

Before and After the FDICIA:

A Look into Commercial Banking Risk Behavior and Profit

By Lisa Birr

I. INTRODUCTION

The banking industry in the United States has held many forms and has faced differing supervision and regulation, especially during the past decade. Beginning in 1991 with the Federal Deposit Insurance Corporation Improvement Act (FDICIA), then the Reigle-Neal Act of 1994, and the Financial Modernization Act (FMA) of 1999, the United States banking structure has undergone several key systematic changes. The rationale for these changes was to accelerate the trend towards a financial system that is more integrated in terms of activities and products. However, there is much debate over these improvements and their effects on bank behavior in regards to risk taking, concentration of power, and the safety of consumers' monies.

The purpose of my research will be to focus on the passage of one particular regulation change and evaluate its effectiveness. The specific regulation that I will be reviewing is the Federal Deposit Insurance Corporation Improvement Act (FDICIA). In particular, I will review the relationships of pre-FDICIA banking structure, post-FDICIA banking structure, and their effects on bank behavior and profits. Using balance sheet characteristics, risk behaviors, and other characteristics of banks, I will create a model to help predict if the banking behavior spawned by the new regulation is beneficial to society. This paper will explore the determinants of the changes in banking risk behavior and whether they increase or decrease banks' profits.

Section Two will provide historical background information describing the creation and need for the Federal Deposit Insurance Corporation (FDIC) after the Great Depression and the Federal Deposit Insurance Corporation Improvement Act (FDICIA) after the banking debacle of the 1980s. Section Three will then provide a review of previous research done

on the impact and effectiveness of the FDICIA on the banking industry. A theoretical model will be created and discussed in Section Four followed by an empirical model in Section Five. The results of the empirical model will be presented in Section Six, and future implications of the study will be presented in Section Seven.

II. HISTORICAL BACKGROUND

The Great Depression of the late 1920s and early 1930s caused financial chaos in America, but one of its enduring legacies was the creation of deposit insurance for financial intermediaries. When the stock market crashed in October of 1929, there was no regulation separating financial markets as there is today. The markets were linked, thus, when the securities market crashed the commercial banking sector felt the ripples. The American people were scared to hold their monies in banks for fear that the banks would lose the money and they would not be able to withdraw their own funds. This fear created bank runs and caused more than 9,000 bank failures between the stock market crash in October of 1929 and March of 1933 (FDIC website, 1999). For all practical purposes, the nation's banking system had shut down completely and thus desperately needed help and restructuring. Among the actions taken by Congress to bring order to the system was the separation of the financial markets, including the creation of the Federal Deposit Insurance Corporation (FDIC) in June of 1933. The intent of this legislation was to provide a federal government guarantee of deposits so that customers' funds, within certain limits, would be safe and available to them on demand. The coverage per depositor was set at a maximum of \$2,500, and all Federal Reserve member banks were required to join. Today, the "heart of the FDIC's mission is to maintain stability and public confidence in the nation's

financial system” (FDIC website, 1999).

From the 1930’s through the 1970’s the FDIC’s insurance of commercial banks and mutual savings banks appeared to be an unqualified success. Bank failures declined, no panics occurred, banks were more profitable, and the insurance fund grew. Between 1943 and 1981, the FDIC collected more income from the insurance premiums charged to banks than it needed to pay off depositors in failed institutions. In 1983, however, insurance losses began to exceed assessment revenue as 43 banks failed. By the end of the decade more than 1,000 had failed, and in 1991 the FDIC projected for the first time a negative net worth of \$7 billion for the fund (Khademian, 1996). In late 1990 and early 1991, the outlook for the banking industry, and even for the federal deposit insurance fund that backs most of its deposits, was especially bleak. Several analysts, agencies, and the federal government itself warned that the large number and size of bank failures would exhaust the resources of the FDIC. At the same time, the stock market had severely discounted the share prices of most large banks well below their book value.

It was in this environment that in early 1991 the Senate and House Banking Committee each introduced bills calling for major deposit insurance reform. In the end, the Federal Deposit Insurance Corporation Improvement Act (FDICIA) was created. The FDICIA represented the final legislative response to the thrift debacle and regional banking problems of the 1980s. This statute enacted needed reforms to the system of bank supervision and regulation and to federal deposit insurance. Much of the act was designed both to curb the incentives that deposit insurance gives to weakly capitalized insured banks to take excessive risks, and to limit the cost of failures to the FDIC. The primary purpose of the legislation was to provide the bank insurance fund with a \$30 billion line of credit, but it also took an important step toward limiting the discretion exercised by bank examiners and supervisors to assess the condition of banks and bring enforcement actions against problem banks (Khademian, 1996).

III. LITERATURE REVIEW

When the FDICIA of 1991 was passed, many bankers denounced it as the epitome of regulatory

burden. In initial reviews of the legislation, the FDICIA was not looked upon favorably: “It is viewed by bankers as unnecessarily overreactive to the industry’s troubles, as having injected the regulatory body deeply into the management of the banks, removing regulatory managerial discretions and replacing it with formulas for regulatory action” (Weintraub, 1993). The passage of the FDICIA is argued to do nothing in terms of bettering industry efficiency and competitiveness. Many claim it will generate efficiency losses that originate from the regulations adopted to counter the distorted and negative incentives at work in the financial system (Hoskins, 1993).

Glauber (1993) feels that the final rendition of the FDICIA that was passed has negative aspects. He argues that Congress greatly added to the burden of excessive regulatory management and paperwork reporting. He disputes that the greatest defect of the FDICIA is the omission of the structural reforms that are essential if banks are to be competitive in modern financial times. If the banking industry is to achieve long-run competitive viability, it will have to play a more effective role in support of its own interests.

However, a decade has past and many studies state that depository institutions have in fact prospered since the FDICIA’s enactment. Kaufman (1994) found that two problems existed in the 1980s that the FDICIA sought to correct. First, deposit insurance permitted regulators to keep troubled and even insolvent institutions in operation in order to avoid public criticism of their performance. Second, underpriced and flat-premium deposit insurance encouraged institutions to take risks both through the reduction of their capital and the increase of the interest rate, and creation of exposures of their asset and liability portfolios. Kaufman deems that bank regulators who opposed the act weakened the impact of the FDICIA by imposing and changing specific regulations in the act. However, even in its weakened form, Kaufman believes the FDICIA has both helped to make the banking industry financially healthier and changed the behavior of the regulators.

Richard Scott Carnell, Assistant Secretary of the Treasury for Financial Institutions, states that the percentage of commercial banks reporting net losses plummeted by two-thirds, while aggregate commercial bank net income rose to set new records from

1992 to 1995. He acknowledged that by 1997, commercial banks' return on assets had more than doubled since 1991 and the return on equity rose to 14.4% in 1996 from 7.94% in 1991 (Treasury Defends FDICIA Bank Reform, 1997). This is a positive indication for the FDICIA. However, not all of the assessments may be attributed to the regulation change, but could be due, in part, to the economic recovery of the U.S. after the recession of 1990.

In a more recent study, Benston and Kaufman (1998) conclude that under FDICIA, deposit insurance appears to have been put on a more workable incentive-compatible basis that should reduce the tendency for banks to take excessive risks and for regulators to unduly delay imposing sanctions on financially troubled institutions. They argue that there is additional capital being raised by banks above that required by law in the FDICIA, and this is a driving factor in the improvement of the banking industry. It is not clear whether this additional capital would have occurred with or without the FDICIA, but it does indicate that banks may be becoming more risk averse and less prone to fail, and this is being positively reflected on the FDICIA.

Overall, the majority of the reviews have been positive. Previous literature has used differing measures of the effectiveness of the FDICIA, including risk measures, asset measures, and liability measures. It is the goal of this study to incorporate all of these measures to determine if the passage of the FDICIA did positively impact the banking industry.

IV. THEORETICAL MODEL

This paper argues that the enactment of the FDICIA not only improved the stability of the banking sector by reducing risk incentives, but also improved banks' profitability, which is beneficial to society. In theory, a bank's exposure to risk should have an impact on its holdings and profitability. In general, risks are very subjective and can either create a profit or a loss. Financial theory states that the greater the risk, the greater the return; this means that an opportunity with a higher risk should have a higher return because the chances of the opportunity failing is greater. For example, a "junk" bond would pay a higher interest rate than a bond rated AAA because it has a greater chance of defaulting. The purpose of

the FDICIA is to curb the risk-taking behavior that was seen in the past, particularly in the 1980s. However, as stated earlier, the purpose of this paper is to prove that the FDICIA is beneficial by decreasing risk taking behaviors and increasing banks' profitability. In this case, risky behaviors were curbed, but returns increased, which contradicts basic financial theory.

Before the enactment of the FDICIA, bank examiners scolded problem banks, but hardly ever punished them; in other words, they did not enforce policy and behavior changes. Thus, banks continued to participate in risky behaviors. Some banks benefited from this behavior and increased profits, but many lost and caused bank failures. In general, prior to the enactment of the FDICIA, banks that were incurring losses were hard to reprimand because of FDIC protections, leading to an industry that was less profitable overall. The FDICIA curbed this behavior by limiting the discretion of bank supervisors and examiners and bringing greater enforcement against problem banks. Thus, those problem banks were forced to change their risky behaviors and become more risk averse. This change decreased the probability of losses and bank failures, which is then reflected in an increase of profits in the industry.

The idea of a more controlled regulation and structure leads to better organization and a better-run business or industry. The initial idea behind the rules and regulations set up in the FDIC of 1933 was to prevent the terrible losses of the Great Depression from ever occurring again and to improve banks' profits so losses wouldn't occur. Thus, the basic theory behind the FDICIA is the same as that in 1933: to improve the industry and society through better regulation.

In order to determine the impact of the FDICIA, banks' profits will be measured. In theory, profits are a function of balance sheet characteristics (capital, liabilities, and assets) and of risk behaviors (credit risk). Furthermore, profits will vary according to other characteristics, such as management quality and liquidity. I discuss each of these characteristics below.

A. Balance Sheet Characteristics

1. Capital

Capital, in broad terms, is the accumulated wealth of a company. Under the FDICIA banks are

required to hold a minimum amount of capital, which is used to protect against losses. The amount held is a percentage based on the risk embedded in their asset holding. Therefore, banks with relatively risky assets will hold a higher amount of capital than those banks with less risky assets. However, many banks maintain a higher level of capital than required by law to hedge the risk of default from customers. They wish to avoid any potential loss that comes from being undercapitalized, which was the cause of many bank losses in the 1980s, and maintain a positive balance income. Since the reasoning behind high levels of capital can differ between banks because of risk exposure or avoidance, the direction of the relationship between capital and bank profitability is ambiguous.

2. *Liabilities: Deposits*

A liability in general is an amount owed. For commercial banks, a liability is a deposit or other borrowing they receive from individuals and businesses to be held at the bank, but are withdrawn from the bank at the individual's request. A large amount of deposits would indicate that a bank has a large liability and must be able to return the money deposited. However, a large amount of deposits may also indicate that the bank is well managed and profitable. Therefore, the relationship between liabilities and profitability is ambiguous and may be better viewed in relation to assets.

3. *Assets: Securities and Loans/Leases*

An asset is the opposite of liability and is an amount held or receivable. For commercial banks, an asset is mainly a security or a loan/lease. A security is a financial asset including any note, bond, debenture, certificate of interest, and certificate of deposit. A loan and/or lease is money lent at interest for a borrower's temporary use under the terms that it will be paid back. In theory, a large amount of assets would indicate that a bank is large and resourceful and able to handle risks better in order to be profitable. However, a large amount of assets may indicate that those larger banks can afford to take larger risks. Another ambiguous relationship is predicted; in this case, between assets and profitability.

B. Risk Exposure

Credit Risk Exposure -Asset Quality

Credit risk, or default risk, is a risk that a company or individual will be unable to pay the contractual interest or principal on its debt obligations, such as loans. Loans are assets for a bank, but there exists the chance that a customer will default and not be able to pay back the loan. Thus the bank loses the asset. To control for this risk each bank must maintain an allowance for loan and lease losses that is adequate to absorb estimated credit losses associated with its loan and lease portfolio. A bank with relatively risky assets will be required to maintain a larger loan loss reserve account.

Loans are considered non-current if they are 90 days or more past due. Thus a bank with a high level of non-current loans would be considered risky. A riskier loan portfolio may be an indication of management's partiality for or mismanagement of risk that may be reflected in profits. It can be argued that investors and consumers would view a bank with a relatively high loan loss reserve or a bank with a relatively high balance of non-current loans as one of high risk (Hundman, 1999). A bank might have a difficult time keeping its assets and capital level high to manage this risk, which would then reflect in a loss of profits. Therefore, the direction of the relationship between profits and bank credit is inverse.

C. Other Characteristics

1. Management Quality

The quality of the management of a bank will determine the risks it takes and how stringent the bank is on following the rules and guidelines set up by the law. If there is a wide range of fluctuations and disorganization within management, the bank's profits will suffer. A bank whose management mishandles its capital, assets, liabilities, and its exposure to varying risks is expected to fail or suffer incredible losses. On the other hand, a well-organized management will follow rules and guidelines so that the bank is profitable and beneficial to consumers and society. Therefore, the higher the quality of the management, the more profitable a bank will be.

2. Liquidity

Liquidity is how easily an asset can be converted to cash in the market. An asset with low liquidity can be considered risky. If there is a fluctuation in the market and a bank wishes to cash in on some of its assets, it may have a difficult time depending on the liquidity of the asset it wants to pull. Therefore, the more liquid an asset, the better in terms of a bank's profit. However, having all highly liquid assets may deplete profits because it gives off a signal to customers that a bank does not have financing for the long term and may need quick cash. Therefore, a moderate level of liquidity is profitable. Because of this, a positive relationship is predicted between liquidity and profits up to some level.

V. EMPIRICAL MODEL

In order to prove that the FDICIA has improved the banking sector, a comparison of descriptive values will be done. Using data collected from before and after the enactment of the FDICIA this section analyzes bank regulation changes on bank characteristics, risk behaviors, and profit. The independent variables are balance sheet characteristics, risk behaviors, and other characteristics. The dependent variable is bank profit. Therefore profit will be viewed as a function of these qualities:

$$Profit = f(balance\ sheet, risk, other)$$

The dependent variable, profit, will be measured as return on assets (ROA), which measures net income after taxes and extraordinary items as a percent of average total assets. The independent variables, which are described earlier and in Table 1 include: total equity capital, total liabilities, total assets, loss allowance to loans, and non-current loans to loans.

Management quality and liquidity are two independent variables that have to be dropped from the theoretical model because of data constraints. Management quality is subjective with no real means for measurement. Therefore, the variable must be dropped from the empirical model. However, management quality is still important to the research problem and should still be considered when banks are evaluated. A measurement for liquidity, such as the amount of short-term or long-term loans, could not be found with the selected data set and so must be dropped. Like management quality, this is still an important factor to look at when reviewing the profitability and risk behaviors of a bank.

This model will review the effectiveness of the FDICIA by reviewing the changes in the independent variables in relation to the dependent variable in two time spans. It is predicted that although the FDICIA imposed more stringent regulation to curb risky behaviors by commercial banks, it also increased profitability. The empirical model for pre-FDICIA and post-FDICIA is based on pooled time series, cross

Table 1: Independent Variable Definitions and Relationship to Dependent Variable (ROA)

| Characteristic | Variable | Definition | ROA Relationship |
|----------------|----------------------------|--|------------------|
| Balance Sheet | Capital | total equity capital (includes preferred and common stock, surplus and undivided profits) | ? |
| Balance Sheet | Liabilities | total liabilities (deposits and other borrowings) | ? |
| Balance Sheet | Assets | total assets (cash, loans, securities, bank premises and other assets) | ? |
| Credit Risk | Loss Allowance to Loans | allowance for loan and lease losses as a percent of total loan and lease financing receivables | - |
| Credit Risk | Non-Current Loans to Loans | loans and leases 90 days or more past due plus loans in non-accrual status, as a percent of gross loans and leases | - |

sectional quarterly data. Post-FDICIA data is composed of 46 banks for the period 1996:IV to 1998:I. A total of 276 cases were observed. There was an availability constraint for pre-FDICIA data (data from the late 1980s) so a proxy had to be used. The earliest data readily attainable was for 1992:IV and 1993:IV. This data set will be used as a substitute for the pre-FDICIA data, given the idea that the regulation changes from the FDICIA are not felt right away, but after an amount of time has passed. The sample size for pre-FDICIA is composed of 46 banks for two quarters. A total of 92 cases were observed. Although the data sets differ in sample size, I predict that they will still give informative descriptives results. The data was taken from the Institutional Directory System of the Federal Deposit Insurance Corporation (FDIC), which provides financial information on banks based on quarterly Call Reports. The sample banks are diversified geographically and by asset size, with all banks holding over one million dollars in assets by 1996.

VI. RESULTS

The descriptives tests of pre-FDICIA data and post-FDICIA data are informative and did prove my hypothesis correct. In comparing the two time periods, the mean value of ROA and all the balance sheet characteristics (capital, liabilities, and assets) turned out to be positive - that is these variables increased from pre-FDICIA to post-FDICIA (table 2 and table 3). Also, the mean value of the two risk measures, loss allowance to loans and non-current loans to loans, decreased over time. This shows that the FDICIA was successful in lowering the average of risk taking

behavior.

ROA is one of the most important variables and should be looked at more closely. I predicted that the FDICIA increased profits seen by banks, and by reviewing ROA we can see that this indeed happened. Not only did the maximum value of ROA increase dramatically, but so did its mean value. The mean value of ROA increased from 1.13 to 1.46, which is a considerable increase of 29%.

Another important variable is capital. One purpose of the FDICIA was to raise the capital requirements held by commercial banks, and thus capital is a variable that needs to be examined more closely. It is obvious by reviewing the maximum level of capital for all banks that the FDICIA did in fact have a positive effect on the level held. The amount of capital held in the earlier data set reached a maximum level of \$176,276,000, whereas, the amount held in the later data set reached a maximum of \$6,036,457,000. Also, the mean value of capital increased by \$338,286,000, which is an 11% increase. However, the standard deviation of this variable also rose considerably, indicating that many of the banks in the data set held a greater number of differing amounts of capital after the passage of the FDICIA.

Also, the risk measures proved an important point. Moving from the pre-FDICIA data set to the post-FDICIA data set, both variables decreased. The mean value of loss allowance to loans decreased from 1.89% to 1.86% and the mean value of non-current loans to loans decreased from 1.48% to 1.14%. These new values for loss allowance to loans and non-current loans to loans do not seem to deviate much from the original values, but they amount to a -2%

Table 2: Pre-FDICIA Descriptive Statistics

| Variable | Maximum | Mean | Std. Deviation |
|-----------------------------------|----------------|-------------|-----------------------|
| ROA | 14.71 | 1.13 | 1.13 |
| Capital* | 176276 | 30353 | 27868.79 |
| Liabilities* | 1752154 | 349006 | 305179.19 |
| Assets* | 1928430 | 379360 | 332080.01 |
| Loss Allowance to Loans | 4.97 | 1.89 | 0.85 |
| Non-Current Loans to Loans | 8.17 | 1.48 | 1.78 |

*measured in dollar amounts (000)

Table 3: Post-FDICIA Descriptive Statistics

| Variable | Maximum | Mean | Std. Deviation |
|-----------------------------------|----------------|-------------|-----------------------|
| ROA | 35.63 | 1.46 | 2.78 |
| Capital* | 6036457.00 | 368639 | 1266975.22 |
| Liabilities* | 64083419.00 | 3741734 | 13301970.18 |
| Assets* | 69707864.00 | 4323716 | 14998127.80 |
| Loss Allowance to Loans | 11.32 | 1.86 | 1.47 |
| Non-Current Loans to Loans | 6.80 | 1.14 | 1.17 |

*measured in dollar amounts (000)

and -30% change, respectively.

Overall, the descriptives tests for both data sets proved to be very informative and have shown that the regulation change has influenced the variables considerably.

VII. CONCLUSION AND POLICY IMPLICATIONS

The results of the descriptives tests prove my hypothesis correct: that the FDICIA was beneficial to the banking industry and society. It was predicted that the FDICA did change bank characteristics and risk behaviors, and the comparison of the two data sets illustrates this. ROA and the balance sheet characteristics increased and the risk measures decreased. Thus, the results proved my hypothesis that the regulatory changes proposed by the FDICIA were effective in their ultimate goals: lowering risk-taking behaviors by commercial banks, but also increasing the profits seen by banks.

The increase in ROA over the time span 1992 to 1998 indicates that bank profitability has increased since the inception of the FDICIA and so has the level of capital held by the commercial banks. The higher level of capital suggests that fewer banks are under-capitalized and are able to handle market fluctuations and risks better and are not subject to failing easily. Again, these results lead me to believe that my hypothesis is correct given the data proxies for pre-FDICIA.

The banking industry is part of everyone's lives in one way or another; thus this subject should be reviewed extensively. It would be interesting to see how big an impact the FDICIA had by reviewing the

post-FDICIA data set I gathered to one gathered during the 1980s before the passage of the act. I believe that this would further indicate that profits increased and risk-taking behavior decreased. Also, risk is a very subjective instrument and it would be interesting to evaluate the changes in banking behavior by looking at several other measures for risk-taking behavior. If the omitted variable had a way to be measured it would be interesting to see the effect that the FDICIA had on them as well. Another option for future research would be the inclusion of GDP. This would help control for business cycles and economic booms and recessions, or lack there of, during the two data sets. It would be particularly important in the post-FDICIA data set since the U.S. economy experienced a recession in 1990, just before the enactment of the FDICIA.

Regardless of these possible improvements in the research project and design, the results indicate that the inception of the FDICIA was effective. A major conclusion of this research is that a more controlled regulatory system is better for the banking industry and thus a continued careful monitoring of the industry always needs to be in place.

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