

# **The Effects of Resolution-Method Choice on Resolution Costs in Bank Failures<sup>1</sup>**

**Rosalind L. Bennett**  
**FDIC Division of Insurance and Research**

**Haluk Unal**  
**Smith School of Business, University of Maryland and FDIC CFR**

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## **ABSTRACT**

We examine how costs of resolving bank failures differ between Deposit Payoff and Purchase and Assumption (P&A) methods. Our findings show that once asset quality differences are controlled for there exists no difference between these methods in liquidating the failed bank's assets. In other words, assets are worth as much in the hands of the FDIC as in the hands of the private sector. In contrast, under the P&A method direct costs of failure resolution are lower and it takes a shorter time to complete the resolution. These observations draw on a sample that spans all failures between 1986 and 2005 representing varying size of failures as well as legislative periods

**Opinions expressed in this paper are those of authors'  
and not necessarily those of the FDIC.**

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## **I. Introduction**

In the United States 2,427 depository institutions failed from 1986 to 2007. Out of these 1,244 of them with \$222 billion in assets were placed under a Federal Deposit Insurance Corporation (FDIC) receivership for resolution.<sup>2</sup> As of year-end 2007, the FDIC estimates that the total cost to the deposit insurance funds of resolving the BIF- and DIF-insured failed banks is around \$30 billion. We provide the first in-depth analysis of this extended and costly experience using the population of bank failures that were resolved and terminated by the FDIC during the 1986 to 2007 period.

The FDIC uses two primary methods to resolve a failed bank once it is placed under a receivership. They are deposit payoffs and purchase and assumption (P&A) agreements. The primary difference between the methods is whether the FDIC assumes and liquidates the failed-bank assets and pays off the depositors (deposit payoffs) or leaves most or all of the failed-bank assets in the private sector and transfers some or all of the deposits to an acquirer (P&A agreements).

Our primary objective is to examine how costs of resolving bank failures differ between these two methods. We decompose the total cost of bank failures into losses incurred on the disposition of the assets of the failed bank and direct expenses incurred to resolve these failures. We demonstrate how these costs are distributed across the method of resolution controlling for failed-bank specific, industry, and macroeconomic variables. We also examine the time spent in resolution together with resolution costs. To our knowledge no prior research exists on this issue. In this paper, we fill this gap and provide an empirical model of the determinants of time in resolution.

When a bank is closed, the FDIC determines the resolution structure. The FDIC markets the assets and liabilities of the institution to potential bidders and evaluates the bids to determine the resolution method. Institutions that have higher quality assets and a higher franchise value associated with their deposits will most likely attract more bidders and result in a P&A transaction. Therefore, it is misleading to compare costs between a

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<sup>2</sup> The remainder of the failures is thrift institutions, which were insured by Federal Savings and Loan Insurance Corporation (FSLIC) or Saving Association Insurance Fund (SAIF) or resolved by the Resolution Trust Corporation (RTC). We focus on Bank Insurance Fund (BIF)- and Deposit Insurance Fund (DIF)-insured institutions and our sample draws from this group. Throughout the paper we refer to them as banks.

P&A and a Deposit Payoff, without controlling for the differences in the quality of the assets and liabilities of the institution.

Our multivariate regressions allow for the selection bias in the FDIC's choice of the resolution method. In the first stage of our analysis, the probit regression, we control for differences in the quality of assets liquidated by the Deposit Payoff and P&A methods and considerations the FDIC gives to minimize the disruption to the community. We use factors that are proxies for the community disruption concerns as our instruments in the first-stage choice regressions. In the second stage, we estimate equations for the net loss on assets, the direct and the time in receivership controlling for the selection in the resolution choice.

Our sample consists of 1,213 of the 1,244 banks that failed during the 1986 to 2007 period. We consolidate the individual bank failures under their respective holding company name resulting in a sample of 1,092 failures. We find that the consolidated sample has a mean book value of equity to assets ratio on the last Call Report of -1.47 percent. The mean discounted net loss on the disposition of assets as a percent of total assets is 21.42 percent. The mean ratio of discounted total receivership expense to assets is 12.19 percent of which 3.53 percent is the average ratio of discounted direct receivership expenses to assets. As a result, mean discounted total resolution cost to asset ratio is 33.61 percent. In other words, an average failed bank during 1986-2007 has a negative market value of equity that is about one-third of the book value of its assets.

The first-stage regression results show that the FDIC prefers the P&A method when new business establishments are on the rise and the failed bank has a large branch network. One interpretation of these findings is that since the P&A method allows the financial services of the failed bank to continue, the FDIC ensures that depositors and small business owners are minimally affected by a bank failure. One notable finding is that the likelihood of a P&A increases as the failed bank comes from a relatively lower income location.

As expected the characteristics of the failed bank also influence the choice of the resolution method. While poor asset quality increases the likelihood of Deposit Payoff method, higher levels of core deposits and asset size increases the likelihood that the bank will be resolved with the P&A method. One related finding is that when the

banking industry is in distress, which is indicated by a higher failure rate, a failed bank is more likely to be resolved using a P&A method. Furthermore, the net loss on assets and direct expenses are higher when the banking industry is in distress. These results indicate that the increased difficulty in finding a viable bidder in tough times increases the costs of resolutions.

Controlling for these factors, the second-stage regressions show that the difference in the cost of asset disposition between P&A and Deposit Payoff disappears. In other words, a bank that was resolved by P&A would have experienced a similar net loss on assets if the Payoff method was used. Therefore, we have no evidence that the value of the assets is less when retained by the FDIC. This finding is contrary to the previous research results that find P&A to be a less costly method (Bovenzi and Murton (1988), Brown and Epstein (1992) and James (1991)). We attribute the difference in findings to the lack of controls for the FDIC's selection decision.

In contrast, the P&A method proves to be a less costly method in terms of direct expenses. The P&A method also results in a shorter time in resolution. Thus, although the P&A decision does not lead to a decrease in the cost of liquidating failed bank assets, it provides significant savings in direct expenses and shortens the resolution process.

Our regressions also control for variation over time. We find that the FDIC was more likely to resolve a bank with the P&A method after the passage of the Federal Deposit Insurance Corporation Improvement Act of 1991 (FDICIA). However, this difference is not significant. In contrast, during the post-FDICIA period loss on assets is significantly lower. We attribute this result to the prompt corrective action requirement of the FDICIA. Another interesting finding is that direct expenses are marginally higher and time in receivership is shorter post-FDICIA. These results can also be taken as evidence supporting the argument that the FDICIA improved the failure resolution process. We obtain these results controlling for bank specific, industry, and macro factors.

The remainder of this paper is organized as follows. Section 2 describes the characteristics of the resolution methods and provides information on the number and types of failures over the 1986 to 2007 period. Section 3 describes our definition of resolution costs and Section 4 provides a univariate analysis of the components of these

costs. In Section 5 we describe the empirical model of the resolution choice and the determinants of resolution costs. Section 5 presents the empirical results. Section 6 provides the analysis of the time in receivership and Section 6 concludes.

## **II. Bank Failures and Resolution Methods**

Banks can fail for a variety of reasons including undercapitalization, liquidity, safety and soundness, and fraud. The chartering agency has the authority to terminate the bank's charter and appoint FDIC as receiver. The following chartering agencies have the authority to essentially close a bank: the Office of the Comptroller of the Currency (OCC), Office of Thrift Supervision (OTS), and the state banking authorities. For insured federal savings associations and national banks, the FDIC must be appointed receiver. In the case of state-chartered banks that are members of the Federal Reserve System, the state banking authority may appoint the FDIC receiver. In 1991, Congress gave FDIC the power to appoint itself as receiver for state chartered insured depository institutions.<sup>3</sup>

The FDIC can resolve a failed bank primarily in two ways—deposit payoffs and purchase-and-assumption (P&A). The FDIC also has the option of providing open-bank assistance, but this alternative was not used during the 1992-2007 period. One important difference between the resolution of a bank and the bankruptcy of a non-financial firm is that in a bank resolution the receivership must market the liabilities of the failed institution in addition to its assets. An acquirer may be willing to pay more for the liabilities than their face value because the failed bank's deposit gathering franchise provides value. Therefore, the receivership has the responsibility to obtain a fair price not only for the assets of the failed institution but also for the franchise value of the failed bank during the resolution process.

Such a dual problem provides the main distinction between the deposit payoff and P&A methods. In the former the FDIC liquidates the assets of the failed bank and pays off the depositors directly. Thus, the franchise value of the failed bank is destroyed. The FDIC uses the Deposit Payoff approach in cases where there are no bidders for a P&A or

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<sup>3</sup> The FDIC has elected to do so on one occasion—in the failure of Meriden Trust & Safe Deposit Company in Meriden Connecticut on July 7, 1994.

the bids results in a resolution that is not less costly than liquidation. Two methods are employed to pay off depositors. In a deposit payout (PO), the FDIC pays off the insured depositors in cash. The uninsured depositors and general creditors file claims against the receivership and they are paid if funds are available as the assets are liquidated. In an insured-deposit transfer (IDT), insured deposits and secured liabilities are transferred to a healthy institution, along with an equal cash payment from the FDIC. This method allows uninterrupted service to insured depositors. We group these two types of resolution methods together and call them deposit payoffs.

In a P&A transaction, an approved acquiring bank purchases all or part of the failed-bank's assets and simultaneously assumes all or part of the failed bank's liabilities. The acquirer generally bids separately for assets and deposits. Because the deposit gathering function of the failed bank is transferred to the acquirer, the acquirer's bid for the liabilities may reflect the franchise value of the failed institution. In some cases the acquirer receives most or all of a failed bank's assets and deposits in return for a one-time payment from the FDIC. These transactions are termed as Whole Bank P&A transactions. The acquirer's bid reflects the value of the deposit franchise less expected loss in value on the book value of the assets.

The last category of failure resolution methods is open-bank assistance (OBA). Here the FDIC does not establish a receivership but provides financial assistance to an open institution to prevent it from failing. Generally, the FDIC replaces the existing bank management. A major criticism of OBA is the shareholders of the failing institution benefit from the assistance provided by the FDIC. In fact, the Federal Deposit Insurance Corporation Improvement Act of 1991 (FDICIA) prohibits the use of the deposit insurance fund to benefit the shareholders or other creditors of an institution that has failed or is in danger of failing. However, if the Board of Directors of the FDIC, the Board of Governors of the Federal Reserve System, and the secretary of the Treasury, in consultation with the president, determine the least-costly approach would have serious adverse effects on economic conditions or financial stability, then there is an exception to this rule. This is referred to as the "systemic risk exception".

Panel A of Table 1 shows the number of banks that were insured by the Bank Insurance Fund (BIF) and the Deposit Insurance Fund (DIF) and failed from 1986 to

2007.<sup>4</sup> There are in total 1,244 bank failures during 1986 to 2007, where each bank within a holding company is treated as a separate observation. These failures do not include the 317 failed institutions that were insured by Federal Savings and Loan Insurance Corporation (FSLIC), 747 failed institutions that were resolved by the Resolution Trust Corporation, and 6 failed institutions that were insured by the Savings Association Insurance Fund (SAIF). We exclude these institutions because our analysis relies on the FDIC internal accounting records, which are readily available for the BIF- and DIF-insured institutions.

During the sample period we observe that the number of bank failures peaks in 1988 and dramatically drops after 1992. Indeed, during 2005 and 2006 there were no bank failures. In terms of failures by resolution type we observe in Panel A of Table 1 that out of 1,244 failures between 1986 and 2007, 236 cases (19 percent of the failures) are deposit payoffs and 1,008 cases (81 percent of the failures) are P&A transactions including whole-bank transactions. IDT proves to be the preferred method when the deposit payoff approach is used. Whole-bank transactions lose popularity following 1991.

Panel B of Table 1 compares our sample with the universe of BIF- and DIF-insured bank failures summarized in Panel A. Our sample includes 97.5 percent of the total failures (1,213 failures of the total 1,244) that were placed under a receivership for resolution. We exclude 31 institutions for two reasons: first, because either their resolution process was not completed by the end of 2007 (except for five institutions) or, second, because these institutions were trust banks and were not taking deposits or making loans at the time of failure.

We do one last adjustment. In our sample, 132 banks of the 1,213 failures belong to eleven bank holding companies. In our analysis we consolidate these failures under their respective bank holding companies and our resulting sample size is 1,092.

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<sup>4</sup> The Financial Institution Reform and Recovery Act (FIRREA) of 1989 created the Saving Association Insurance Fund (SAIF) to replace the Federal Savings and Loan Insurance Corporation (FSLIC) as the provider of deposit insurance for thrift institutions. The SAIF was administered by the FDIC separately from its bank insurance fund, called the Bank Insurance Fund (BIF). The Federal Deposit Insurance Reform Act of 2005 merged the SAIF and BIF into one insurance fund called the Deposit Insurance Fund (DIF). DIF covered the three failures that occurred during the 2005 to 2007 period.

## **INSERT TABLE 1 HERE**

### **III. Components of Resolution Costs**

In addition to the FDIC General Ledger (GL) we use information from the Failure Transactions Database (FTDB), which is an electronic database that is maintained by the FDIC's Division of Insurance and Research. Among other data items, this database houses the estimated cost produced by the Division of Finance which was previously published as the Failed Bank Cost Analysis (FBCA).<sup>5</sup>

Table 2 provides the components of the total resolution costs as a percentage of the assets at failure. A common definition of resolution cost is the difference between the liabilities of the failed bank and the market value of its assets net of expenses incurred by the receivership. Alternatively, we interpret resolution costs as the market value of equity of the failed bank at time of resolution. This interpretation allows us to link the book value of equity of the failed bank at time of failure to its market value at the end of the resolution process. In this framework, the gain or losses on the disposition of assets and liabilities and receivership expenses adjust the book value of equity to its market value. We organize the table to reflect this definition on a discounted basis

We use the following procedure for discounting. We match a yield curve to each failure based on the month that the bank failed and then fit a cubic spline to each yield curve to calculate a yield for each month along the yield curve. We use these smoothed yields to discount each of the monthly cash flows. Table 2 provides the undiscounted values for Total Resolution Costs.<sup>6</sup>

We start with the book value of equity on the last Call Report. This value differs from the book value of equity at the time of failure for two reasons. First, the book value of equity changes over time and the last Call Report is filed before the time of failure. Second, the FDIC reverses the loan loss reserves before recording the book value of equity at failure on the receiverships books.

The capital ratio at failure, defined as the book value of equity as a percent of book value of assets at failure, varies considerably in the sample. We have institutions

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<sup>5</sup> The estimated cost from the Division of Finance can also be found on the FDIC website in the Historical Statistics on Banking (<http://www4.fdic.gov/HSOB/index.asp>).

<sup>6</sup> Bennett and Unal (2009) provides further details on the discounting process.

that are closed with book value equity ratios as high as 26 percent (13.08 percent when loan loss reserves are included). However closing banks with high positive book value of equity at failure is a rarity—only nine percent of our sample had book value of equity ratio above 8 percent at time of closure. In contrast, we observe a larger percentage of banks failing with negative book value of equity ratios. Indeed, 34 percent of our sample has zero or negative book value of equity at time of closure. In one case a failed bank had a negative book equity ratio as large as 56 percent.

### **INSERT TABLE 2 HERE**

The next item on the table is the Net Loss on Assets. This item reflects the sum of Gain and (Loss) on Assets and the Premiums Paid to (Received from) Acquirer. The FDIC GL has a monthly income statement and balance sheet for each failed-bank receivership. The receivership income statements on the FDIC GL records the gain (or loss) on the disposition of assets as the difference between cash collected and the book value of asset of the failed bank. We adjust this number for net income or loss from assistance agreements, net loss sharing expenses that arise from agreements between the receivership and acquirer, interest and fees that are earned on the assets in liquidation during the resolution process and other miscellaneous income, and the interest expense paid to the FDIC before we arrive at the loss on assets.

The other components of the Net Loss on Assets are the premiums paid to (received from) acquirers. The premium paid to an acquirer can reflect two types of payments. The receiver may pay a financial institution to administer depositor payoff in an insured deposit transfer transaction.<sup>7</sup> The bulk of the premium paid comes from the whole bank transactions. In these cases the bidder typically requires a one-time payment to assume the assets and deposits of the failed bank. Hence the premium paid by the receivership in whole bank transactions can reflect the loss on assets net of franchise value.

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<sup>7</sup> This does not frequently occur—in our sample the receivership paid a premium in only seven out of the 155 IDT transactions. In the remainder of the IDTs the receivership received a premium.

Premium received reflects the amount that the acquirer pays to the receivership to assume the deposits of the failed bank. The premium received can be used as an imperfect proxy for the franchise value of the failed bank. The proxy is imperfect because in P&A transactions the cash payment for the liabilities can be confounded by the bid for the assets. An acquirer can adjust upward or downward the premium paid for deposits depending on the estimated market value of assets, which is revealed by the FDIC to the prospective bidders.

Net Loss on Assets shows considerable variation. In one extreme case, the net loss on assets constituted 93.98 percent of the assets-at-failure on a discounted basis. In rare cases, there are gains on the Net Loss on Assets but this gain is primarily due to premiums received from acquirers.

The next two lines show the direct and indirect liquidation expenses. These expense items are akin to the bankruptcy costs of corporate failures. Direct liquidation expenses represent salaries, travel, legal, and other professional fees such as accounting and auditing fees incurred in the resolution process. Liquidation overhead is general liquidation expenses from overhead associated with the FDIC's liquidation activities that cannot be charged to specific assets or receiverships. The allocation of these expenses to individual receivership is challenging. The FDIC has changed the types of expenses included and the allocation method of the indirect expenses to the receiverships over our sample period. Currently, the FDIC uses a service costing approach. Under the service costing approach, the costs are allocated to the receivership by charging the receivership for the services provided by the FDIC using market-based prices for the services. For example, indirect expenses can include a flat rate for each claim that is processed or hourly rates for investigating legal matters pertaining to the receivership.

Total Resolutions Costs are the sum of the cost components and represent the losses that incur to all of the claims on the receivership, including losses to the deposit insurance fund represented by claims held by the FDIC. We observe significant variation. While at one extreme total resolution cost (market value of equity at termination) is a positive number, representing a gain of as high as 8.61 percent of the assets at failure, at the other extreme this ratio is negative 134 percent.

The last line in Table 2 shows the losses to the FDIC. The FDIC publishes its share of losses (cost to the insurance fund) on an undiscounted basis on their website. Bennett and Unal (2009) show the reconciliation of the total resolution costs and the cost to the insurance fund. We borrow the last two lines in Table 2 from Bennett and Unal (2009). We observe that on average the cost to the insurance fund is 9.22 percent less than the total resolution cost. Much of this difference reflects costs borne by shareholders, bondholders, uninsured depositors, and trade creditors. However, because the costs to the FDIC is not expressed in present value terms we cannot attribute the entire difference to losses borne by other claimants.

#### **IV. Univariate Analysis of the Components of Resolution Costs**

Table 3 provides the breakdown of the components of resolution costs in terms of resolution methods, size, and legislative periods. We present these components on a discounted basis and in terms of a percent of total assets at failure.

***Resolution Costs by Resolution Method:*** In Panel A we show results for resolution methods. The first observation is that average capital ratios at failure do not vary between deposit payoff and P&A methods. The mean (median) capital ratio at failure is 1.47 (1.99) percent for deposit payoffs and 1.39 (1.81) percent for P&As. They are not, however, statistically different from each other.

The deposit payoff method has significantly higher net loss on assets and higher direct receivership expenses than the P&A method. The six percent difference (on average and median) in net loss on assets between these two resolution methods is statistically significant. In addition, the mean direct receivership expense ratio for deposit payoff is 4.94 percent compared to 3.16 percent for P&A transactions and the difference in mean (median) are highly significant. These results demonstrate that P&A method generates considerable savings, of course, as long as a viable bidder exists.

However, at this point, we cannot assess whether this difference exists because a P&A transaction is inherently less costly, or if characteristics of banks that the FDIC chooses to resolve with a P&A transaction are different than those that are resolved with

a Deposit Payoff. The objective of our multivariate analysis is to sort out these two possible effects.

In addition to direct expenses bank failure resolution requires additional expenses, such as overhead expense. This is an economically significant addition since it more than doubles the direct expense ratio in the case of deposit payoffs and P&As. Studies that examine the bankruptcy costs of non-financial firms ignore overhead costs of the courts, which are borne by the taxpayers. For failures of financial firms, FDIC recognizes overhead costs and they are reflected in the receivership expenses.

In summary, both deposit payoffs and P&A transactions start with failed banks that have similar mean and median capital ratios. The net loss on assets ratio for P&As is lower than for deposit payoffs and the premium received for the franchise value is higher for the P&As. In addition, the Deposit Payoffs suffer from significantly higher direct receivership expense ratios relative to P&As. These factors result in total resolution costs that are significantly lower for P&As.

The relationship we find between total resolution costs and resolution types is similar to Bovenzi and Murton (1988) and Brown and Epstein (1992) and James (1991), who find that loss rates are higher for deposit payoffs than for P&A transactions.

***Resolution Costs by Size:*** The cost of resolving a failed bank can depend on size for a number of reasons. First, there can be economies of scale in asset and liabilities marketing. The receivership can construct, market, and service asset pools more efficiently when asset size is larger. Second, the types of assets that small banks hold could be different than large banks generating differing liquidation costs. Empirically, it is well known that a strong negative correlation exists between bank asset size and resolution costs as a percent of assets (FDIC (1998), p. 100).

Panel B confirms these observations. We classify total resolution costs by three size categories: small, medium, and large. We define small institutions as those with total assets at failure less than or equal to \$100 million. Medium institutions are those with more than \$100 million and less than or equal to \$1 billion of total assets at failure and large institution are those with more than \$1 billion of total assets at failure. These cutoff points are consistent with those used in the FDIC's Quarterly Banking Profile.

The results show that small banks enter the failure state with lower book value of equity ratios. The net loss on assets exhibits an inverse relationship with size. Direct and total receivership expense ratios are also lower for larger banks. As a result, we find total resolution costs as a percent of book value of assets at failure decline with asset size confirming the findings of earlier studies.

***Resolution Costs by Legislative Period:*** During the 1986 to 2007 period the banking industry has gone from deep crisis into recovery, and eventually prosperity. Two pieces of legislation, FIRREA and FDICIA, passed by the Congress to deal with the banking crisis of the 1980s marked this period. Appendix A provides an outline of how these two major pieces of banking legislation have affected the failure resolution process.

Most notably, FIRREA allowed the FDIC to offset losses via the cross guarantee provision. This clause enables the FDIC to recover some of its resolution costs by assessing these costs against the solvent insured institutions in the same holding company.

Two provisions of the FDICIA had profound impact on failed bank resolutions. These were prompt corrective action (PCA) and the least-cost resolutions. The PCA provision requires the FDIC to take mandatory actions for critically undercapitalized institutions, which are banks with tangible capital ratio of two percent or below. The intent of this provision is to require distressed banks to be closed before they become severely distressed. Hence, we expect the capital ratios of the failed banks post FDICIA to be significantly higher than the capital ratios of the failures pre-FDICIA.

The second important provision requires the FDIC to use the method that is least costly to the deposit insurance fund(s)—otherwise referred to as the Least Cost Test. This provision requires the FDIC to resolve failed banks in a manner that is least costly to the deposit insurance fund. Note that this requirement may or may not translate into lower total resolution costs, which include costs borne by claimants other than the FDIC. However, since the FDIC is typically the largest claimant class, we expect total resolution costs to be lower in the post-FDICIA era.

We split the sample into separate legislative periods to capture the time-series characteristics of the resolution cost components. In particular, we look at the period

before FDICIA and after FDICIA. The FDICIA period starts in January 1992. Panel C shows the univariate statistics for each legislative period.

The first interesting observation pertains to the capital ratio. The average book value of equity at the failed institutions shows an increasing trend. The mean (median) capital ratio of the pre-FDICIA period is 0.95 percent (1.35 percent), this ratio increases significantly to 3.83 percent (4.25 percent) for the failures during the FDICIA period. This result is consistent with the objectives of PCA and shows that distressed banks were closed before they became severely distressed.

In contrast, we observe an opposite trend for the net loss on assets. The mean (median) net loss on assets ratio declines from 23.13 percent (22.17 percent) in the pre-FDICIA period to 12.33 percent (10.81 percent) during post FDICIA period. This positive development is also augmented by increase in premiums received from acquirers. In terms of receivership expenses we do not find any significant changes in direct or indirect expenses.

As a result, we observe that the mean and median the total resolutions cost ratio has decreased over these two periods. In particular, during the post-FDICIA period the mean (median) total resolutions cost ratio is 22.79 percent (21.17 percent) on a discounted basis. In contrast, in the pre-FDICIA period the mean (median) cost ratios are 35.65 percent (22.79 percent).

The total resolution cost ratio for the pre-FDICIA period is similar to the cost ratios reported in Bovenzi and Murton (1988), Brown and Epstein (1992), and James (1991), who find that the loss on assets is approximately 30 percent of failed-bank assets during the banking crisis of the late 1980s. These studies use assets at failure as a base to calculate the cost percentage and ignore assets discovered post failure.

## **V. Modeling the Determinates of the Loss Rate**

Previous research that investigates the determinants of resolution costs in bank failures typically models the loss rate as a function of bank specific variables and factors that reflect the health of the banking industry. In these studies definition of loss varies. Bovenzi and Murton (1988), Brown and Epstein (1992), and James (1991) analyze the net loss on assets as defined in Table 2. All three studies account for the time value of

money by discounting the current dollar cash flows to the failure date. In contrast, Osterberg and Thomson (1995) and the more recent studies of McDill (2004) and Schaeck (2006) model the resolution cost to the FDIC insurance fund. This value is also shown in Table 2. Consequently, these later studies model a value that does not account for the time value of money. Furthermore, the value includes both direct and indirect receivership expenses, where the latter is an allocated overhead expense.

Our focus is to examine the effect of the resolution-method choice on cost of failure resolution. James (1991) points out that there can be two reasons why costs under the two methods could differ. First, in a Deposit Payoff the franchise value of the bank is destroyed when assets are liquidated. Hence, recovery rates are lower. Second, assets might be worth less in the hands of the FDIC because the FDIC is inefficient. Thus, recovery rates could be higher when P&A is used.

Therefore, we study the determinants of Net Loss on Assets (NETLOA) and identify whether or not one resolution method is inherently cost effective over the other one in the disposition of the assets. The model is as follows:

$$L_i = X_i\beta + \gamma C_i + \varepsilon_i \quad (1)$$

$L_i$  is the net loss on assets ratio of failure  $i$  and  $X_i$  is a vector of variables that determine the loss rate. The variable  $C_i$  takes the value of one if P&A method is used and zero if Payoff is used. The effect of the resolution method on the loss outcome is captured by the  $\gamma$  parameter. In an ordinary least squares estimate of equation (1) the parameter  $\gamma$  reflects both the procedural effectiveness of the P&A method and the characteristics of the failed banks selected for this method. Unless we control for the selection, the parameter estimate is biased.

To isolate the effects, we use a “treatment effects” model to estimate jointly the outcome equation given in equation (1), which captures the effect of the resolution method choice on the costs, and a treatment equation given in equation (2), which reflects factors that affect the choice of resolution method.

$$C_i = V_i\alpha + \mu_i \quad (2)$$

We estimate the probability that the P&A method is used using probit as shown in equation (2), where  $V_i$  is a vector of variables influencing this decision. The error terms  $\varepsilon_i$  from equation (1) and  $\mu_i$  from equation (2) are assumed to be bivariate normal and the covariance term equals zero if equations (1) and (2) are independent.

We follow Maddala (1983) and use a two-stage estimation strategy. First we estimate the probit equation. From this estimation we obtain a hazard for each observation. In the second stage, we include this hazard variable as additional regressor and estimate the outcome equation (1). Maddala (1983) shows that this strategy produces consistent estimates of the variance-covariance matrix for  $\varepsilon_i$  and  $\mu_i$ .

#### **A. Cost Equation**

The covariates for equation (1) are the bank and industry specific variables. In terms of bank specific variables, we start with the book value of equity of the failed bank as a percentage of assets at failure (BVERATIO) and select variables that adjust book value to its market value. Appendix B provides a description of the variables and the data sources.

Bank managers of distressed banks often do not write off loans that have gone bad and continue recording income from such assets as accruing. A measure of such tendency is the income earned but not collected variable (EARNEDINC) reported in the Call Report. We include the value of this variable the quarter before failure, as a percent of total assets at failure, in the regressions. The next two variables are the level of non-performing assets (NPA) and other real estate owned (ORE) by the bank the quarter before failure as a percentage of assets at failure. This latter variable reflects real estate that the bank ends up owning due to foreclosure.

An additional control for the riskiness of the bank assets is the brokered deposits (BROKER) the quarter before failure as a percentage of assets at failure. As the bank approaches to failure managers raise insured deposits through the brokers by offering higher than market rates. Thus, the existence of brokered deposits can signal high-risk low-quality assets.

In a report prepared for the president and Congress in July 1993, a national commission found fraud and misconduct to be an important cause of failures in the 1980s (National Commission on Financial Institution Reform, Recovery, and Enforcement, 1993). The same report also argued that losses due to fraud constituted a significant portion of total losses. No prior academic research exists identifying the contribution of fraud to failure resolution costs. The primary reason for this lack of research is the difficulty of identifying fraud. A database compiled at the Division of Insurance and Research at the FDIC that captures the causes of failure has the potential to fill this void. However, this database only includes a subset of our sample. Instead, following Osterberg and Thompson (1999), we use loans to insiders (INSIDER) as a percentage of assets at failure as a proxy for fraud.

A factor that reduces the cost of a failure is the existence of the franchise value of the bank. It is customary to use core deposits as a proxy for franchise value. We follow previous research and include the ratio of core deposits to assets at failure (CORE) in the regressions. We also control for asset size using the natural logarithm of the assets at the failed bank (LOGASSET) and the square (LOGASSETSQ). We add this latter variable to capture nonlinearity between asset size and costs.

Finally, we control for the health of the industry by including the number of failed banks as a percent of all banks in the state at time of failure (FAILRATE).

## **B. Choice Equation**

To choose appropriate covariates for equation (2) we need to understand the factors affecting the FDIC's choice of resolution method. The first determinant is the asset quality considerations. James (1991) points out that differences in asset values can arise because of differences in the quality of assets liquidated under the two resolution methods. In particular, the FDIC can choose to resolve the worst quality assets under the Deposit Payoff because it has a comparative advantage in liquidating these assets. Under such circumstances finding the P&A method to be less costly is not an indicative of the efficiency of this method. Therefore, it is necessary to control for the impact of the asset quality on the choice of the resolution method.

The cost minimization objective is reflected in the FDIC's least cost analysis. Prior to the FDICIA in 1991, the FDIC could choose any resolution transaction that was less costly than a deposit payoff. During this time period other considerations such as the impact on the community played a role. The FDIC also considered implications of certain resolution methods on banking stability. Indeed, the resolutions handbook of the FDIC lists the economic conditions of the institution's market area as one of the factors FDIC considers in determining the resolution structure (FDIC, 1998, p.7). For example, a deposit payoff might be discouraged if the availability of local banking services in smaller communities is adversely affected. Beck, 2003, also argues that in resolving a bank failure the regulator considers the minimization of the disruption to the community.

After FDICIA, however, cost minimization became the stated goal in failure resolutions. In this respect, the FDIC put procedures in place that required acceptance of the "least cost" bid. In this new regime, the FDIC needs to choose the resolution alternative in which the total amount of the expenditures is the least costly to the insurance fund. Thus, the community disruption objective seems to have lost the role it played during the post-FDICIA period.

We use the same variables in resolution choice equation and the cost equation to control for the impact of asset quality differences on the choice of resolution method. We propose the following variables to capture the objective of avoiding community disruption. The first one is the number of private business establishments in the year of failure., which is compiled by the Census Bureau. We use the logarithm of the number of establishments in the state (LOGESTABLISH). A higher level of business establishments would increase demand for banking services and would put pressure on the FDIC to resolve the failure through a P&A method so that bank liquidation would have minimal impact on the business activity.

The number of branches (BRANCH) the failed bank has also has similar effect. Resolving a bank failure through a deposit payoff would have a larger adverse community impact if the bank has a large branch network. Hence, P&A method could be the preferred method under such circumstances.

Finally, personal income level of the community that the failed bank is serving can influence the resolution-method choice. Communities with higher income may have

better alternatives for their banking needs if the local bank fails. Hence, the FDIC could be reluctant to resolve failures through deposit payoff at lower income communities. To capture this effect, we use the ratio of personal income in the state of the failed bank as a ratio of the US personal income quarter of failure (PIRATIO).

These variables (LOGESTABLISH, BRANCH, and PIRATIO) are excluded from the cost equation and serve to identify the parameters.

**INSERT TABLE 3 HERE**

## **VI. Empirical Results**

Table 4 provides mean, median, and standard deviations of the variables used in the regression analysis. We should note that net loss on assets (NETLOA) enters the regressions as a positive number. This is in contrast to the data reported in Tables 2 and 3, where NETLOA is expressed as a negative number. We do not have complete data for the INSIDER variable, and in two cases the variables LOGESTABLISH and PIRATIO are missing because the failures occurred in the District of Columbia and Puerto Rico.

**INSERT TABLE 4 HERE**

We next present the results of our multivariate analysis. We start with the estimation results of the probit regression that models the resolution-method choice. In our second stage regressions we control for the endogenous resolution-method choice and examine the determinants of the net losses on assets, direct costs, and the time to resolve failures.

### **A. Determinants of the Choice of Resolution Method**

Table 5 shows the probit results that describe the choice of resolution method. In column 1 we present the results for the full sample period. In columns 2 through 4 we control for changes over time. We use the passage of the FDICIA as the break point

because December 1991 nicely breaks our sample period into crisis and prosperity regimes. It also allows us to examine resolution method choice and costs in the current regulatory regime. In the full sample regressions, we control for this possible change over time by introducing a binary variable PREFDICIA that takes the value of one for failures that occurred in or before December 1991.

Among the cost factors, we observe that income earned but not collected (EARNEDINC) is significant and negative in the full sample estimates, indicating that the FDIC is more likely to choose the deposit payoff method the higher the bank's uncollected income. Quite often income earned but not collected is an indicator of a higher level of problem assets at the bank. To hide problem assets, management may book income on a nonperforming loan to prevent it from being classified as past due or non-accruing. Hence, higher EARNEDINC is an indicator of lower asset quality at the institution suffers which reduces the probability of having a viable bidder for the failed bank. This result in turn reduces the probability that a P&A will be the resolution method. A negative sign for EARNEDINC is consistent with such an explanation. However, when we look at the sub-period results we observe that this effect is more influential in the pre-FDICIA period. During this crisis period the intensity of recording income that was ultimately uncollectible was high enough that it became a significant deterrent for the FDIC to choose a P&A method on average.

In contrast, other asset quality variables, non-performing assets and other real estate owned, and the leverage ratio (BVERATIO) do not appear to be significant determinants of the resolution method choice.

However, it appears that the liability characteristics of a failed bank influence the type of resolution. The existence of a higher level of core deposits increases the likelihood of a P&A method in both the full period and the pre-FDICIA period. This finding is plausible because the likelihood of finding a bidder for the bank increases with higher core deposits. An unexpected result is the significance of core deposits with a negative sign during the post-FDICIA period. This is an indication that the increase in deposit base in the banking system in general during the FDICIA period may have eliminated the importance of core deposits in general. On the other hand, brokered deposits have the opposite effect. High levels of such funding source increases the likelihood of choosing

deposit payoff as the resolution method. Increased use of brokered deposits could be an indication of a less valuable deposit franchise because the bank needed to obtain funding outside its core funding base. This relation holds, albeit at lesser significance, in the sub-periods as well as during the full period

Larger asset size seems to increase the likelihood of a P&A but this effect increases at a decreasing rate. During the post-FDICIA period the size effect ceases to be a significant determinant of the resolution-method choice.

FAILRATE is a variable that captures the health of the industry. The results in Table 5 show that higher level of industry stress are associated with higher likelihood that a bank will be resolved with a P&A. This result shows that the FDIC is reluctant to liquidate a bank (use a Deposit Payoff resolution method) when the industry is weak. As we show below, such a tendency naturally increases asset disposition costs, which is picked up by our cost estimates.

#### **INSERT TABLE 5 HERE**

In column 2 we observe that the probability of choosing the P&A method is lower during the pre-FDICIA period compared to the FDICIA period everything else equal. However, this difference is not statistically significant.

Columns 3 and 4 show model estimates for pre-FDICIA period and post-FDICIA period separately. The full sample results show that the instruments, LOGESTABLISH, BRANCH, and PIRATIO are highly significant. More business activity and a larger branch network increase the likelihood of a P&A method. In contrast, in regions where personal income is higher FDIC is more inclined to choose a deposit payoff method to resolve a failure. These findings indicate that the FDIC considers the impact on the community of a bank failure resolution in addition to cost minimization. Alternatively, this finding can be interpreted as cost minimization objective not being in conflict with the community disruption objective.

However, when we examine the sub-period results we observe that these effects are more pronounced during the pre-FDICIA period. The number of branches variable is no longer significant and LOGESTABLISH is significant only at the 10 percent significance

level. However, the PIRATIO keeps its high significance level during the post-FDICIA period. This behavior is an indication that the FDIC chooses a resolution method to lessen disruption in lower income areas.

### **B. Determinants of Net Loss on Assets**

Table 6 shows the results for the second stage regressions. We first present results for the ordinary least squares (OLS) estimates of equation (1). Our focal variable is the RESMETHOD which is a binary variable that takes the value of one if the method is P&A and zero for the payoff method.

We observe that resolutions under the P&A method are on average 4.5 percent less costly than the Payoff method. However, this OLS estimation cannot distinguish whether the difference is caused by the resolution method or by the selection of the resolution method by the FDIC.

In columns 2 through 5 we control for the selection component both during the full sample and the sub-periods. In these cases, we find that RESMETHOD is no longer statistically significant. Since this coefficient measures the cost differential between P&A and Payoff, this finding provides evidence that the P&A does not intrinsically save costs but failed banks that are chosen to be resolved by this method are “better” banks. In other words, we find evidence that a bank that was resolved by P&A would have experienced a similar net loss on assets if it was resolved with the Payoff method holding the factors that went into the selection of the resolution method constant.

### **INSERT TABLE 6 HERE**

This finding is in contrast to James (1991), who argues that the value of a failed bank’s assets is worth less in the hands of FDIC than the private sector. He provides evidence consistent with our findings in column 1 of Table 6. However, James (1991) does not adequately control for the selection bias in the cost equation.

The remaining coefficient estimates have plausible interpretations. While higher book-value-capital banks incur fewer losses, factors that indicate a lower asset quality

such as brokered deposits, uncollected income, non-performing assets, and other real estate owned lead to higher loss on assets.

The existence of higher level of core deposits, on the other hand, leads to lower net loss on assets. This finding is consistent with the findings of prior research that uses core deposits as a proxy for the franchise value of the bank.

Finally, we observe that net losses on assets are greater when the industry is in distress—the coefficient on FAILRATE is positive and significant. When we consider the effect of FAILRATE on the resolution-method choice presented in Table 5 we see a possible explanation for resolution costs to be higher when failure rates are high. In Table 5 we show that the FDIC is reluctant to resolve a bank failure through deposit payoff (liquidation) when the failure rates in the industry are high. This is possibly driven by the objective to minimize the disruption to the financial services. However, when the industry is in distress, it becomes increasingly difficult to find viable bidders causing the FDIC to make higher concessions when it finds a viable bidder. This finding is consistent with the argument made by Schleifer and Vishny (1992) that recovery rates are lower when the industry of the failed firms is in distress.

In column 3 we introduce a binary variable to control for the legislative period. The coefficient for PREFDICIA is highly significant and shows that the net loss on assets is 3.69 percent higher during the pre-FDICIA period compared to the FDICIA period holding everything else equal.

### **C. Determinants of Direct Expenses**

Table 7 presents regression estimates that examine the determinants of the direct resolution expenses as a percent of assets at failure. The first column shows that RESMETHOD is negative and statistically significant indicating that P&A costs less to resolve compared to the Payoff method. Again, this estimate reflects both the effectiveness of the method and the selection decision.

The results in columns (2) through (5) control for selection. We observe that RESMETHOD maintains its significance both during the full sample and the sub-periods and proves to be an inherently less costly method in terms of direct expenses. This finding is in contrast to the observation related to the net loss on assets. While P&A

method is indistinguishable from the Payoff method in terms of asset disposition, it proves to be an inherently effective method as far as direct costs are concerned.

### **INSERT TABLE 7 HERE**

Other coefficient estimates uncover interesting relationships. While nonperforming assets and other real estate owned (foreclosed real estate) increase direct costs attached to the disposition of assets, the size of the failed bank does not have any significant effect on direct costs. These results are quite robust across the full sample and sub-period specifications.

Column (3) controls for the legislative periods. In parallel with the reduction in losses on asset disposition we observe that direct costs also reduced during the FDICIA period, but reduction is marginally significant.

## **VII. Time in Receivership**

To our knowledge, past research has not examined the time in receivership for failed banks. In Table 8, we provide statistics for the time in receivership. On average a failed bank remains in receivership for five years in our sample of 1,213 institutions. We observe that the average time in receivership is similar across the legislative period but the median time in receivership drops in the FDICIA period.

In the second panel of Table 8, we observe that on average banks that were resolved using a deposit payoff remained in receivership significantly longer than those resolved using a P&A. When we classify time in receivership by legislative period and resolution type, as shown in the third panel of Table 8, we observe that the time in receivership generally falls in the post-FDICIA period across both resolution methods.

Table 9 presents the results of the multivariate regressions where the dependent variable is the time in receivership. In Column 1 we report the OLS estimates. In terms of resolution method, results show that the coefficient of RESMETHOD is significant and negative both in the OLS specification and treatment regressions except for the FDICIA period. Since we control for the selection bias in the treatment specifications this finding

shows that P&A method is inherently results in a shorter time in receivership holding everything else constant.

We observe that foreclosed real-estate that the failed bank owns (ORE) significantly increases time in receivership. This finding, along with the findings shown in Table 6 and 7, show that these assets result in higher costs and a longer time in receivership. Furthermore, the results indicate larger institutions stay in receivership longer.

In Column 3 we introduce the legislative time dummy. The pre-FDICIA period failures have significantly longer time in receivership relative to the FDICIA period holding everything else constant.

In summary, the P&A is not inherently less costly but inherently spends less time in receivership. This result is consistent with receiving an appropriate market value of the assets in a P&A bidding process. The liquidation of the assets by the FDIC in a payoff transaction does not result in higher losses on assets because in a P&A transaction we receive compensation for the losses in line with what it would cost the FDIC to liquidate. However, there are higher direct costs associated with a payoff. Furthermore, there may be additional welfare costs to having the FDIC rather than the private sector liquidate the assets that are not captured in our cost measures.

### **VIII. Robustness Checks**

James (1988) finds a positive relationship between the book value of equity and the costs of a resolution. Our results indicate the opposite relationship—when an institution has higher book value of equity then the pre-expense losses on assets are lower (Table 6). The book value of equity does not have a significant effect on direct expenses (Table 7). Our attempts to replicate the results in James (1988) using the same regression techniques and sample period failed to produce a positive and significant relationship between the book value of equity and resolution costs. We also checked the sensitivity of our results to the inclusion of the book value of equity and found that our regressions were robust to removing the book value of equity variable. Given our interpretation of resolution costs as the market value of equity, a negative relationship between the book value of equity and resolution costs is plausible. We attribute the difference between our

results and James to differences in the timeliness of the data. To obtain a reasonable sample size, James included receiverships that were not terminated and therefore his measure of costs includes an estimate of costs to the end of the receivership. We have the luxury to restrict our results to only the receiverships that are terminated, and therefore have a measure of realized losses.

In other robustness checks, we run our treatment regression using resolution costs as measured by the Failed Bank Cost Analysis (FBCA). Using this measure, we find that in both the OLS and treatment regression for the whole sample, the P&A resolution method results in lower costs. This result also holds in the FDICIA period. This result is consistent with our results. We find that pre-expense losses are not inherently lower for a P&A but direct costs are (Table 6 and 7). Recall that this measure includes direct and indirect costs and is not discounted and therefore the results using FBCA reflects a combination of our results.

We also run our regression excluding the institutions that we have grouped by bank holding company. These are the largest institutions in our sample. Our results for net loss on assets, direct expenses and year in receivership are all robust to excluding the largest institutions. We also ran the regressions on the largest 50<sup>th</sup> percentile of sample and the results are also robust.

We also lag our instruments in the resolution choice regression by a year. Our results are robust to this change as well. Finally, we include a stock market index level. This variable proves to be significant in some specifications but the results that resolution method choice has no impact on resolution costs remain unchanged.

## **IX. Comparisons with Evidence on Non-Financial Bankruptcies**

Given the characteristics of the resolution methods, we can argue that deposit payoff transactions are similar to the Chapter 7 bankruptcy process for non-financial corporations where assets of the debtor are turned over to a bankruptcy trustee. This trustee converts assets to cash and distributes the proceeds to the creditors. However, there is one important difference between non-financial bankruptcy and the resolution of failed financial institutions. The FDIC, in its insurance capacity, pays depositors and

then stands in their place to receive proceeds from the asset liquidation. Therefore, in contrast to a Chapter 7 bankruptcy, one class of claimants receives payment in full immediately from a third party (the FDIC as insurer) and the third party receives over time partial or full payment as the assets are liquidated.

P&A agreements are closer to Chapter 11 bankruptcy process where all or part of the going concern value of the firm is preserved by reorganization. The OBA approach also preserves the going concern value of the bank.

It is instructive to compare receivership expenses resulting from bank failures with estimates of direct bankruptcy costs for non-financial firms. In a recent paper, Bris, Welch, and Zhu (2006) provide estimates for Chapter 7 and Chapter 11 bankruptcies for 300 bankruptcies from 1995 to 2001. They list the components of Chapter 7 expenses as the trustee, accountant, and debtor attorney expenses. The trustee is responsible for the sale of the assets and distribution of the proceeds to the creditors. For Chapter 11 expenses, they present debtor expenses and unsecured creditors' committee expenses. They report mean (median) expenses to be 8.1 (2.5) percent of pre-bankruptcy assets for Chapter 7 and 16.9 (1.9) percent for Chapter 11 bankruptcies. Their statistical tests show that direct expense ratios are similar across Chapter 7 and 11 bankruptcy procedures.

When we compare the mean (median) direct expense ratios of 4.94 (4.65) for Deposit Payoff and 3.82 (3.58) for P&As to those reported in Bris, Welch and Zhu (2006), the following observations emerge. First, the distribution of the expense ratios in the bankruptcy sample are more skewed than those in our sample. Second, the expense ratios for non-financials pertain to asset sizes, which are much smaller than the average size of bank failures. Therefore, although it is difficult to compare the direct expense ratios for financial and non-financial bankruptcies, one can argue that costs are comparable.

Bris, Welch, and Zhu (2006) report that their sample Chapter 11 bankruptcies spent on average (median) 2.27 years (2.37 years) and Chapter 7 spent 1.94 years (1.84 years) in bankruptcy. As expected, reorganization takes a longer time than liquidation. In contrast, the failed banks take longer to resolve. When we compare our sample results with those of bankrupt firms, we observe that it takes about twice as long to resolve a bank either using deposit payoff or P&A.

## **X. Conclusion**

As we move to a new era of bank failure resolutions a complete analysis of the past resolution costs will provide a useful guidance for an efficient resolution process. Toward that end, we undertake a thorough analysis of the resolution-method choice and costs.

Our findings show that failed bank assets are worth as much in the hands of the FDIC as in the hands of the private sector. However, under the P&A method direct costs of failure resolution are lower and it takes a shorter time to complete the resolution. One of the novel findings is that the economic impact on the community that the failed bank operates is a significant determinant of the resolution method choice. FDIC avoids bank liquidations in bank-dependent communities.

Thus, it appears that the FDIC has accumulated expertise and knowledge to handle bank failures in a cost efficient manner. There is also evidence that resolution choice decision considers the interests of the local communities.

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## Appendix A

### Legislative Background

This appendix summarizes the components of FIRREA and FDICIA that have affected the failure resolution process.

#### **Financial Institutions Reform, Recovery and Enforcement Act (FIRREA) of 1989**

Although FIRREA primarily addressed issues associated with savings and loan crisis, some provisions also addressed losses to the FDIC insurance funds. In particular FIRREA:

- Added section 5(e) to the FDI Act, which prevents affiliated banks from shifting assets and liabilities and provides for cross guarantees to be established among affiliated institutions. (This provision was most notably used for the resolutions of Bank of New England in January of 1991, Southeast Banking Corporation in September of 1991 and First City in October of 1992.)
- Established a maximum amount for the claim of any receivership claimant. The maximum amount was set to the amount that claimant would have received if the institution's assets had been liquidated
- Granted the FDIC discretion to minimize loss by using its own resources to make additional payments to any creditor or class of creditors without being obligated to make the same payment to any other creditor or class of creditors.
- Authorized the FDIC to appoint itself receiver of any state depository institution (under certain criteria)
- Repealed tax benefits associated with OBA.
- Included two additional one-year extensions (for a total of 3 possible one-year extensions) on the life of a bridge bank.
- Established a standardized claims process for all federal and state chartered banks and thrifts

#### **The Federal Deposit Insurance Improvement Act (FDICIA) of 1991**

- Established prompt corrective action whereby specific regulatory actions, including closure, were legislated based the categories described in the following table.

**Prompt Corrective Action Categories**

To be considered well capitalized, an institution must not be subject to any formal enforcement action that requires it to meet and maintain a certain capital level. If the bank has a composite CAMELS rating of 1 in the most recent examination and is not experiencing or anticipating significant growth, then the leverage ratio can be as low as 3 percent for both the Adequately Capitalized and Undercapitalized categories.

	<b>Total Risk-Based Capital Ratio</b>	<b>Tier 1 Risk-Based Capital Ratio</b>	<b>Leverage Ratio</b>	<b>Tangible Equity to Total Assets</b>
<b>Well Capitalized</b>	10 percent or higher and	6 percent or higher and	5 percent or higher	
<b>Adequately Capitalized</b>	10 percent or higher and	4 percent or higher and	4 percent or higher	
<b>Undercapitalized</b>	Less than 8 percent or	Less than 4 percent or	Less than 4 percent	
<b>Significantly Undercapitalized</b>	Less than 6 percent or	Less than 3 percent or	Less than 3 percent	
<b>Critically Undercapitalized</b>				Less than 2 percent

- Established the requirement that a receiver must be appointed no later than 90 days after an institution falls to critically undercapitalized. This period can be extended twice, in 90 day increments, to protect the fund from losses.
- Required institutions to be resolved in a manner that is least-costly to the deposit insurance fund (commonly referred to as the Least Cost Test).
- Restricted the FDIC’s ability to provide OBA to the case where capital is not likely to increase without assistance and if the bank’s management is not the cause of the problems at the bank and it meets the least costly requirement.
- Limited the ability of undercapitalized or critically undercapitalized institutions to borrow from the Fed so increased likelihood of liquidity failures.
- Required FDIC asset disposition to meet certain requirements including preservation of affordable housing. The affordable housing program was established by federal appropriation starting in 1992 and ending in 1996.

**Appendix B**  
**Variable Descriptions and Sources**

<b>Description</b>	<b>Source</b>	
NETLOA	Net loss on assets, discounted, as a percent of assets at failure	FDIC General Ledger
BVERATIO	Book value of equity at failure as a percent of assets at failure	FDIC General Ledger
EARNEDINC	Income earned but not collected, quarter before failure as a percent of asset at failure	Call Report, Schedule RC-C, Item 11, FDIC General Ledger
BROKER	Brokered deposits, quarter before failure, as a percent of assets at failure	Call Report, Schedule RC-E, Item M1.b., FDIC General Ledger
INSIDER	Loans to insiders, quarter before failure, as a percent of assets at failure	Call Report, Schedule RC-M, 1.a., FDIC General Ledger
CORE	Core deposits (total domestic office deposits less time deposits over \$100,000 or more held in domestic offices), quarter before failure, as a percent of assets at failure	Call Report, Schedule RC-E, FDIC General Ledger
LOGASSET	Log of total assets at failure	FDIC General Ledger
LOGASSETSQ	Log of total assets at failure, squared	FDIC General Ledger
FAILRATE	Number of failed banks as a percent of all banks in the same state and quarter as the failed bank	Call Report, FDIC Failure Transactions Database
LOGESTABLISH	Log of the number of business establishments in the same state and year as the failed bank	U.S. Census Bureau
BRANCH	Total number of offices operated by an institution	
PIRATIO	Personal income in state of failed bank as a percent of U.S. personal income in quarter of failure	Bureau of Economic Analysis
PREFDICIA	1 if the date of failure is before January 1, 1992, 0 otherwise	
RESMETHOD	1 if the resolution method is a P&A, 0 if the resolution method is a deposit payoff	Failure Transactions Database, FDIC General Ledger
DIRECT	Direct expenses, discounted as a percent of assets at failure	FDIC General Ledger
FRAUD	1 if fraud was the primary cause of failure, 0 otherwise	FDIC Causes of Failure Database
YEARINREC	Number of years in receivership	FDIC General Ledger

**Table 1**  
**Resolution Types**

Source: Failure Transactions Database and FDIC General Ledger

We exclude assistance transactions from the total number of failures.

The sample includes all BIF-Insured banks that failed between 1986 and 2007 and were inactivated before December 2004. The sample also includes three institutions that failed in or before 1991 that were still active as of 2007. The sample excludes Meriden Trust and Safe Deposit Bank and Private Bank and Trust because they did not make loans or take deposits.

IDT=Insured Deposit Transfer;

P&A=Purchase and assumption; PA=P&A all deposits

PI=P&A insured deposits; PO=Payout

**Panel A: BIF and DIF Insured Failures, 1986-2007**

Year of Failure	Total	Deposit Payoff		P&A		
		IDT	PO	PA	PI	Whole Bank
1986	138	19	21	98	0	0
1987	184	40	11	115	0	18
1988	200	30	6	96	0	68
1989	206	23	9	132	0	42
1990	168	12	8	106	0	42
1991	124	17	4	80	0	23
1992	120	13	11	46	42	8
1993	41	0	5	6	30	0
1994	13	2	0	4	7	0
1995	6	1	0	2	3	0
1996	5	0	0	4	1	0
1997-2007	39	0	4	9	22	4
<b>Total</b>	<b>1,244</b>	<b>157</b>	<b>79</b>	<b>698</b>	<b>105</b>	<b>205</b>

**Panel B: Sample**

Year of Failure	Total	Deposit Payoff		P&A		
		IDT	PO	PA	PI	Whole Bank
1986	138	19	21	98	0	0
1987	184	40	11	115	0	18
1988	200	30	6	96	0	68
1989	206	23	9	132	0	42
1990	168	12	8	106	0	42
1991	123	17	3	80	0	23
1992	116	13	11	46	40	6
1993	39	0	5	6	28	0
1994	12	1	0	4	7	0
1995	6	1	0	2	3	0
1996	4	0	0	3	1	0
1997-2007	17	0	0	7	7	3
<b>Total Sample</b>	<b>1,213</b>	<b>156</b>	<b>74</b>	<b>695</b>	<b>86</b>	<b>202</b>
<b>Sample as a Percent</b>	<b>97.5%</b>	<b>99.4%</b>	<b>93.7%</b>	<b>99.6%</b>	<b>81.9%</b>	<b>98.5%</b>

**Table 2**  
**Descriptive Statistics for Components of Resolution Costs**  
**BIF-Insured Sample**  
**as a Percent of the Book Value of Assets at Failure (except where noted)**

Source: FDIC General Ledger, Receivership Financial Statements

The sample includes all BIF-Insured banks that failed between 1986 and 2007 and were inactivated before December 2004. The sample also includes three institutions that failed in or before 1991 that were still active as of 2004. The sample excludes Meriden Trust and Safe Deposit Bank and Private Bank and Trust because they did not make loans or take deposits. Individual institutions (number in parentheses) in the following groups are consolidated and counted as one institution: First Republic (41), MCorp (20), Texas American Bankshares (24), National Bankshares (9), Bank of New England (3), Southeast Bank (2), New Hampshire Banks (7), First City (20), Merchant Bank (2), Bridgeport (2) and Eastland (2). Except where noted, we discount the monthly cash flows using the Treasury yield curve that was prevailing on the date of failure. The yield curve is smoothed to generate a rate for the monthly maturity points using a cubic spline. Cost to the FDIC is available at <http://www2.fdic.gov/hsob/index.asp>.

	<b>Weighted Average</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Minimum</b>	<b>First Quartile</b>	<b>Median</b>	<b>Third Quartile</b>	<b>Maximum</b>
Book Value of Assets at Failure (\$000 omitted)		183,663	1,421,160	1,357	12,888	24,429	50,627	32,927,546
Book Value of Equity on the Last Call Report (as a percent of Assets on Last Call Report)	-1.22	-1.47	5.99	-47.94	-3.31	-0.24	1.55	13.08
Book Value of Equity	4.78	1.41	6.50	-56.07	-1.35	1.84	4.76	26.45
Net Loss on Assets	-12.88	-21.42	13.93	-93.98	-30.07	-19.96	-11.19	14.14
Gain and (Loss) on Assets	-17.46	-27.69	16.95	-129.79	-39.36	-27.74	-15.39	-0.35
Premiums Paid to Acquirer	-0.88	-11.50	10.62	-49.33	-17.91	-8.99	-1.88	-0.01
Premiums Received from Acquirer	0.69	1.45	2.15	0.00	0.21	0.76	1.86	28.75
Direct Liquidation Expenses	-1.70	-3.53	2.11	-12.70	-4.74	-3.44	-2.06	-0.09
Indirect Liquidation Expenses	-3.44	-8.66	8.18	-46.64	-10.98	-5.79	-3.31	-0.08
Total Resolution Costs	-18.01	-33.61	19.67	-133.63	-45.11	-30.46	-19.78	8.61
Total Resolution Costs, Not Discounted	-14.69	-29.95	19.16	-127.06	-40.45	-26.58	-16.10	10.79
Cost to the FDIC, Not Discounted	-14.05	-24.39	13.92	-90.24	-32.76	-22.96	-14.03	0.00

**Table 3**  
**Mean and (Median)**  
**BIF-Insured Sample**  
**as a Percent of the Book Value of Assets at Failure**

Source: FDIC General Ledger, Receivership Financial Statements

The sample includes all BIF-Insured banks that failed between 1986 and 2007 and were inactivated before December 2004. The sample also includes three institutions that failed in or before 1991 that were still active as of 2004. The sample excludes Meriden Trust and Safe Deposit Bank and Private Bank and Trust because they did not make loans or take deposits. Individual institutions (number in parentheses) in the following groups are consolidated and counted as one institution: First Republic (41), MCorp (20), Texas American Bankshares (24), National Bankshares (9), Bank of New England (3), Southeast Bank (2), New Hampshire Banks (7), First City (20), Merchant Bank (2), Bridgeport (2) and Eastland (2). We discount the monthly cash flows using the Treasury yield curve that was prevailing on the date of failure. The yield curve is smoothed to generate a rate for the monthly maturity points using a cubic spline.

\*\*\*=Significantly different than Deposit Payoff, Small, or Pre-FDICIA at the 99 percent confidence level; \*\*=at the 95 percent confidence level; \*=at the 90 percent confidence level.

+++=Significantly different than Medium at the 99 percent confidence level; ++=at the 95 percent confidence level; +=at the 90 percent confidence level.

	<b>Book Value of Equity</b>	<b>Net Loss on Assets</b>	<b>Gain/(Loss) on Assets</b>	<b>Premiums Paid to the Acquirer</b>	<b>Premiums Received from Acquirer</b>	<b>Indirect Expenses</b>	<b>Direct Expenses</b>	<b>Total Resolution Costs</b>
<b>Panel A: Resolution Type</b>								
Deposit Payoff	1.47 (1.99)	-26.25 (-24.25)	-38.98 (-38.68)	-0.18 (0.00)	0.66 (0.03)	-6.20 (-5.32)	-4.94 (-4.65)	-37.39 (-36.89)
P&A	1.39 (1.81)	-20.15 ** (-18.28) ***	-24.71 *** (-25.15) ***	-4.04 *** (0.00) ***	1.00 *** (0.22) ***	-9.31 ** (-6.08) ***	-3.16 *** (-3.00) ***	-32.62 *** (-28.87) ***
<b>Panel B: Size</b>								
Small	1.13 (1.66)	-21.59 (-20.57)	-27.30 (-20.57)	-3.48 (0.00)	0.92 (0.12)	-8.89 (0.12)	-3.64 (-3.53)	-34.11 (-30.72)
Medium	3.13 *** (3.77) **	-21.71 (-19.17)	-32.56 *** (-31.53) **	-1.87 ** (0.00) **	1.06 * (0.29)	-8.15 ** (-4.98) **	-3.14 ** (-3.04) ***	-32.99 (-31.01)
Large	3.36 * (4.80) *	-12.86 *** (-15.25) ***	-17.11 *** (-19.34) ***	-0.63 (0.00)	0.75 (0.21)	-2.16 *** (-1.23) ***	-1.53 *** (-1.48) ***	-16.55 *** (-19.50) ***
<b>Panel C: Legislative Period</b>								
Pre-FDICIA	0.95 (1.35)	-23.13 (-22.17)	-28.56 (-29.38)	-3.72 (0.00)	0.84 (0.10)	-8.99 (-5.78)	-3.54 (-3.47)	-35.65 (-32.66)
FDICIA	3.83 *** (4.25) ***	-12.33 *** (-10.81) ***	-23.07 *** (-22.18) ***	-0.62 *** (0.00) ***	1.38 *** (0.47) ***	-6.93 (-5.82)	-3.53 (-3.24)	-22.79 *** (-21.17) ***

**Table 4**  
**Descriptive Statistics**

Variables are in percent except LOGASSET, LOGASSETSQ, LOGESTABLISH, BRANCH, PREFDICIA, RESMETHOD and LOGYEARINREC.

	<b>Number</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Minimum</b>	<b>First Quartile</b>	<b>Median</b>	<b>Third Quartile</b>	<b>Maximum</b>
NETLOA	1,092	21.42	13.93	-14.14	11.19	19.96	30.07	93.98
BVERATIO	1,092	1.41	6.50	-56.07	-1.35	1.84	4.76	26.45
EARNEDINC	1,092	1.21	0.84	0.00	0.68	0.98	1.45	6.58
BROKER	1,092	3.22	9.52	0.00	0.00	0.00	0.03	96.39
INSIDER	1,086	1.30	2.58	0.00	0.02	0.42	1.63	41.34
CORE	1,092	89.11	15.42	9.79	80.94	91.13	98.20	152.70
LOGASSET	1,092	10.30	1.29	7.21	9.46	10.10	10.83	17.31
LOGASSETSQ	1,092	107.83	29.06	52.03	89.57	102.08	117.34	299.63
NPA	1,092	14.77	9.89	0.00	7.99	13.00	19.24	47.06
ORE	1,092	5.51	5.45	0.00	1.81	4.32	7.63	58.68
FAILRATE	1,092	1.41	1.65	0.00	0.29	0.88	1.73	14.93
LOGESTABLISH	1,090	12.08	0.96	9.56	11.36	12.02	12.89	13.57
BRANCH	1,092	3.55	17.00	1.00	1.00	1.00	2.00	432.00
PIRATIO	1,090	4.13	3.35	0.16	1.30	2.97	6.10	13.39
PREFDICIA	1,092	0.84	0.37	0.00	1.00	1.00	1.00	1.00
RESMETHOD	1,092	0.79	0.41	0.00	1.00	1.00	1.00	1.00
DIRECT	1,092	3.53	2.11	0.00	2.06	3.44	4.74	12.70
FRAUD	608	0.06	0.24	0.00	0.00	0.00	0.00	1.00
LOGYEARINREC	1,090	1.39	0.61	-0.86	1.03	1.46	1.85	2.75

**Table 5**  
**Resolution Method Choice**

Probit regression with robust standard errors. The dependent variable is 1 if the resolution method is a P&A, 0 if it is a payoff.

The coefficients of the probit regression are reported and the standard errors are in parentheses.

\* Indicates can reject the null hypothesis that the coefficient is zero at the 90th percent confidence interval.

\*\*=95th percent confidence interval; \*\*\*=99th percent confidence interval.

	(1)	(2)	Pre-FDICIA (3)	FDICIA (4)
BVERATIO	0.006 (0.008)	0.006 (0.008)	0.007 (0.009)	-0.019 (0.015)
EARNEDINC	-0.129 ** (0.053)	-0.124 ** (0.053)	-0.126 ** (0.056)	-0.182 (0.151)
BROKER	-0.010 ** (0.005)	-0.010 ** (0.005)	-0.009 * (0.005)	-0.023 * (0.014)
INSIDER	-0.007 (0.018)	-0.007 (0.018)	-0.011 (0.019)	0.351 ** (0.150)
CORE	0.013 *** (0.003)	0.013 *** (0.003)	0.015 *** (0.003)	-0.016 ** (0.009)
LOGASSET	1.542 ** (0.627)	1.546 ** (0.628)	1.513 ** (0.721)	1.315 (1.186)
LOGASSETSQ	-0.072 ** (0.031)	-0.072 ** (0.031)	-0.071 ** (0.035)	-0.062 (0.057)
NPA	-0.003 (0.005)	-0.003 (0.005)	-0.002 (0.005)	0.000 (0.015)
ORE	-0.002 (0.010)	-0.002 (0.010)	0.000 (0.011)	-0.019 (0.026)
FAILRATE	0.079 ** (0.033)	0.084 ** (0.034)	0.081 ** (0.035)	0.240 (0.156)
LOGESTABLISH	0.259 ** (0.104)	0.268 ** (0.105)	0.230 * (0.122)	0.606 ** (0.284)
BRANCH	0.049 ** (0.022)	0.049 ** (0.022)	0.046 ** (0.023)	0.066 (0.048)
PIRATIO	-0.109 *** (0.030)	-0.113 *** (0.030)	-0.100 *** (0.039)	-0.190 *** (0.064)
PREFDICIA		-0.102 (0.143)		
Constant	-11.119 *** (3.454)	-11.103 *** (3.465)	-10.806 *** (3.947)	-10.872 (7.161)
Number of Obs.	1,085	1,085	914	171
Log Likelihood	-518.86	-518.60	-441.15	-69.01
Pseudo-R Squared	0.068	0.0681	0.0714	0.1474

**Table 6**  
**Net Loss on Assets**

Column (1) presents OLS regression results with robust standard errors. The dependent variable net loss on assets as a percent of total assets at failure (NETLOA).

The coefficients of the OLS regression are reported and the standard errors are in parentheses.

\* Indicates can reject the null hypothesis that the coefficient is zero at the 90th percent confidence

\*\*=95th percent confidence interval; \*\*\*=99th percent confidence interval.

	OLS (1)	Treatment (2)	Treatment (3)	Pre-FDICIA (4)	FDICIA (5)
RESMETHOD	-4.487 *** (0.979)	6.234 (4.854)	2.714 (4.631)	8.793 (6.231)	-5.370 (5.083)
BVERATIO	-0.738 *** (0.090)	-0.753 *** (0.055)	-0.725 *** (0.053)	-0.783 *** (0.065)	-0.476 *** (0.107)
EARNEDINC	3.962 *** (0.504)	4.274 *** (0.451)	3.910 *** (0.437)	4.362 *** (0.526)	1.767 * (0.927)
BROKER	0.140 ** (0.058)	0.178 *** (0.041)	0.171 *** (0.039)	0.168 *** (0.046)	0.239 *** (0.083)
INSIDER	0.598 *** (0.105)	0.610 *** (0.134)	0.579 *** (0.128)	0.618 *** (0.144)	0.491 (0.648)
CORE	-0.161 *** (0.025)	-0.203 *** (0.030)	-0.172 *** (0.029)	-0.219 *** (0.040)	-0.007 (0.053)
LOGASSET	10.685 *** (2.346)	9.974 *** (2.507)	10.870 *** (2.395)	10.834 *** (2.870)	9.230 ** (4.601)
LOGASSETSQ	-0.459 *** (0.105)	-0.439 *** (0.111)	-0.467 *** (0.106)	-0.461 *** (0.127)	-0.429 ** (0.200)
NPA	0.260 *** (0.035)	0.267 *** (0.036)	0.250 *** (0.034)	0.252 *** (0.041)	0.196 *** (0.071)
ORE	0.509 *** (0.056)	0.511 *** (0.065)	0.511 *** (0.062)	0.512 *** (0.074)	0.427 *** (0.129)
FAILRATE	1.429 *** (0.236)	1.205 *** (0.236)	1.102 *** (0.229)	0.903 *** (0.267)	3.036 *** (.777)
PREFDICIA			3.691 *** (.975)		
Constant	-34.897 *** (13.353)	-34.706 *** (14.068)	-43.190 *** (13.580)	-40.774 *** (16.096)	-38.496 (26.545)
Lambda		-6.317 ** (2.805)	-4.272 (2.681)	-7.502 ** (3.596)	-0.595 (2.999)
Number of Obs.	1,086	1,085	1,085	914	171
R Squared	0.466				
Wald Statistic		832.1 ***	926.23 ***	611.83 ***	123.89 ***

**Table 7**  
**Direct Expenses**

Column (1) presents OLS regression results with robust standard errors. The dependent variable direct expenses as a percent of total assets at failure (DIRECT).

The coefficients of the OLS regression are reported and the standard errors are in parentheses.

\* Indicates can reject the null hypothesis that the coefficient is zero at the 90th percent confidence

\*\*=95th percent confidence interval; \*\*\*=99th percent confidence interval.

	OLS (1)	Treatment (2)	Treatment (3)	Pre-FDICIA (4)	FDICIA (5)
RESMETHOD	-1.656 *** (0.138)	-7.874 *** (1.307)	-7.413 *** (1.236)	-6.721 *** (1.421)	-6.067 *** (1.470)
BVERATIO	0.018 (0.013)	0.025 * (0.015)	0.021 (0.015)	0.024 (0.015)	-0.001 (0.032)
EARNEDINC	0.212 *** (0.068)	0.037 (0.126)	0.086 (0.122)	0.124 (0.125)	-0.108 (0.279)
BROKER	0.012 *** (0.007)	-0.010 (0.011)	-0.009 (0.011)	-0.003 (0.011)	-0.042 * (0.025)
INSIDER	0.014 (0.021)	0.005 (0.038)	0.009 (0.036)	-0.002 (0.034)	0.386 ** (0.193)
CORE	0.000 (0.005)	0.025 *** (0.008)	0.020 ** (0.008)	0.018 * (0.009)	0.015 (0.016)
LOGASSET	-1.097 *** (0.387)	-0.715 (0.701)	-0.837 (0.669)	-0.927 (0.683)	-1.281 (1.383)
LOGASSETSQ	0.032 ** (0.016)	0.022 (0.031)	0.026 (0.030)	0.029 (.03)	0.041 (0.060)
NPA	0.021 *** (0.007)	0.017 * (0.010)	0.019 * (0.010)	0.019 * (0.010)	0.025 (0.021)
ORE	0.072 *** (0.012)	0.071 *** (0.018)	0.071 *** (0.017)	0.070 *** (0.018)	0.076 ** (0.039)
FAILRATE	0.010 (0.040)	0.142 ** (0.066)	0.157 ** (0.063)	0.128 ** (0.063)	0.626 *** (.233)
PREFDICIA			-0.509 * (.273)		
Constant	11.674 *** (2.315)	11.690 *** (3.934)	12.861 *** (3.796)	12.591 *** (3.834)	14.993 ** (7.977)
Lambda		3.659 *** (0.750)	3.393 *** (0.709)	3.015 *** (0.816)	2.620 *** (0.836)
Number of Obs.	1,086	1,085	1,085	914	171
R Squared	0.221				
Wald Statistic		151.02 ***	162.94 ***	146.07 ***	64.67 ***

**Table 8**  
**Time in Receivership**  
**in Years**  
**BIF-Sample**

Source: FDIC General Ledger, Receivership Financial Statements

The sample includes all BIF-Insured banks that failed between 1986 and 2007 and were inactivated before December 31, 2007. The sample also includes three institutions that failed in or before 1991 that were still active as of 2004. The sample excludes Safe Deposit Bank and Private Bank and Trust because they did not make loans or take deposits.

The average time in receivership is the number of years from the date of failure to the termination of the receivership. This calculation excludes the institutions in the sample that have not yet been terminated.

For the institutions in groups, the time in receivership is the longest amount of time an individual in the group was in receivership.

+++=Significantly different than Deposit Payoff at the 99 percent confidence level; \*=Significantly different than the group average at the 99 percent confidence level.

<b>By Legislative Period</b>					
	Number	Average Time in Receivership		Median Time in Receivership	
All: 1986-2005	1,090	4.73		4.28	
Pre-FDICIA: 1986-1991	917	4.73		4.30	
FDICIA: 1992-2005	173	4.75		4.16	
<b>By Resolution Type</b>					
	Number	Average Time in Receivership		Median Time in Receivership	
Deposit Payoff	227	5.80		5.45	
Purchase and Assumption	863	4.45	+++	4.03	+++
<b>By Legislative Period and Resolution Type</b>					
	Number	Average Time in Receivership		Median Time in Receivership	
Deposit Payoff					
Pre-FDICIA: 1986-1991	196	5.94		5.65	
FDICIA: 1992-2005	31	4.97 *		4.41 *	
Purchase and Assumption					
Pre-FDICIA: 1986-1991	721	4.40	+++	3.99	+++
FDICIA: 1992-2005	142	4.70 *		4.11	

**Table 9**  
**Years in Receivership**

The dependent variable is the natural logarithm of the number of years in receivership (LOGYEARSINREC).

The coefficients of the OLS regression are reported and the standard errors are in parentheses.

\* Indicates can reject the null hypothesis that the coefficient is zero at the 90th percent confidence

\*\*=95th percent confidence interval; \*\*\*=99th percent confidence interval.

	OLS (1)	Treatment (2)	Treatment (3)	Pre-FDICIA (4)	FDICIA (5)
RESMETHOD	-0.370 *** (0.030)	-0.779 *** (0.217)	-0.893 *** (0.222)	-1.184 *** (0.303)	0.045 (0.228)
BVERATIO	0.001 (0.003)	0.002 (0.002)	0.002 (0.003)	0.004 (0.003)	0.008 (0.005)
EARNEDINC	-0.010 (0.015)	-0.021 (0.020)	-0.032 (0.021)	-0.041 (0.026)	-0.038 (0.042)
BROKER	0.001 (0.001)	-0.001 (0.002)	-0.001 (0.002)	-0.002 (0.002)	0.000 (0.004)
INSIDER	0.014 ** (0.006)	0.013 ** (0.006)	0.945 *** (0.118)	0.010 (0.007)	-0.007 (0.029)
CORE	-0.002 (0.001)	0.000 (0.001)	0.001 (0.001)	0.002 (0.002)	0.010 *** (0.002)
LOGASSET	0.891 *** (0.093)	0.920 *** (0.114)	0.945 *** (0.118)	0.949 *** (0.145)	0.856 *** (0.207)
LOGASSETSQ	-0.028 *** (0.004)	-0.029 *** (0.005)	-0.029 *** (0.005)	-0.029 *** (0.006)	-0.028 *** (0.009)
NPA	0.001 (0.001)	0.001 (0.002)	0.000 (0.002)	0.000 (0.002)	0.000 (0.003)
ORE	0.009 *** (0.002)	0.009 *** (0.003)	0.009 *** (0.003)	0.009 *** (0.004)	0.015 *** (0.006)
FAILRATE	0.029 *** (0.011)	0.037 *** (0.011)	0.035 *** (0.011)	0.039 *** (0.013)	0.067 ** (0.035)
PREFDICIA			0.104 ** (.047)		
Constant	-4.467 *** (0.534)	-4.487 *** (0.637)	-4.725 *** (0.665)	-4.506 *** (0.808)	-5.627 *** (1.197)
Lambda		0.241 * (0.126)	0.307 *** (0.128)	0.461 *** (0.174)	-0.112 (0.134)
Number of Obs.	1,084	1,083	1,083	912	171
R-Squared	0.418				
Wald Statistic		661.63 ***	632.92 ***	449.21 ***	221.85 ***