

A Study of The Acquisition of Failed Banks

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An examination of 45 FDIC sponsored bank mergers and 118 normal mergers occurring in the United States between 1982 and 1988 find no significant returns accrue to the shareholders of the acquiring bank. This differs from earlier studies that find significant returns to acquired firm shareholders.

Mergers in the Banking Industry

The study of bank mergers is unique in several respects. Banks operate in highly regulated environments, and federal and state banking regulations have placed restrictions on the number and types of banking mergers. Deposit insurance agencies have also played a significant role with their concern for insolvent banks and for the solvency of any post merger entity. The nature of their assets and liabilities also sets these mergers apart. Most of a bank's liabilities are guaranteed, and as a result most of the uncertainty in valuation will be on the asset side. Since good portions of their assets are financial, their valuation presents its own unique problems. The estimation of these asset values is essentially different from that of firms with a large percentage of physical assets. Finally, since it is politically difficult to allow banks to go bankrupt, insolvency will often lead to an acquisition.

The empirical results are, in at least two respects, similar to the findings for non-bank mergers. First, the target banks shareholders generally earn large and significant premiums (see: Trifts and Scanlon (1987), Baradwaj et al. (1990), Cornett and De (JBF 1991)), or Bertin, Ghazanfari and Torabzadeh (1989) (hereafter BGT). Unlike non-bank mergers, however, both Cornett and De (JBF 1991) and Baradwaj et al. (1990) conclude that cash mergers do not result in significantly larger premiums for the target firm. The latter also conclude that, for mixed offers (both cash and stock), the premiums are smaller than for pure stock or cash transactions.

The evidence for the acquirers is mixed. James and Wier (JPE 1987) find significantly positive returns in two and four day windows around the announcement date. They further determine that these returns are positively related to the number of alternate targets and a measure of the relative size of the acquired to the acquirer, and inversely related to the number of potential bidders. Allen and Cebenoyan (1991) find positive bidder returns, but only to those firms that have a relatively high management stakes (as measured by manager holdings) or shareholder concentrations. Cornett and De (JBF 1991) also find significant positive returns. Emergency mergers are the only instances in which Sushka and Bendeck (1988) find positive merger premiums. This conclusion, however, is based on only two mergers. They also divide their sample into "internal" mergers, where the acquiring firm already has a significant stake in the target, and "external" mergers. They conclude significant negative returns to the external group, and zero (insignificantly negative) returns to the internal mergers. Their separation of the two groups may be questioned however, as an examination of their statistics reveals no significant difference in the abnormal returns between the two groups.

Negative excess returns are earned by shareholders in bidder firms according to both Pettway and Trifts (1985) and Baradwaj et al. (1990). Trifts and Scanlon (1987) conclude that large mergers (where the acquired bank is large compared with the acquiring bank) have no significant abnormal returns, while the returns to shareholders for small mergers are significantly negative. Overall, it can be concluded that the returns to the acquirers are either zero or very small.

For insolvent banks, the FDIC often manages the resolution of their bankruptcy. The manner in which this is conducted has resulted in the comparison of the process to an auction. James and Wier (JME 1989) use auction theory to posit a negative relation between abnormal returns to the acquirer and the number of bidders. They find that this relation is negative and significant for unassisted mergers, and that there is no significance between the two variables for FDIC auctions. The conclusion they draw from this result is that the FDIC procedure transfers wealth to the winning bidders.

An alternate approach to that of James and Wier is found in Giliberto and Varaiya (1989). They compare the magnitude of the bids to several variables including the demand deposits of the failed bank (as a proxy for its asset base), the number of bidders (N), a measure of uncertainty of the failed bank value, and as well indicator variables to account for structural factors. If these bids represent independent private valuations (IPV), the winning bid should increase with N, as the winner will not bid his valuation, but rather a value just above that of the second highest bidder. However, for common valuation actions, the phenomenon known as the winner's curse would predict adjusted bids that decrease with the number of bidders. Giliberto and Varaiya conclude from their results, since the magnitude of the bids appears to decrease as uncertainty increases and increase with the number of bidders, that these auctions are more appropriately described as IPVs.

Some authors have attempted to determine the reasons why bank mergers occur and the source of value creation in bank mergers. Rhoades (1986) concludes that poor managerial performance is not a motivation for these mergers. Along with Hunter and Wall (1989), he maintains that the mergers do not usually purge the system of bad managers. In their study, Beatty, Santomero and Smirlock (1987) draw three main conclusions. Acquiring banks intend to change the portfolio composition of the target bank, they pay higher premiums for well-managed banks, and the shareholders of the target banks in non-competitive environments are paid higher premiums.

Clark (1988) suggests that scale economies are possible for banks with less than \$100 million in assets. One might conclude that as many publicly traded banks are larger, this is not a major motive for those banks. As Hunter and Wall also point out, given that the target bank's assets are less than \$100 million, economies of scale may play a role. They claim the evidence is that the cost curve is reasonably flat up to about \$5 billion in assets. Economies of scope may also be a motivation to acquiring banks that have need of core deposits. In their study, Hunter and Wall conclude that the acquisition of core deposits is of value to acquiring banks.

The role of mergers in resolving bank failures has been the subject of a few studies. James (1991), defines the loss realized in failed bank auctions as the difference between the book value of assets and the amount recovered by the FDIC net of direct expenses. He measures this loss and then attempts to explain its magnitude using several variables. Giliberto and Varaiya (1989) identify variables that could have an effect on the magnitude of the bid for failed banks. In a study of P&A (purchase and acquisitions), Sushka and Bendeck conclude that emergency rescues are the only type of P&A that earns statistically significant positive returns for the acquiring bank. However, this conclusion is made based on only two failed bank auctions. Studies, by Pettway and Trifts (1985), James and Wier (JME 1987), and BGT have employed the traditional event study methodology to the stock returns of the shareholders of banks that acquire failed banks.

Pettway and Trifts examine failed bank purchase and assumptions between 1972 and 1981. They use the geometric return and the market model, over a period of fifty trading days beginning 60 days prior to the merger, to estimate a normal return. They then determine the effect of the acquisition on the acquiring bank's shares. The first of the three main conclusions that arise from this study is that

the market anticipates the merger, during the ten days before the event, with a significantly positive average increase in the acquiring firm's return (3.322%). In the five days subsequent to the merger, the abnormal return of the banks also increases. However, the final result is that over the longer term of fifty days following the merger, the return to the shareholders of the acquiring firms becomes negative (-6.747%). They thus conclude that the market initially views the acquisition in a positive light, but later reevaluates that opinion (perhaps based on additional information) concluding that the transaction has become detrimental to the new entity.

James and Wier (JME 1987) apply auction theory to failed bank acquisitions to reach the conclusion that there is a wealth transfer to the acquiring banks in FDIC auctions. They examine nineteen P&A transactions, and 60 random bank acquisitions, between 1978 and 1983. The announcement date in the Wall Street Journal determined the event date. The periods -80 to -11 and 11 to 80 relative to the event date were used to calculate the parameters of the market model. Significant and positive two-day abnormal returns were reported for the winners of the FDIC auctions (2.36%) and for the acquirers in the control group (1.07%). For the abnormal returns of the banks engaged in FDIC auctions, the authors found that these returns were positively related to the ratio of the size of the acquired to the acquiring bank, and inversely related to the number of bidders participating in the auction.

To further substantiate their wealth transfer hypothesis, they examine the relationship between the abnormal returns and variables for size, number of bidders, and number of alternate targets. For the control sample, the results indicated a significant negative relationship between the log of the number of potential bidders and a significant positive relationship for the log of the number of alternate targets. However for the FDIC sample, the relationships, though insignificant, are the reverse of the control sample. Since the FDIC invites only a few bidders, the authors conclude that the FDIC method transfers wealth to the winning bidders. They base this on their results that suggest that these acquirers earn significantly larger returns and that their returns are not related to the number of potential bidders or alternate targets.

BTG (1989) examine 33 acquisitions of failed banks. Using periods -121 to -21 relative to the announcement date, they estimate parameters for the market model. Then they use these to calculate CARs for different event windows. Significantly positive CARs are found for the windows -1 to 0, -1 to +1, and -4 to 0. Longer event windows were not statistically significant. If there is a wealth transfer in FDIC failed bank auctions, it may result due to the nature of the deposit insurance business. In a flat rate deposit insurance scheme, the insurance is relatively overpriced for the safest banks. As well, participation as a bidder in FDIC auctions is by invitation. Therefore, if only the safest banks are invited to participate, this wealth transfer could be viewed one possible form of reimbursement for the premium overpayment. Alternatively, the difference between failed bank acquisitions and the control group may be a result of the new bank's systematic risk changing as a result of the merger. It may be that the acquirers of failed bank assets are acquiring, on average, assets that are more risky relative to the assets acquired by the banks in the control group. Then, the wealth transfer may be an appropriate compensation for the increased risk that the acquiring bank is assuming.

The results as presented by Pettway and Trifts, James and Wier and BGT all indicate an initially positive evaluation by the market of the returns of banks acquiring failed institutions. They differ, however, in their results of this evaluation in the longer term. Those results are not significant. With earlier data (pre 1982), Pettway & Trifts conclude overbidding by acquiring banks. James and Wier and BGT, with samples from a later period, conclude that the process is characterized by underbidding. However, they all failed to account for the possibility that the merger may have changed how investors perceive the riskiness of the firm. It is likely that, in some of these

transactions, the relatively safe acquirer has merged with a more risky failed bank. However, given elements of the FDIC failed bank auctions such as put back provisions and the withholding of more risky assets, it is possible that in some cases the assets transferred are less risky than those of the acquirer. Thus, the shifting risk patterns may be hiding the true market reaction to the merger.

Data and Methodology

The Federal Deposit Insurance Corporation's Annual Report contains information on banks closed during the year of the report because of financial difficulties. This information includes the number of depositors, and dollar values of deposits and assets of the failed bank. If the failed bank was merged with another institution, the acquirer, date of the merger and amount of FDIC disbursement if any are also reported. An examination of these reports between 1982 and 1988 uncovered a total of 69 failed bank mergers that involved acquirers with publicly traded shares. These involved 33 acquiring banks. Eliminating those transactions in which subsequent mergers are too close¹, and accounting for instances in which an acquirer absorbed two banks on the same date, results in about 48 events that will be examined.

A control group of bank mergers involving solvent banks, and therefore with no FDIC involvement was also collected. The source of these mergers was the publication Mergers and Acquisitions between 1982 and 1988. A subset was determined by eliminating all those that did not involve acquiring banks with publicly traded shares. Then those cases in which the estimation period overlapped with other mergers were also eliminated, leaving 118 events that were examined.

The samples collected for the two groups was cross checked with information in the Wall Street Journal, Funk and Scott's Predicasts, and Mergers and Acquisitions to validate the information, and to detect the possible existence of other significant events that might influence the returns of the acquiring bank. The data on bank returns was obtained from the CRSP tapes and other sources for OTC traded shares.

Failed bank mergers have a very short lead time between the announcement of the merger and the actual merger. This short lead time is a result of the nature of the auction process for failed banks. The event date, then, will be the date of the announcement by the FDIC. The Wall Street Journal Index and Funk and Scott's will be examined for any indication of a prior announcement. For the

$$R_t = \beta_0 + \beta_1 R_{mt} I_1 + \beta_2 R_{mt} I_2 + \beta_3 I_3 + e_t$$

control group, the event date will be defined as the first date the intention to acquire was announced in either the Wall Street Journal Index or Funk and Scott's.

Abnormal returns will be calculated with two alternate formulations that will use indicator variables during the possible event period. The first model will employ the market returns in the following manner:

where t represents a period 110 days around the event period including 60 days prior to the event and:

¹. Since this study uses sixty days pre merger and fifty days post merger, any merger that has another merger occurring in this window will be eliminated to avoid reporting results that may be contaminated with the existence of another event.

- R_t is the return of the security in period t ,
 R_{mt} is the return of the market portfolio in period t ,
 I_1 is an indicator variable with a value of 1 during the post event estimation period and 0 otherwise,
 I_2 is an indicator variable with a value of 1 during the event period and 0 otherwise,
 I_3 is an indicator variable with a value of 1 on the event date and for nine days before the event, and
 e_t is the error term.

$$R_t = \beta_0 + \beta_1 R_{mt} I_1 + \beta_2 R_{mt} I_2 + \sum_{i=3}^{13} \beta_i I_i + e_t$$

The alternate specification will calculate the abnormal returns in the following manner:

where:

- R_t is the return of the security in period t ,
 R_{mt} is the return of the market portfolio in period t ,
 I_1 is an indicator variable with a value of 1 during the pre event estimation period and 0 otherwise,
 I_2 is an indicator variable with a value of 1 on the event date and afterwards, and 0 otherwise,
 $I_{3 \text{ to } 13}$ are indicator variables with a value of one on a unique day in the event window and zero otherwise,
 e_t is the error term.

$$CAR_{-5,+5} = \sum_{i=3}^{13} I_i$$

With this model, if the event day or date of the merger/FDIC announcement is day 0, then the other window days can be designated as day -5 to +5. The event window is defined as that eleven day period including the event date, and five days before and five days after the event date. It is possible to calculate a cumulative abnormal return for the event window by summing the estimated values of the indicator variables for the for the entire eleven day window as:

The CAR for any smaller window can be calculated in a similar manner.

Results and Discussion

For the first model, the abnormal return for the cumulative period of ten days up to and including the event period ($t=-9$ to $t=0$) is negative (an average daily return of -.030%) but insignificant ($t=.440$). For the control group, it is positive (.048%), but as well insignificant ($t=.746$). A test for a difference in means between the two groups also leads to a result of insignificance ($t=.745$). Therefore the conclusions that there are no significant abnormal returns to either group, and that there is no significant difference in the estimated abnormal returns to the two groups are supported.

The results for the second model largely support the above. For the control group, the average

CAR_{.5,5} for all 48 events is .081%² (t=.088). However, this result may be an anomaly, as it is not sustained and it does occur relatively early in the event window. The control group has a cumulative eleven day return of .230% (t=.438), and is also insignificant. All daily average abnormal returns and subgroupings of daily abnormal returns are insignificant at a 95% confidence level except day -5 for the control group. It has an average daily return of .447% (t=2.355).

These results are significant for several reasons. First, the major findings of James and Wier (JME 1987) and BG&T (1989) are not replicated. Both found statistically significant returns in a very narrow event window before the FDIC sponsored merger. Part of this difference could be a result of the different samples. James and Wier had a sample of 19 mergers from the period 1972 to 1981. These represent mergers that occurred in a period when intrastate bank mergers were more severely restricted. The BGT sample more closely matches this study (1982 to 1987), but does contain 15 fewer events and one less year (1988).

BGT also uses a different estimation period for the model parameters. They are in effect comparing the bank's merger performance with a premerger period. It is conceivable that the riskiness of the new bank has increased, thus warranting an increased return to compensate for the increased risk. This model does make such an adjustment. James and Wier (JME 1987) do employ an estimation period that covers both the pre and post event periods (-80 to -10, and +10 to +80), but their smaller sample is from an earlier period.

The results for the control sample also present different evidence. James and Wier (JPE 1987) examine 60 acquisitions from 1972 to 1983. They find small but significant 2 and 5 day average returns for bank mergers. Again, the earlier time period for the sample could account for the differing results. Also, their model for estimating the normal returns is similar to the model they employed with the failed banks, and different from the model employed in this study.

In summary, the main conclusion of this paper is that both FDIC sponsored and regular bank mergers are zero net present value events during the period studied. This result, seemingly at odds with prior studies, may have occurred for three reasons. First, the period 1982 to 1988 represents a period in which there was a more open market with respect to intrastate bank mergers, thus potentially rendering the market for both failed and solvent acquisitions more competitive. As well, the increase in the number of both types of bank mergers may have created a more competitive environment. Finally, the estimation technique employed allows for an adjustment in the market's perception of the risk of the newly created entity. This is especially an important adjustment for banks acquiring failed banks.

² This is an eleven day return.

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