return on real estate loans	Interest on real estate loans to real estate loans
(19) Return on consumer loans	Interest on consumer loans to consumer loans
(20) C&I loans to total loans	C&I loans as a percent of total loans
(21) Real estate loans to total loans	Real estate loans as a percent of total loans
(22) Consumer loans to total loans	Consumer loans as a percent of total loans
(23) C&I loans to total assets	C&I loans as a percent of book value of total assets
(24) Real estate loans to total assets	Real estate loans as a percent of book value of total assets
(25) Consumer loans to total assets	Consumer loans as a percent of book value of total assets
<i>Non-interest income indicators</i>	
(26) Income from fiduciary activities to total assets	Income from fiduciary activities as a percent of book value of total assets
(27) Service charges to total assets	Service charges as a percent of book value of total assets

(28) Trading gains to total assets	Trading gains as a percent of book value of total assets
(29) Other non-interest income to total assets	Other non-interest income as a percent of book value of total assets

Table II continued

Off-balance-sheet indicators

(30) Unused loan commitments to total assets	Unused loan commitments as a percent of book value of total assets
(31) Letters of credit to total assets	Letters of credit as a percent of book value of total assets
(32) Loans sold to total assets	Loans sold as a percent of book value of total assets
(33) Notional amount of derivatives to total assets	Notional amount of derivatives outstanding as a percent of book value of total assets
(33A) Notional amount of derivatives held for trading to total assets	Notional amount of derivatives held for trading as a percent of book value of total assets
(33B) Notional amount of derivatives held other than for trading to total assets	Notional amount of derivatives held other than for trading as a percent of book value of total assets

Liquidity risk indicators

(34) Loans to total assets	Total loans as a percent of book value of total assets
(35) Core deposits to total assets	Demand deposits plus savings deposits plus time deposits as a percent of book value of total assets
(36) Total loans to total deposits	Total loans as a percent of total deposits
(37) Liquidity ratio	Cash and book value of total investment securities as a percent of book value of total assets

Growth indicators

(38) Asset growth rate	Change in book value of total assets as a percent of book value of total assets in the previous year
(39) Deposit growth rate	Change in core deposits as a percent of core deposits in the previous year

Panel B: Corporate Governance Variables

(40) Top executive officer PPS	Black-Scholes value of options grants/(B-S value of options grants + annual compensation + bonus + other annual compensation)
(41) Top five insider ownership	Total percentage ownership of top five insiders
(42) Total insider ownership	Total percentage ownership of top five insiders, affiliated board members that are affiliated because of family relationship, and non-board blockholders that are family members of executives
(43) Affiliated ownership	Total percentage ownership of affiliated board members that are blockholders ($\geq 5\%$ ownership and no family relationship with executives) and related non-board blockholders
(44) Outsider ownership	Total percentage ownership of unaffiliated board members that are blockholders ($\geq 5\%$ ownership and no family relationship with executives) and related non-board blockholders
(45) Board independence	$(1 / \text{board size}) * [\text{unaffiliated directors} / (\text{inside directors} + \text{affiliated directors})]$
(46) Number of board meetings	Number of board meetings per year
(47) CEO/Chair duality	Dummy variable equal to 1 if CEO is also the Chair or if no Chair is identified, zero otherwise
(48) Friendly nominating committee	Dummy variable equal to 1 if inside or affiliated board member is on the nominating committee, zero otherwise
(49) Golden parachutes	Dummy variable equal to 1 if golden parachute exists, zero otherwise

Table III
Bank Performance between 2003 through 2008

This table lists performance statistics for the sample of publicly traded banks during the period 2003 through 2008. Panel A contains results for banks with year-end asset size greater than \$10 billion. Panel B contains results for banks with year-end asset size between \$3 billion and \$10 billion. Panel C contains results for banks with year-end asset size between \$1 billion and \$3 billion. Panel D contains results for banks with year-end asset size between \$500 million and \$1 billion. Panel E contains results for banks with year-end asset size less than \$500 million. Financial statement data needed to calculate performance ratios are obtained from FFIEC Call Report files, available at the Federal Reserve Bank of Chicago's website. We use proxy statements for each year to obtain board of director characteristics (i.e., the number of insiders, affiliated outsiders, and unaffiliated outsiders on the board, CEO/Chair duality). CEO stock and options ownership and compensation data was collected by hand from proxy statements—including the detailed options information necessary to replicate ExecuComp's Black-Scholes calculations. This replication process requires detailed options information from proxy statements as well as information from COMPUSTAT (to get dividend yields), CRSP (to get data to calculate stock price volatility), and the U.S. Treasury website, www.ustreas.gov, (to get the risk free rate). Results of t-statistics for differences in mean values are listed in the table. a = difference in 2003 and 2006 is significant at 1%, b = difference in 2003 and 2006 is significant at 5%, and c = difference in 2003 and 2006 is significant at 10%. d = difference in 2006 and 2008 is significant at 1%, e = difference in 2006 and 2008 is significant at 5%, and f = difference in 2006 and 2008 is significant at 10%.

Ratio	2003	2006	2008
Panel A: Banks with total assets > \$10 billion			
Buy-and-hold abnormal return	0.42%	1.09% ^b	-4.82% ^d
<i>Profitability indicators</i>			
(1) Return on assets	1.37%	1.29%	0.07% ^d
(2) Return on equity	15.69%	16.09%	0.96% ^d
(3) Net interest margin	3.02%	2.90%	2.86%
<i>Capital adequacy indicators</i>			
(4) Total capital to assets	8.78%	9.55%	9.62%
(5) Loans to total capital	708.65%	678.05%	764.88%
(6) Deposits to total capital	784.03%	772.17%	731.15%
<i>Asset quality indicators</i>			
(7) Allowance for loan losses to loans	1.46%	1.05% ^b	1.86% ^d
(8) Loan loss provision to loans	0.56%	0.24% ^b	1.75% ^d
<i>Operating efficiency indicators</i>			
(9) Non-interest exp. to non-interest rev.	192.25%	187.36%	258.47% ^e
(10) Non-interest exp. to net operating income	55.75%	57.48%	68.62% ^d
(11) Non-interest exp. to total assets	3.12%	2.93%	3.04%
(12) Personnel exp. total assets	1.47%	1.45%	1.30%
(13) Fixed assets to total assets	1.19%	1.26%	1.34%
(14) Total assets to employees (millions of \$s)	\$5.254	\$6.095	\$5.937
(15) Net income to employees (thousands of \$s)	\$66.182	\$75.875 ^b	\$1.967 ^d
<i>Loan composition indicators</i>			
(16) Return on loans	5.21%	6.51% ^b	5.67% ^e
(17) Return on C & I loans	5.13%	6.91% ^a	5.51% ^d
(18) Return on real estate loans	5.14%	6.46% ^a	5.48% ^d
(19) Return on consumer loans	6.89%	7.86% ^b	8.01%
(20) C & I loans to total loans	18.70%	19.36% ^c	20.01%
(21) Real estate loans to total loans	57.94%	60.95% ^b	61.23%
(22) Consumer loans to total loans	12.65%	8.97% ^a	8.74%
(23) C & I loans to total assets	11.25%	12.39% ^b	10.49% ^e
(24) Real estate loans to total assets	35.52%	40.39% ^a	36.61% ^e
(25) Consumer loans to total assets	6.55%	5.47% ^c	5.50%
<i>Non-interest income indicators</i>			
(26) Income from fiduciary activities to total assets	0.39%	0.63% ^a	0.70%
(27) Service charges to total assets	0.37%	0.39%	0.39%
(28) Trading gains to total assets	0.11%	0.29% ^a	0.07% ^d
(29) Other non-interest income to total assets	1.46%	2.67% ^a	0.87% ^d
<i>Off-balance-sheet indicators</i>			
(30) Unused loan commitments to total assets	37.67%	22.47% ^a	19.60% ^d
(31) Letters of credit to total assets	55.25%	60.28% ^b	55.34% ^e
(32) Loans sold to total assets	7.84%	7.00%	6.86%
(33) Notional amount of derivatives to total assets	239.35%	294.84% ^a	280.83% ^f
(33A) Notional amount of derivatives held for trading to total assets	219.90%	274.58% ^a	260.57% ^f
(33B) Notional amount of derivatives held other than for trading to total assets	19.45%	20.24%	20.26%

<i>Liquidity risk indicators</i>			
(34) Loans to total assets	59.55%	62.56% ^b	64.42% ^f
(35) Core deposits to total assets	51.41%	50.94%	52.83% ^f
(36) Total loans to total deposits	91.79%	90.80%	95.12% ^d
(37) Liquidity ratio	33.61%	28.31% ^a	25.71% ^d
<i>Growth indicators</i>			
(38) Asset growth rate	16.18%	18.66% ^b	12.70% ^d
(39) Deposit growth rate	13.13%	9.05% ^a	28.56% ^d
<i>Corporate governance variables</i>			
(40) Top executive officer PPS	0.445	0.298 ^a	0.220 ^d
(41) Top five insider ownership	4.11%	5.08% ^b	3.31% ^d
(42) Total insider ownership	4.85%	5.12% ^b	3.54% ^d
(43) Affiliated ownership	2.00%	1.65% ^c	1.42%
(44) Outsider ownership	0.71%	0.28% ^a	0.00% ^d
(45) Board independence	0.191	0.234 ^c	0.228
(46) Number of board meetings	8.33	8.67	8.85
(47) CEO/Chair duality (% with)	80.00%	83.64%	81.25%
(48) Friendly nominating committee (% with)	50.91%	41.82% ^b	45.83%
(49) Golden parachutes (% with)	87.27%	83.64%	85.42%

Panel B: Banks with total assets between \$3 billion and \$10 billion

Buy-and-hold abnormal return	0.52%	0.97% ^b	-4.12% ^d
<i>Profitability indicators</i>			
(1) Return on assets	1.27%	1.21%	-0.11% ^d
(2) Return on equity	14.79%	13.81%	-2.42% ^d
(3) Net interest margin	3.39%	3.45%	3.15%
<i>Capital adequacy indicators</i>			
(4) Total capital to assets	9.01%	10.54%	10.27%
(5) Loans to total capital	683.35%	679.92%	711.68%
(6) Deposits to total capital	814.88%	744.53%	739.98%
<i>Asset quality indicators</i>			
(7) Allowance for loan losses to loans	1.45%	1.21% ^b	1.88% ^d
(8) Loan loss provision to loans	0.39%	0.17% ^b	1.79% ^d
<i>Operating efficiency indicators</i>			
(9) Non-interest exp. to non-interest rev.	237.52%	366.59%	137.20% ^d
(10) Non-interest exp. to net operating income	57.34%	56.31%	68.67% ^d
(11) Non-interest exp. to total assets	2.81%	2.51%	2.78%
(12) Personnel exp. total assets	1.42%	1.30%	1.24%
(13) Fixed assets to total assets	1.37%	1.24%	1.29%
(14) Total assets to employees (millions of \$s)	\$4.440	\$6.591	\$5.945
(15) Net income to employees (thousands of \$s)	\$57.017	\$65.469 ^b	-\$21.482 ^d
<i>Loan composition indicators</i>			
(16) Return on loans	5.73%	7.01% ^a	6.14% ^f
(17) Return on C & I loans	5.68%	8.01% ^a	6.59% ^e
(18) Return on real estate loans	5.71%	6.73% ^a	5.90% ^e
(19) Return on consumer loans	8.10%	8.86%	9.83% ^e
(20) C & I loans to total loans	19.15%	18.06% ^b	17.72%
(21) Real estate loans to total loans	65.52%	71.46% ^b	71.15%
(22) Consumer loans to total loans	9.45%	6.26% ^a	5.41% ^e
(23) C & I loans to total assets	11.54%	12.43%	11.62% ^f
(24) Real estate loans to total assets	40.38%	49.64% ^b	47.69% ^f
(25) Consumer loans to total assets	4.34%	4.12%	3.62% ^e
<i>Non-interest income indicators</i>			
(26) Income from fiduciary activities to total assets	0.21%	0.21%	0.11% ^d
(27) Service charges to total assets	0.41%	0.35%	0.37%
(28) Trading gains to total assets	0.02%	0.01%	0.01%
(29) Other non-interest income to total assets	0.78%	1.23% ^a	0.44% ^d
<i>Off-balance-sheet indicators</i>			
(30) Total unused commitments to total assets	9.61%	11.72% ^a	8.21% ^d
(31) Letters of credit to total assets	19.66%	22.03% ^b	21.06% ^e
(32) Loans sold to total assets	0.19%	0.29% ^b	0.19% ^e

(33) Notional amount of derivatives to total assets	11.44%	4.61% ^a	6.04%
(33A) Notional amount of derivatives held for trading to total assets	0.07%	1.37% ^a	2.74% ^e
(33B) Notional amount of derivatives held other than for trading to total assets	11.37%	3.23% ^a	3.30%
<i>Liquidity risk indicators</i>			
(34) Loans to total assets	60.11%	69.03% ^a	69.52%
(35) Core deposits to total assets	58.92%	59.68%	59.92%
(36) Total loans to total deposits	84.81%	92.45% ^a	95.89% ^e
(37) Liquidity ratio	34.65%	24.54% ^a	23.45%
<i>Growth indicators</i>			
(38) Asset growth rate	12.37%	14.22% ^b	12.47% ^e
(39) Deposit growth rate	10.11%	8.55% ^b	16.13% ^d
<i>Corporate governance variables</i>			
(40) Top executive officer PPS	0.255	0.208 ^a	0.151 ^d
(41) Top five insider ownership	6.44%	6.22%	5.33% ^e
(42) Total insider ownership	8.18%	7.54% ^c	6.63% ^e
(43) Affiliated ownership	1.77%	0.85% ^a	0.41% ^e
(44) Outsider ownership	0.23%	0.35% ^b	0.46% ^e
(45) Board independence	0.276	0.220	0.233
(46) Number of board meetings	8.27	9.12	9.07
(47) CEO/Chair duality (% with)	60.71%	45.00% ^a	43.33%
(48) Friendly nominating committee (% with)	62.50%	55.00% ^b	61.67% ^e
(49) Golden parachutes (% with)	78.57%	83.30% ^b	88.33%

Panel C: Banks with total assets between \$1 billion and \$3 billion

Buy-and-hold abnormal return	0.72%	0.89% ^b	-3.83% ^d
<i>Profitability indicators</i>			
(1) Return on assets	1.17%	1.12%	-0.09% ^d
(2) Return on equity	12.80%	11.63%	-3.05% ^d
(3) Net interest margin	3.45%	3.57%	3.27%
<i>Capital adequacy indicators</i>			
(4) Total capital to assets	9.54%	9.88%	9.48%
(5) Loans to total capital	724.66%	757.28%	827.67%
(6) Deposits to total capital	846.09%	821.80%	823.42%
<i>Asset quality indicators</i>			
(7) Allowance for loan losses to loans	1.41%	1.14% ^b	1.66% ^d
(8) Loan loss provision to loans	0.36%	0.23% ^b	1.44% ^d
<i>Operating efficiency indicators</i>			
(9) Non-interest exp. to non-interest rev.	294.75%	359.54%	327.58% ^f
(10) Non-interest exp. to net operating income	60.42%	59.25%	52.83% ^e
(11) Non-interest exp. to total assets	2.81%	2.63%	2.91%
(12) Personnel exp. total assets	1.45%	1.42%	1.37%
(13) Fixed assets to total assets	1.48%	1.66%	1.73%
(14) Total assets to employees (millions of \$s)	\$4.155	\$4.345	\$4.841
(15) Net income to employees (thousands of \$s)	\$42.224	\$49.137 ^b	-\$6.563 ^d
<i>Loan composition indicators</i>			
(16) Return on loans	5.96%	7.12% ^a	6.26% ^d
(17) Return on C & I loans	6.12%	8.06% ^a	6.89% ^e
(18) Return on real estate loans	5.90%	6.98% ^a	6.15%
(19) Return on consumer loans	11.16%	10.30%	8.62% ^e
(20) C & I loans to total loans	16.34%	15.12% ^c	14.49% ^f
(21) Real estate loans to total loans	71.99%	76.14% ^c	77.06%
(22) Consumer loans to total loans	8.24%	5.36% ^a	5.21%
(23) C & I loans to total assets	10.65%	10.89%	10.77%
(24) Real estate loans to total assets	47.49%	55.15% ^b	56.86%
(25) Consumer loans to total assets	3.10%	3.84%	3.74%
<i>Non-interest income indicators</i>			
(26) Income from fiduciary activities to total assets	0.16%	0.08% ^c	0.10%
(27) Service charges to total assets	0.41%	0.37%	0.37%
(28) Trading gains to total assets	0.00%	0.00%	0.00%
(29) Other non-interest income to total assets	0.67%	0.76%	0.38% ^d

<i>Off-balance-sheet indicators</i>			
(30) Total unused commitments to total assets	9.03%	11.50% ^a	7.49% ^d
(31) Letters of credit to total assets	16.87%	16.09%	15.02%
(32) Loans sold to total assets	0.07%	0.01%	0.02%
(33) Notional amount of derivatives to total assets	2.32%	2.14%	1.51% ^e
(33A) Notional amount of derivatives held for trading to total assets	0.01%	0.03%	0.00%
(33B) Notional amount of derivatives held other than for trading to total assets	2.30%	2.12%	1.51% ^e
<i>Liquidity risk indicators</i>			
(34) Loans to total assets	65.33%	72.21% ^a	74.65% ^f
(35) Core deposits to total assets	63.85%	60.76% ^c	60.69%
(36) Total loans to total deposits	86.51%	92.95% ^b	98.11% ^e
(37) Liquidity ratio	29.16%	21.81% ^a	19.32% ^f
<i>Growth indicators</i>			
(38) Asset growth rate	14.36%	14.84%	8.84% ^d
(39) Deposit growth rate	14.94%	11.28% ^b	11.56%
<i>Corporate governance variables</i>			
(40) Top executive officer PPS	0.162	0.119 ^a	0.093 ^e
(41) Top five insider ownership	8.52%	6.37% ^a	5.00% ^d
(42) Total insider ownership	8.91%	7.38% ^b	6.02% ^d
(43) Affiliated ownership	1.80%	1.36% ^c	0.93% ^f
(44) Outsider ownership	1.22%	1.43% ^c	1.62% ^f
(45) Board independence	0.254	0.267	0.295
(46) Number of board meetings	10.39	11.36	11.26
(47) CEO/Chair duality (% with)	44.74%	41.74%	44.12%
(48) Friendly nominating committee (% with)	75.44%	50.43% ^a	53.92%
(49) Golden parachutes (% with)	83.33%	86.09%	91.18%
Panel D: Banks with total assets between \$500 million and \$1 billion			
Buy-and-hold abnormal return	0.47%	0.92% ^b	-3.02% ^d
<i>Profitability indicators</i>			
(1) Return on assets	1.08%	0.62%	-0.14% ^d
(2) Return on equity	12.07%	9.60%	-0.95% ^d
(3) Net interest margin	3.58%	3.59%	3.27%
<i>Capital adequacy indicators</i>			
(4) Total capital to assets	9.14%	10.19% ^b	9.70% ^e
(5) Loans to total capital	755.14%	759.99%	810.88%
(6) Deposits to total capital	885.12%	833.86%	835.17%
<i>Asset quality indicators</i>			
(7) Allowance for loan losses to loans	1.36%	1.15% ^b	1.46% ^d
(8) Loan loss provision to loans	0.43%	0.18% ^b	0.84% ^d
<i>Operating efficiency indicators</i>			
(9) Non-interest exp. to non-interest rev.	312.88%	350.60%	322.75% ^f
(10) Non-interest exp. to net operating income	61.09%	67.34%	66.10%
(11) Non-interest exp. to total assets	2.88%	3.40%	3.39%
(12) Personnel exp. total assets	1.59%	1.60%	1.52%
(13) Fixed assets to total assets	1.74%	1.66%	1.66%
(14) Total assets to employees (millions of \$s)	\$3.616	\$3.969	\$4.431
(15) Net income to employees (thousands of \$s)	\$38.314	\$21.849 ^b	-\$12.745 ^d
<i>Loan composition indicators</i>			
(16) Return on loans	6.30%	7.18% ^b	6.42% ^e
(17) Return on C & I loans	6.21%	8.28% ^a	6.63% ^d
(18) Return on real estate loans	6.20%	6.95%	6.30%
(19) Return on consumer loans	8.73%	9.02%	8.96%
(20) C & I loans to total loans	15.31%	12.59% ^a	12.92%
(21) Real estate loans to total loans	75.93%	79.87% ^b	79.88%
(22) Consumer loans to total loans	6.52%	5.23% ^b	5.03%
(23) C & I loans to total assets	10.39%	8.97% ^a	9.16%
(24) Real estate loans to total assets	50.97%	58.00% ^a	58.16%
(25) Consumer loans to total assets	3.47%	3.57%	3.25%

<i>Non-interest income indicators</i>			
(26) Income from fiduciary activities to total assets	0.06%	0.21% ^b	0.25%
(27) Service charges to total assets	0.40%	0.31%	0.31%
(28) Trading gains to total assets	0.00%	0.00%	0.00%
(29) Other non-interest income to total assets	0.67%	0.70%	0.46% ^f
<i>Off-balance-sheet indicators</i>			
(30) Total unused commitments to total assets	8.27%	10.75% ^a	7.47% ^d
(31) Letters of credit to total assets	15.48%	16.75% ^c	14.97% ^e
(32) Loans sold to total assets	0.48%	0.04% ^b	0.00%
(33) Notional amount of derivatives to total assets	1.44%	2.06%	1.62%
(33A) Notional amount of derivatives held for trading to total assets	0.00%	0.00%	0.02%
(33B) Notional amount of derivatives held other than for trading to total assets	1.44%	2.06%	1.59%
<i>Liquidity risk indicators</i>			
(34) Loans to total assets	67.29%	71.89% ^a	73.10%
(35) Core deposits to total assets	66.16%	62.22% ^b	60.89%
(36) Total loans to total deposits	86.29%	91.28% ^b	96.43% ^e
(37) Liquidity ratio	28.30%	22.51% ^a	20.87% ^f
<i>Growth indicators</i>			
(38) Asset growth rate	12.20%	12.86%	8.79% ^d
(39) Deposit growth rate	10.79%	9.06% ^c	8.38%
<i>Corporate governance variables</i>			
(40) Top executive officer PPS	0.086	0.084	0.043 ^d
(41) Top five insider ownership	7.24%	6.52% ^c	5.87% ^e
(42) Total insider ownership	7.51%	7.48%	6.50% ^e
(43) Affiliated ownership	1.96%	1.99%	2.21% ^f
(44) Outsider ownership	3.22%	3.36%	2.76% ^e
(45) Board independence	0.322	0.311	0.271 ^f
(46) Number of board meetings	10.70	12.45 ^c	11.67
(47) CEO/Chair duality (% with)	43.30%	36.36% ^b	37.88%
(48) Friendly nominating committee (% with)	79.38%	50.00% ^a	63.64% ^e
(49) Golden parachutes (% with)	77.32%	84.09% ^c	85.85%
Panel E: Banks with total assets less than \$500 million			
Buy-and-hold abnormal return	0.22%	1.01% ^b	-2.55% ^d
<i>Profitability indicators</i>			
(1) Return on assets	0.88%	0.97%	-0.11% ^d
(2) Return on equity	9.69%	10.35%	-3.73% ^d
(3) Net interest margin	3.41%	3.53%	3.21%
<i>Capital adequacy indicators</i>			
(4) Total capital to assets	8.92%	9.43%	8.58% ^d
(5) Loans to total capital	770.44%	760.32%	805.03%
(6) Deposits to total capital	935.88%	867.89%	853.36%
<i>Asset quality indicators</i>			
(7) Allowance for loan losses to loans	1.38%	1.19% ^b	1.55% ^d
(8) Loan loss provision to loans	0.27%	0.19% ^b	0.96% ^d
<i>Operating efficiency indicators</i>			
(9) Non-interest exp. to non-interest rev.	435.78%	465.41%	441.01% ^f
(10) Non-interest exp. to net operating income	68.70%	63.99%	62.09%
(11) Non-interest exp. to total assets	3.04%	2.76%	2.98%
(12) Personnel exp. total assets	1.64%	1.49%	1.54%
(13) Fixed assets to total assets	1.62%	1.75%	1.50%
(14) Total assets to employees (millions of \$s)	\$3.389	\$4.161	\$4.627
(15) Net income to employees (thousands of \$s)	\$28.897	\$40.107 ^a	-\$3.201 ^d
<i>Loan composition indicators</i>			
(16) Return on loans	6.18%	7.18% ^b	6.40% ^e
(17) Return on C & I loans	7.03%	8.14% ^b	7.01% ^e
(18) Return on real estate loans	6.03%	7.05% ^c	6.27%
(19) Return on consumer loans	8.98%	9.06%	8.77%
(20) C & I loans to total loans	15.30%	13.61% ^b	11.16% ^e
(21) Real estate loans to total loans	77.63%	79.98%	80.79%

(22) Consumer loans to total loans	5.33%	4.28% ^b	3.49% ^e
(23) C & I loans to total assets	10.53%	9.73%	8.79%
(24) Real estate loans to total assets	51.93%	56.42% ^b	56.28%
(25) Consumer loans to total assets	3.04%	2.83%	2.27%
<i>Non-interest income indicators</i>			
(26) Income from fiduciary activities to total assets	0.03%	0.04%	0.04%
(27) Service charges to total assets	0.33%	0.28%	0.28%
(28) Trading gains to total assets	0.00%	0.00%	0.00%
(29) Other non-interest income to total assets	0.68%	0.74%	0.36% ^d
<i>Off-balance-sheet indicators</i>			
(30) Total unused commitments to total assets	9.53%	10.73% ^c	7.09% ^d
(31) Letters of credit to total assets	15.83%	15.22%	14.65%
(32) Loans sold to total assets	0.06%	0.01%	0.00%
(33) Notional amount of derivatives to total assets	0.35%	1.23% ^b	0.26% ^d
(33A) Notional amount of derivatives held for trading to total assets	0.00%	0.00%	0.03%
(33B) Notional amount of derivatives held other than for trading to total assets	0.35%	1.23% ^b	0.24% ^d
<i>Liquidity risk indicators</i>			
(34) Loans to total assets	67.20%	70.46% ^b	67.46% ^e
(35) Core deposits to total assets	68.12%	63.92% ^b	63.05%
(36) Total loans to total deposits	83.18%	88.16% ^b	89.72%
(37) Liquidity ratio	28.93%	25.14% ^a	27.56% ^f
<i>Growth indicators</i>			
(38) Asset growth rate	13.47%	8.36% ^a	4.24% ^d
(39) Deposit growth rate	12.65%	6.10% ^a	2.29% ^d
<i>Corporate governance variables</i>			
(40) Top executive officer PPS	0.071	0.090 ^b	0.030 ^d
(41) Top five insider ownership	7.34%	7.13%	5.63% ^d
(42) Total insider ownership	8.20%	7.13% ^c	5.63% ^d
(43) Affiliated ownership	2.03%	2.27%	1.16% ^d
(44) Outsider ownership	4.34%	4.49%	5.41% ^e
(45) Board independence	0.269	0.312	0.296
(46) Number of board meetings	10.81	10.58	11.23
(47) CEO/Chair duality (% with)	30.93%	44.44% ^a	50.00% ^e
(48) Friendly nominating committee (% with)	83.51%	60.00% ^a	53.85%
(49) Golden parachutes (% with)	80.41%	80.00%	76.92%

a = difference in 2003 and 2006 is significant at 1%,
b = difference in 2003 and 2006 is significant at 5%,
c = difference in 2003 and 2006 is significant at 10%,
d = difference in 2006 and 2008 is significant at 1%,
e = difference in 2006 and 2008 is significant at 5%,
f = difference in 2006 and 2008 is significant at 10%.

Table IV

Regressions of Bank BHAR on Accounting and Corporate Governance Variables

This table shows regression results of bank BHAR on various accounting and corporate governance variables for the sample of publicly traded banks in 2006 and 2008. For the 2006 and 2008 regressions, the accounting measures are year-end values ($ACCT_t$), while the corporate governance measures are lagged one year ($CORPGOV_{t-1}$). The table also shows regression results of change in bank BHAR from 2007-2008 on various accounting and corporate governance variables. For this regression the accounting measures are also evaluated based on the change in their values from 2007 to 2008 ($\Delta ACCT_{2007-2008}$), while the corporate governance measures are the year-end 2007 values ($CORPGOV_{2007}$). Financial statement data needed to calculate performance ratios are obtained from FFIEC Call Report files, available at the Federal Reserve Bank of Chicago's website. We use proxy statements for each year to obtain board of director characteristics (i.e., the number of insiders, affiliated outsiders, and unaffiliated outsiders on the board, CEO/Chair duality). CEO stock and options ownership and compensation data was collected by hand from proxy statements—including the detailed options information necessary to replicate ExecuComp's Black-Scholes calculations. This replication process requires detailed options information from proxy statements as well as information from COMPUSTAT (to get dividend yields), CRSP (to get data to calculate stock price volatility), and the U.S. Treasury website, www.ustreas.gov, (to get the risk free rate).

Ratio	2006 BHAR	2008 BHAR	2007-2008 Change in BHAR
Constant	0.18632 [6.28] ^a	0.00364 [0.32]	-0.00348 [-0.19]
(4) Total capital to assets	1.32574 [12.79] ^a	2.99736 [3.54] ^a	6.64922 [11.16] ^a
(9) Non-interest exp. to non-interest rev.	-0.00576 [-5.52] ^a	-0.01124 [-2.84] ^a	-0.00297 [-2.59] ^b
(12) Personnel exp. to total assets	-5.16421 [-2.41] ^b	-7.19942 [-2.69] ^a	-9.27584 [-2.51] ^b
(14) Total assets to employees	1.06243 [3.22] ^a	4.83572 [2.85] ^a	5.11646 [3.57] ^a
(20) C&I loans to total assets	0.01703 [0.56]	0.00579 [0.19]	-0.00608 [-0.86]
(21) Real estate loans to total assets	0.02593 [1.19]	-0.77254 [-4.78] ^a	-0.26721 [-5.58] ^a
(29) Other non-interest income to total assets	2.63744 [2.96] ^a	4.70263 [3.62] ^a	8.62251 [4.24] ^a
(30) Change in unused loan commitments to total assets	0.13572 [1.25]	2.86415 [3.73] ^a	2.20752 [3.66] ^a
(32) Notional amount of derivatives to total assets	0.06224 [1.25]	-2.32614 [-3.55] ^a	-1.62463 [-3.79] ^a
(37) Liquidity ratio	0.02874 [1.79] ^c	0.14793 [2.38] ^b	0.09931 [2.49] ^b
(39) Deposit growth rate	0.10369 [3.56] ^a	0.25935 [2.59] ^b	0.07988 [2.93] ^a
(40) Top executive officer PPS	0.11325 [3.35] ^a	0.06227 [2.69] ^a	0.07631 [3.08] ^a
(42) Total insider ownership	0.04078 [1.25]	0.24036 [3.14] ^a	0.14963 [3.05] ^a

(42A) Change in insider ownership	0.04351 [1.06]	0.37952 [3.78] ^a	0.24794 [3.51] ^a
(43) Affiliated ownership	0.06963 [1.83] ^c	0.27352 [2.89] ^a	0.31644 [2.75] ^a
(43A) Change in affiliated ownership	0.05847 [1.47]	0.31631 [2.92] ^a	0.35007 [2.84] ^a
(45) Board independence	0.00353 [0.93]	0.14753 [2.63] ^a	0.05935 [2.55] ^b
(46) Number of board meetings	0.00023 [1.05]	0.00181 [0.82]	0.00152 [1.02]
(47) CEO/Chair duality	-0.00537 [-0.37]	-0.02684 [-1.48]	-0.02548 [-1.29]
(48) Friendly nominating committee	-0.00248 [-0.27]	-0.01756 [-0.97]	-0.00319 [-0.39]
(49) Golden parachutes	-0.04078 [-2.42] ^b	-0.07193 [-2.84] ^a	-0.0751 [-2.93] ^a
Total assets between \$3b. and \$10b.	0.00483 [0.72]	-0.00386 [-0.82]	0.00293 [0.44]
Total assets between \$1b. and \$3b.	-0.00853 [-0.76]	-0.00794 [-0.82]	-0.00993 [-0.89]
Total assets between \$500m. and \$1b.	-0.01035 [-1.22]	-0.02974 [-1.09]	0.02337 [1.12]
Total assets less than \$500m	-0.01604 [-1.17]	-0.03026 [-0.95]	-0.04105 [-1.23]
Adjusted R-Squared	49.73	53.23	58.62
F-stat	16.95	17.73	18.76
P-value	0.0000	0.0000	0.0000

^a significant at 1%.

^b significant at 5%.

^c significant at 10%.

Table V

Regressions of 2008 BHAR on Accounting and Corporate Governance Variables based on Bank Asset Size

This table shows regression results of change in bank 2008 BHAR on various accounting and corporate governance variables where banks are grouped by asset size. For this regression the accounting measures are year-end values (ACCT₂₀₀₈), while the corporate governance measures are lagged one year (CORPGOV₂₀₀₇). Financial statement data needed to calculate performance ratios are obtained from FFIEC Call Report files, available at the Federal Reserve Bank of Chicago's web-site. We use proxy statements for each year to obtain board of director characteristics (i.e., the number of insiders, affiliated outsiders, and unaffiliated outsiders on the board, CEO/Chair duality). CEO stock and options ownership and compensation data was collected by hand from proxy statements—including the detailed options information necessary to replicate ExecuComp's Black-Scholes calculations. This replication process required detailed options information from proxy statements as well as information from COMPUSTAT (to get dividend yields), CRSP (to get data to calculate stock price volatility), and the U.S. Treasury website, www.ustreas.gov, (to get the risk free rate).

Ratio	Total assets > \$10b.	Total assets between \$3b. and \$10b.	Total assets between \$1b. and \$3b.	Total assets between \$500m. and \$3b.	Total assets less than \$500m.
Constant	0.00236 [0.18]	0.00783 [0.24]	0.00921 [0.37]	-0.01774 [-0.78]	0.01085 [0.85]
(4) Total capital to assets	2.38642 [3.21] ^a	2.97441 [2.89] ^a	3.10782 [3.79] ^a	4.45792 [3.98] ^a	4.15626 [3.43] ^a
(9) Non-interest exp. to non-interest rev.	-0.05962 [-3.24] ^a	-0.01276 [-1.80] ^c	0.00012 [0.10]	-0.00306 [-0.87]	-0.00589 [-0.99]
(12) Personnel exp. to total assets	-8.04778 [-2.79] ^a	-5.31372 [-2.60] ^a	-10.37482 [-3.25] ^a	-4.75573 [-2.47] ^b	-8.48216 [-2.69] ^a
(14) Total assets to employees	6.41446 [3.09] ^a	4.80097 [2.70] ^a	2.02435 [2.38] ^b	2.85582 [2.29] ^b	4.84738 [2.82] ^a
(20) C&I loans to total assets	-0.00624 [-0.47]	-0.00747 [-0.42]	-0.00985 [-0.64]	-0.00932 [-0.71]	0.00075 [0.15]
(21) Real estate loans to total assets	-1.10563 [-4.14] ^a	-0.81226 [-3.76] ^a	-0.29573 [-2.44] ^b	-0.45855 [-2.53] ^b	-0.64862 [-2.57] ^b
(29) Other non-interest income to total assets	9.10352 [4.45] ^a	7.76771 [3.81] ^a	3.80624 [1.19]	1.85634 [0.67]	0.94007 [0.72]
(30) Change in unused loan commitments to total assets	10.10843 [5.33] ^a	3.02886 [2.75] ^a	1.46615 [1.19]	0.09942 [0.65]	0.06472 [0.43]
(32) Notional amount of derivatives to total assets	-8.95735 [-4.29] ^a	-3.22681 [-2.92] ^a	-1.05148 [-1.07]	-0.07633 [-0.49]	-0.05374 [-0.36]
(37) Liquidity ratio	0.23462 [2.42] ^b	0.13596 [2.18] ^b	0.08327 [1.93] ^c	0.09462 [1.70] ^c	0.06033 [1.25]
(39) Deposit growth rate	0.27208 [3.09] ^a	0.18385 [2.71] ^a	0.12065 [2.12] ^b	0.12698 [2.09] ^b	0.07477 [1.38]
(40) Top executive officer PPS	0.06752 [3.24] ^a	0.04984 [2.89] ^a	0.03108 [2.32] ^b	0.01364 [1.75] ^c	0.02058 [1.89] ^c
(42) Total insider ownership	0.39874 [3.32] ^a	0.25697 [2.95] ^a	0.15126 [2.59] ^b	0.05496 [1.94] ^c	0.02621 [1.30]

(42A) Change in insider ownership	0.73042 [4.98] ^a	0.43672 [3.18] ^a	0.23564 [2.85] ^a	0.09647 [2.16] ^b	0.03726 [1.53]
(43) Affiliated ownership	0.31742 [2.85] ^a	0.28563 [3.01] ^a	0.22456 [2.72] ^a	0.10573 [1.19]	0.13205 [1.41]
(43A) Change in affiliated ownership	0.46437 [3.11] ^a	0.30465 [2.92] ^a	0.28471 [2.69] ^a	0.12537 [1.67] ^c	0.10721 [1.48]
(45) Board independence	0.19074 [3.24] ^a	0.15247 [2.86] ^a	0.02231 [1.22]	0.01865 [1.11]	0.01107 [0.89]
(46) Number of board meetings	0.00381 [0.64]	0.00392 [0.86]	0.00216 [0.45]	0.00305 [0.90]	-0.00234 [-0.47]
(47) CEO/Chair duality	-0.05784 [-2.26] ^b	-0.01468 [-0.99]	-0.01621 [-1.04]	0.00756 [0.51]	-0.01342 [-0.97]
(48) Friendly nominating committee	-0.02019 [-0.97]	-0.01981 [-0.85]	-0.02218 [-1.11]	0.02034 [1.06]	0.00392 [0.25]
(49) Golden parachutes	-0.08731 [-3.13] ^a	-0.05095 [-2.86] ^a	-0.04804 [-2.65] ^a	-0.08022 [-2.86] ^a	-0.07682 [-2.70] ^a
Adjusted R-Squared	64.08	60.59	59.82	60.39	45.93
F-stat	20.31	18.22	17.53	18.05	14.84
P-value	0.0000	0.0000	0.0000	0.0000	0.0000

^a significant at 1%.

^b significant at 5%.

^c significant at 10%.

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Appendix

Descriptive statistics for the full sample

This table lists descriptive statistics on the performance variables for the sample of publicly traded banks during the period 2003 through 2008. Financial statement data needed to calculate performance ratios are obtained from FFIEC Call Report files, available at the Federal Reserve Bank of Chicago's website. We use proxy statements for each year to obtain board of director characteristics (i.e., the number of insiders, affiliated outsiders, and unaffiliated outsiders on the board, CEO/Chair duality). CEO stock and options ownership and compensation data was collected by hand from proxy statements—including the detailed options information necessary to replicate ExecuComp's Black-Scholes calculations. This replication process requires detailed options information from proxy statements as well as information from COMPUSTAT (to get dividend yields), CRSP (to get data to calculate stock price volatility), and the U.S. Treasury website, www.ustreas.gov, (to get the risk free rate).

Ratio	Mean	Median	St. Dev.	Minimum	Maximum
<i>Profitability indicators</i>					
(1) Return on assets	0.90%	1.04%	1.20%	-35.21%	4.25%
(2) Return on equity	9.61%	11.13%	11.03%	-155.60%	33.37%
(3) Net interest margin	3.38%	3.34%	0.73%	0.94%	6.72%
<i>Capital adequacy indicators</i>					
(4) Total capital to assets	9.67%	9.34%	2.97%	3.51%	61.75%
(5) Loans to total capital	740.09%	737.40%	190.96%	18.69%	2097.25%
(6) Deposits to total capital	822.10%	816.08%	193.78%	52.79%	2146.13%
<i>Asset quality indicators</i>					
(7) Allowance for loan losses to loans	1.32%	1.23%	0.51%	0.00%	7.41%
(8) Loan loss provision to loans	0.46%	0.25%	0.76%	-1.35%	14.01%
<i>Operating efficiency indicators</i>					
(9) Non-interest exp. to non-interest rev.	352.42%	285.48%	494.56%	-10060.03%	7984.82%
(10) Non-interest exp. to net operating income	63.01%	61.04%	19.01%	17.03%	347.70%
(11) Non-interest exp. to total assets	2.87%	2.69%	1.63%	0.39%	54.04%
(12) Personnel exp. total assets	1.46%	1.39%	0.55%	0.14%	6.49%
(13) Fixed assets to total assets	1.54%	1.42%	0.86%	0.02%	6.62%
(14) Total assets to employees (millions of \$s)	\$4.632	\$3.927	\$4.296	\$1.372	\$101.123
(15) Net income to employees (thousands of \$s)	\$38.388	\$39.133	\$64.852	-\$1494.813	\$625.854
<i>Loan composition indicators</i>					
(16) Return on loans	6.33%	6.28%	1.06%	1.47%	12.11%
(17) Return on C & I loans	6.94%	6.63%	2.98%	0.78%	83.06%
(18) Return on real estate loans	6.17%	6.16%	1.08%	0.78%	13.08%
(19) Return on consumer loans	9.21%	7.97%	14.48%	0.93%	528.10%
(20) C & I loans to total loans	15.77%	13.95%	9.80%	0.00%	75.10%
(21) Real estate loans to total loans	73.70%	76.28%	15.87%	0.00%	100.01%
(22) Consumer loans to total loans	6.61%	3.68%	8.49%	0.00%	97.13%
(23) C & I loans to total assets	10.77%	9.33%	6.81%	0.00%	48.48%
(24) Real estate loans to total assets	51.13%	52.02%	15.21%	0.00%	91.65%
(25) Consumer loans to total assets	4.29%	2.50%	5.28%	0.00%	61.07%
<i>Non-interest income indicators</i>					
(26) Income from fiduciary activities to total assets	0.16%	0.01%	0.70%	0.00%	13.62%
(27) Service charges to total assets	0.36%	0.34%	0.23%	0.00%	2.35%
(28) Trading gains to total assets	0.01%	0.00%	0.09%	-0.49%	1.54%
(29) Other non-interest income to total assets	0.63%	0.44%	0.88%	-0.65%	17.39%
<i>Off-balance-sheet indicators</i>					
(30) Unused loan commitments to total assets	13.13%	9.74%	36.26%	0.00%	926.83%
(31) Letters of credit to total assets	22.37%	18.00%	34.49%	0.00%	962.25%
(32) Loans sold to total assets	1.21%	0.00%	8.31%	0.00%	145.01%
(33) Notional amount of derivatives to total assets	35.68%	0.01%	295.16%	0.00%	5503.78%
(33A) Notional amount of derivatives held for trading to total assets	31.05%	0.00%	292.35%	0.00%	5498.17%
(33B) Notional amount of derivatives held other than for trading to total assets	4.63%	0.00%	18.60%	0.00%	429.38%
<i>Liquidity risk indicators</i>					
(34) Loans to total assets	68.45%	70.49%	13.22%	1.21%	96.31%
(35) Core deposits to total assets	60.94%	62.17%	12.12%	1.30%	86.65%
(36) Total loans to total deposits	91.14%	92.58%	18.19%	2.49%	183.47%
(37) Liquidity ratio	25.49%	23.20%	12.69%	1.18%	94.55%
<i>Growth indicators</i>					
(38) Asset growth rate	12.91%	8.70%	23.90%	-44.89%	697.55%
(39) Deposit growth rate	13.69%	6.96%	62.89%	-54.96%	2487.07%

Corporate governance variables

(40) Top executive officer PPS	0.151	0.062	0.203	0.000	1.000
(41) Top five insider ownership	6.30%	3.32%	9.08%	0.01%	73.79%
(42) Total insider ownership	7.06%	3.42%	10.76%	0.01%	90.30%
(43) Affiliated ownership	1.72%	0.00%	6.47%	0.00%	76.19%
(44) Outsider ownership	1.78%	0.00%	5.13%	0.00%	54.30%
(45) Board independence	0.268	0.190	0.235	0.000	1.000
Percent of insiders on board	16.65%	14.29%	9.12%	0.00%	75.00%
Percent of affiliated outsiders on board	17.56%	15.38%	14.30%	0.00%	91.67%
Percent of outsiders on board	65.78%	66.67%	16.12%	0.00%	100.00%
Board size	11.38	11.00	3.42	3.00	31.00
(46) Number of board meetings	10.40	11.00	4.86	1.00	94.00
(47) CEO/Chair duality	1,148 no	1,059 yes			
(48) Friendly nominating committee	934 no	1,273 yes			
(49) Golden parachutes	365 no	1,842 yes			
