

# WILEY



---

Failure and Failure Resolution in the US Thrift and Banking Industries

Author(s): Atul Gupta and Lalatendu Misra

Source: *Financial Management*, Winter, 1999, Vol. 28, No. 4 (Winter, 1999), pp. 87-105

Published by: Wiley on behalf of the Financial Management Association International

Stable URL: <https://www.jstor.org/stable/3666305>

---

JSTOR is a not-for-profit service that helps scholars, researchers, and students discover, use, and build upon a wide range of content in a trusted digital archive. We use information technology and tools to increase productivity and facilitate new forms of scholarship. For more information about JSTOR, please contact [support@jstor.org](mailto:support@jstor.org).

Your use of the JSTOR archive indicates your acceptance of the Terms & Conditions of Use, available at <https://about.jstor.org/terms>



JSTOR

Wiley and *Financial Management Association International* are collaborating with JSTOR to digitize, preserve and extend access to *Financial Management*

# Failure and Failure Resolution in the US Thrift and Banking Industries

**Atul Gupta and Lalatendu Misra**

*Atul Gupta is Robert and Julia Dorn Professor of Finance at Bentley College. Lalatendu Misra is Professor of Finance at the University of Texas at San Antonio.*

The failure of large numbers of thrift and commercial banking firms during the 1980s and early 1990s severely tested the existing deposit insurance and failure resolution systems in the United States. This paper surveys recent academic and regulatory studies on the causes of the crisis, the costs of different regulatory strategies used to combat the crisis, and the changes resulting from the passage of FIRREA in 1989 and the FDICIA in 1991. This information is used to determine a set of characteristics that are important for creating a regulatory structure for federally insured financial institutions.

■ The failure of so many federally insured thrift and commercial banking firms over the last two decades, and the enormous taxpayer cost resulting from the bailout that followed, have received considerable attention in both the popular and the financial press. In this paper, we review a number of academic and regulatory studies that have examined the causes of, and regulatory responses to, the problems faced by thrift and banking institutions in the United States. We provide a synthesis of the lessons learned from this experience that is designed to serve several purposes. We summarize the major political and economic forces and public policies that led to the problems in the banking sector; provide an overview of the policies pursued by federal regulators; analyze the effectiveness of different regulatory strategies in resolving the problem at hand; examine the costs to the insurance fund and taxpayers that result from different failure resolution strategies; and summarize the changes in regulatory options and costs following the passage of two substantive legislative actions: the Financial Institutions Reform, Recovery, and

Enforcement Act (FIRREA) in 1989 and the FDIC Improvement Act (FDICIA) in 1991. Finally, the survey is used to identify characteristics of a regulatory structure that has learned from the lessons of the US experience in this area. Such characteristics might help to achieve the two necessary objectives of a sound financial system: early detection of potential problems and minimization of resolution costs in the event of failure.

The paper is organized as follows. The next section summarizes the origins of the thrift problems of the 1980s. Section II details the effectiveness of regulatory approaches. Section III discusses the post-FIRREA experience with thrift resolution. Section IV examines the FDIC's experience at resolving bank failures during the 1980s and early 1990s, and Section V examines changes in the regulatory system following the passage of the FDICIA in 1991. The last section describes the characteristics of a regulatory and resolution system that has learned from the US experience. These characteristics could be thought of as a step in the right direction whether dealing with US institutions at some time in the future or with economic problems in other countries.

We would like to thank the Editors and two anonymous reviewers for helpful comments on earlier drafts of the paper. Partial financial support for this work from the Robert and Julia Dorn Professorship and the University of Texas at San Antonio is gratefully acknowledged. The usual disclaimer applies.

## **I. Resolving Problem Thrifts: The 1980s Experience**

In this section, we discuss the origins of the thrift

**Financial Management, Vol. 28, No. 4, Winter 1999, pages 87 - 105**

problem, the political and regulatory response to the emerging crisis in the industry, and the impact of regulatory policies on managerial incentives.

### A. Origin of the Thrift Problem

The taxpayer cost resulting from problems in the US thrift industry is estimated to be between \$150-\$200 billion in present-value terms. While the popular media focused primarily on fraud and mismanagement, the reasons for the failure of so many thrifts, as well as the enormous taxpayer cost resulting from the resolution process, are not only more varied and complex, but they could also have been significantly reduced if appropriate policies had been followed at both the political and regulatory levels.

In the early 1980s, the notion that thrift institutions were headed for trouble was no mystery either to federal regulators or to makers of public policy. Kane (1985) was one of the early academic voices calling attention to the "gathering crisis" in the industry. Kane (1985, 1989a), Eichler (1989), Barth (1991), and Holland (1993), among others, cited the industry's problems as having started with the dramatic increase in short-term interest rates in the late 1970s, which resulted in large losses for thrifts that had positive duration gaps. As summarized by Ely (1993), this maturity mismatching problem began in the 1930s, when regulatory policies encouraged savings and loan institutions (S&Ls) to make long-term fixed-rate mortgages to facilitate home ownership in the country. Since the traditional funding source for the S&L industry had always been short-term deposits, the public policy goal of encouraging home ownership was itself a contributor to the historic interest-rate risk exposure of thrift institutions. During the 1960s and 1970s, interest rates remained relatively stable, which allowed the industry to survive and remain profitable until rates spiked in the early 1980s and set in motion the dissolution of an entire industry.

In 1966, the extension of regulation Q to S&Ls allowed thrifts to hold down their borrowing costs and to perpetuate the maturity mismatching problem until the interest rate increases of the early 1980s. In addition, the operating flexibility of thrift institutions was restricted twofold: by state laws that imposed interest-rate ceilings on mortgages and a federal ban on adjustable-rate mortgages (ARMs) prior to 1981. Restrictions on geographic expansion made it difficult for S&Ls to diversify credit risks geographically, and the emergence of secondary mortgage markets undercut S&L profitability. Finally, the flat-rate deposit insurance system punished safer institutions, and created an incentive for weaker firms to make high-risk investments when trouble finally hit in the early 1980s.

### B. Legislative and Regulatory Response

The regulatory response to the emerging problems of the thrift industry was to wait, and hope that declines in interest rates and asset diversification would bring the industry back to health. Capital standards were loosened and market-value insolvent institutions were allowed to continue to operate, all in the hope that the industry would outgrow its problems.

In the early 1980s, two pieces of legislation were enacted that directly impacted the banking and thrift industries: the Depository Institutions Deregulation and Monetary Control Act (DIDMCA) of 1980 and the Garn-St. Germain Act of 1982. This legislation granted thrifts expanded investment powers. The acts may have been driven by the same underlying incentive, giving troubled institutions expanded powers in the hope that they return to health.

By the mid-1980s, the accelerating pace of thrift failures had left the Federal Savings and Loan Insurance Corporation (FSLIC) insolvent, but the number of failures was still picking up speed. Kane (1989b), Cole (1993), and McKenzie, Cole, and Brown (1992), suggest that at this time federal regulators had every incentive to protect their own position, reputation, and future career prospects. They attempted to do so by implementing policies that protected the health of the insurance fund, hid the industry's problems from the public, and transferred the cost of the needed bailout to the Treasury and the taxpayers.

The practice of regulatory forbearance continued and took a variety of forms designed to keep the problems of the industry hidden from the public. In 1985, the FSLIC and the Federal Home Loan Bank Board (FHLBB) also started the Management Consignment Program. Under this program, management of troubled institutions was put in the hands of individuals from other, solvent firms. The hope was that a change in management would improve the financial performance of these troubled firms. However, the program only postponed the day of reckoning for this group of firms.

When a firm did fail, the FSLIC's preferred approach was to arrange a merger between the failed institution and a solvent firm, called a purchase and assumption transaction (P&A). This approach to failure resolution resulted in lower cash outflows from the insurance fund than liquidation, because liquidation required paying off all insured depositors, a difficult task because of the FSLIC's insolvency. Executing a P&A created its own problems, because the assets of the failed institution were, by definition, worth far less than its liabilities. Finding a buyer for the failed institution required the FSLIC to provide a cash infusion equal to the difference between the market

value of the firm's liabilities and its assets, less any premium being paid by the acquiring firm. Given its extreme shortage of cash, the FSLIC routinely provided non-cash incentives, such as yield guarantees and asset-put-back provisions, to acquiring firms. These incentives were designed to make the transaction attractive for acquiring firms. However, such open-ended assistance made it extremely difficult to assess the value of any of the deals being conducted.

### C. Deposit Insurance, Regulatory Changes, and Managerial Incentives

Kane (1989a, 1989b), Kormendi, Bernard, Pirrong, and Snyder (1989), and Barth (1991) argue that for thrift managers declining profitability combined with the power to increase the yield offered for funds created an incentive to follow an investment strategy that increased portfolio risk. Coupled with inadequate regulatory supervision, and the downside protection offered by flat-rate deposit insurance, managers of thrift institutions had a clear incentive to throw caution to the winds and try to survive by taking large risks.

The delay in resolving the problems of insolvent institutions increased the final taxpayer cost of the thrift bailout substantially. Ely (1993) estimates that, had all insolvent thrifts been resolved by mid-1983, the total cost to the FSLIC would have amounted to \$30 billion. Instead, regulators chose to hold off, in the hope that declines in interest rates and expanded investment and financing powers would enable market-value insolvent institutions to return to health. As it turned out, interest rates did decline, but too late to be of much help in stemming the thrift crisis.

The impact of such moral-hazard problems was not equally destructive to all institutions. For example, Esty (1997a) examines the possibility that organizational form might influence the investment and funding strategies of individual thrift institutions. He finds that for the period 1982 to 1988, stock-held thrifts showed higher profit variability and greater investments in high-risk assets as compared to mutual institutions. In a case study of two institutions (one mutual and one stock-held) between 1983 and 1988, Esty (1997b) finds that thrifts that converted to stock-ownership implemented riskier financial strategies, made significant payouts to shareholders, and eventually failed. Kane and Hendershott (1996) examine the experience of credit unions during the 1980s and find a far better record than that of the thrift sector. They conclude that the differences in organizational form that made it difficult to convert to stock ownership, as well as co-monitoring by sister institutions and private monitors, could explain the different industry experience. These studies provide insight into how

the structure of the residual claim interacts with existing regulations to create adverse incentive problems for financial institutions, and offer some insight into how these problems might be resolved.

One mechanism that might control the adverse incentive problem is the composition of the institution's board of directors. Whidbee (1997) examines ownership structure and board composition for a sample of bank holding companies (BHCs) and finds that outside board membership tends to be lower when the CEO owns a large share of the firm. He interprets this evidence as suggesting that CEOs use their influence to restrict outside board membership, which could worsen the moral-hazard problem.

Subrahmanyam, Rangan, and Rosenstein (1997) examine the impact of outside directors on gains to acquiring firms in bank mergers. Their findings suggest that banking laws create significant restrictions on the available pool of outside directors, and expand directors' responsibility to include not only shareholders, but depositors and the FDIC as well. Subrahmanyam et al. also find that bank boards tend to be substantially larger than those of non-financial firms, and that this size differential is primarily due to the presence of more outside directors. Further, while their sample displays a negative relationship between abnormal returns and the proportion of independent outside directors on the boards of bidding firms, the presence of outside directors with expertise in evaluating takeovers results in tangible rewards for shareholders.

The literature concerning problems associated with failure resolution in the thrift industry suggests a number of reasons for the taxpayer bill that was measured in the hundreds of billions of dollars. These reasons include inconsistent public and regulatory policies, self-interested regulators, a lack of political willingness to address the problem, and adverse movements in interest rates and economic conditions. Regulatory changes such as FIRREA and the FDICIA were attempts to improve the regulatory structure within which financial institutions operate, in the hope that such changes would reduce the likelihood of a collapse on the scale seen in the 1980s.

Romer and Weingast (1991) suggest that the congressional response to the thrift problem, characterized first as foot-dragging and then as easing regulations, was designed to help constituents. Thus, these changes can be viewed as routine politics and not as a significant deviation from the norm. Romer and Weingast's analysis suggests that answers to questions such as, "why didn't anyone do anything about the escalating thrift problem in the mid-1980s, and why was Congress so slow to respond," are that the policy of "gambling for resurrection" was a



purposeful congressional policy that emerged from the practice of politics as usual. Such a response could well be expected if and when similar problems arise in the future.

Litan (1991) makes an interesting observation about the questions of political unwillingness to address the thrift problem, noting that fully funding the FSLIC early in the 1980s would have resulted in the closing or assisted mergers of most thrifts. This would have been problematic for the public policy goal of encouraging home ownership, because at the time there were limited alternatives for financing home mortgages.

## II. Regulatory Approaches: Evidence from the 1980s

In this section, we discuss the policy choices available to regulators and empirical evidence of their effectiveness. An abrupt acceleration in inflation and interest rates in the late 1970s triggered the failure of many financial institutions during the 1980s. It was compounded by a mix of internally inconsistent regulatory policies, a deep and prolonged recession in the real estate sector, inadequate regulatory supervision, fraud, mismanagement, and a lack of political will to address the problem at hand. The regulator's policy choices included forbearance and the management consignment program, both of which were designed to allow a troubled institution to continue to operate. The third policy option was to allow a firm to fail, in which case regulators determined the appropriate method for resolving the institution.

### A. Forbearance

Cobos (1989) defines forbearance as "...any program or set of procedures whereby supervisory restraint is exercised toward an insured depository institution that fails to meet established safety-and-soundness criteria." He indicates that forbearance is a "deliberate and intentional" regulatory policy, and when applied appropriately can serve to both reduce failures and limit losses to the insurance fund.

Forbearance can be a valuable strategy for the insurer. It creates an option value by allowing troubled institutions to continue in operation, and bypasses the irreversible closure decision. During the 1980s regulatory forbearance took many different forms, including capital augmentation, reductions in mandatory capital requirements, and a failure to enforce existing requirements. The primary consequence of these policies was that insolvent institutions were allowed to continue operations, in the hope that the institution's problems are reversible, and given time, would take care of themselves.

Cole (1993) reports that thrifts resolved between 1980 and 1988 had been insolvent on a Generally Accepted Accounting Principles (GAAP) basis for an average of 17 months. Cole also reports that a number of the thrifts operating in 1988 had been GAAP insolvent since 1979. These findings suggest that problems existed with the way in which regulatory forbearance was applied to weak thrift institutions during this time period. The findings also support Kane (1989a), who coined the term "zombie S&Ls" to describe market value insolvent thrift institutions that regulators allowed to continue in operation. Like zombies, these institutions sucked vital liquidity from an ailing industry and jeopardized the welfare of healthier institutions.

Rather than being a regulatory strategy to give troubled institutions a short period of time in which to attempt recovery, forbearance became a longer-term approach designed to hide the number, and the dollar magnitude, of thrift failures from public view. Forbearance also became an increasingly attractive policy choice by the mid-1980s, primarily due to FSLIC's funding shortfall and the unwillingness of lawmakers to appropriate funds necessary to cope with the burgeoning problems of the industry.

### 1. Forbearance, Delays, and Thrift-Resolution Costs

In a study of 952 thrifts that did not meet regulatory capital standards in 1979, DeGennaro and Thomson (1996) find a significant difference in cost between a strategy of prompt resolution versus the present value of delayed resolution that these firms actually experienced. They estimate that the direct costs associated with the delayed closure of 372 independent thrift institutions exceeded the costs of prompt closure by over \$16 billion, as measured in 1979 dollars.

Kane and Yu (1996) define a "forbearance thrift" as one that is insolvent using a mark-to-market rule. They estimate the cost of forbearance for a changing sample of firms from quarter to quarter between 1985 and 1989 and find that each year of forbearance increased the ultimate cleanup cost of the thrift crisis by approximately \$8 billion.

The high cost of forbearance shown in these studies came about because a large number of thrifts that were granted forbearance did not recover. Continued operations resulted in a slow decline in both the franchise value and the asset quality of the institutions. Thus, the final resolution costs were substantially higher than would have been the case with prompt resolution.

The empirical consequences of forbearance are examined by DeGennaro, Lang, and Thomson (1993), who track the 300 largest thrift institutions to post

capital deficiencies in 1979 but were allowed to continue to operate due to regulatory forbearance. They report that, of these 300 troubled thrifts, only 24% recovered by 1989, 55% failed or merged with another institution, and 21% continued to operate as independent institutions. DeGennaro et al. conclude that the task of turning around troubled thrifts was never easy, but regulatory forbearance was likely to have been an expensive policy for taxpayers.

Barth, Bartholomew, and Bradley (1990) report that the actions of regulatory accounting principles (RAP)-insolvent institutions were similar to those of healthy thrifts in the early 1980s, but markedly different by the late 1980s. Moreover, the increase in non-performing assets, particularly for insolvent institutions, suggests that the thrift problem changed from an interest-rate-spread problem in the early 1980s to a credit-quality problem later in the decade.

Ely (1993) reports that the accumulated losses of the FSLIC increased from a low of about \$30 billion in June 1983 to over \$180 billion by June 1992. In retrospect, mid-1983 would appear to have been the optimal time to close all market value insolvent, or "zombie," thrifts. These findings also illustrate the enormous increase in taxpayer costs that resulted from regulatory delays in closing insolvent institutions. Ely (1993) also shows how the "thrift problem" changed from an interest-spread to a credit-quality problem by the mid-1980s. FSLIC losses that resulted from the high interest rates during the early 1980s increased from about \$30 billion in mid-1983 to \$55 billion by mid-1992. In contrast, the accumulated losses of the FSLIC that resulted from asset-quality problems blossomed from close to zero in mid-1983 to some \$135 billion by mid-1992.

## 2. Regulatory Forbearance and Thrift Investment Strategies

DeGennaro, Lang, and Thomson (1993) examine the investment strategies of the sample of the 300 largest thrifts to post capital deficiencies in 1979. They report that the institutions that eventually failed followed riskier, higher-growth investment strategies than did those institutions that eventually returned to health. Regulatory forbearance provided strong incentives for such behavior. As Kane (1989a, 1989b) argues, portfolio managers saw the ratcheting up of portfolio risk as a survival strategy. This appeared to be a rational policy for thrift managers, given the downside protection of flat-rate deposit insurance. The findings of DeGennaro, Lang, and Thomson (1993) are evidence of the moral-hazard problem caused by flat-rate deposit insurance, as are the findings of Barth, Bartholomew, and Bradley (1990), who find that failed thrifts had disproportionately high levels of commercial

mortgages, real estate loans, and direct equity investments as compared to the average thrift.

McKenzie, Cole, and Brown (1992) examine the impact of regulatory changes that gave thrift institutions expanded investment powers. In particular, they track the performance of non-traditional assets that thrift institutions were allowed, starting in the early 1980s. They find that the returns on these non-traditional assets were significantly lower than the returns on traditional thrift assets for the years ending June 30, 1987 and June 30, 1988. McKenzie et al. also report that this return differential had a more pronounced impact on capital-deficient institutions, which had shifted their investment policy to bet on non-traditional investments and to take advantage of the downside protection provided by deposit insurance. They interpret their findings as supporting the hypothesized deleterious effect of moral hazard on insolvent thrifts, and argue for the prompt enforcement of capital standards and early closure of insolvent institutions.

Brewer (1995) also finds evidence that between July 1984 and December 1989, poorly capitalized, failing S&Ls increased their investment in relatively risky assets. This increase in risk was priced by the capital markets and yielded higher returns for shareholders of poorly capitalized thrifts. Brewer interprets this evidence as supporting the argument that the moral-hazard problem created by flat-rate deposit insurance created adverse incentives for thrift managers, which in turn led to larger losses for failed institutions.

Strahan (1995) finds that between 1987 and 1989, FSLIC-insured thrifts paid more than FDIC-insured banks to attract deposits, and that weaker thrifts paid more than safer institutions. Further, by using insured deposits to fund risky investments, many weak thrifts grew rapidly during this period. Strahan concludes that weak and insolvent thrifts may have paid higher rates to attract deposits, which in turn were used to take large risks. His evidence also suggests that flat-rate deposit insurance created adverse incentives.

Blalock, Curry, and Elmer (1991) provide additional insight into the relationship between investment strategies adopted by weak institutions and the resolution costs of eventual failure. They examine the actual resolution cost of failed thrifts resolved by the FSLIC between 1984 and 1987 and find that resolution costs are related to the risk level of the firm's assets and its level of core deposits. The resolution cost is significantly lower for thrifts with high core deposits and low-risk assets. This finding is consistent with the proposition that regulatory forbearance created an incentive for thrift managers to increase the firm's portfolio risk, which, in turn, resulted in higher costs for the taxpayer.

The moral-hazard problem facing owners of financial institutions has also been examined by studying the relationship between insider ownership and the firm's risk-level. Cebenoyan, Cooperman, and Register (1995) focus on insolvency risk, and find a positive (negative) relationship between managerial ownership and risk-taking behavior during periods of regulatory leniency (stringency). These findings support the existence of a moral-hazard problem.

Saunders, Strock, and Travlos (1990) and Knopf and Teall (1996) focus on market-based measures of risk, and find a positive relationship between insider ownership and firm risk during periods of regulatory leniency, such as the period prior to the passage of FIRREA. In contrast, Chen, Steiner, and Whyte (1998) observe a negative relationship between insider ownership and risk for the post-FIRREA period, a finding that is consistent with those of Cebenoyan, Cooperman, and Register (1995). Cebenoyan, Cooperman, and Register (1999) find that manager-owned thrifts exhibited unprofitable (profitable) risk-taking in the mid-1980s (mid-1990s), which is also consistent with the existence of a moral-hazard problem.

The findings of these studies support the arguments made by Kane (1989a, 1989b) regarding the adverse-incentive problems facing thrift regulators and managers during this period, as well as the conclusions of Kormendi et al. (1989). The lack of political will to confront the crisis situation in the industry created severe funding problems for the FSLIC, and led to its eventual bankruptcy. The practice of regulatory forbearance was the logical response by self-interested regulators, particularly given the lack of political accountability from above. For managers of weak and/or insolvent institutions, regulatory forbearance provided a survival opportunity, and their rational response was to increase portfolio risk in the hope of growing out of their current problems. Finally, the downside protection of flat-rate deposit insurance made such risk taking a cost-free exercise for institutions that were already market-value insolvent.

## B. The Management Consignment Program

The effective insolvency of the FSLIC and the increasing supply of weak institutions led to the creation of the management consignment program (MCP) in 1985. Under this program, the current management was replaced with an outside management team, who were charged with running the institution and returning it to profitability. The primary objective of the program was to serve as a short-term measure. The program was designed to provide regulators with a new approach for tracking troubled institutions, an approach that did not involve regulatory forbearance,

conservatorship, or liquidation.

Barrow and Horvitz (1993) analyze the functioning of the MCP. They find that although the program preserved asset values, and lowered the size of the losses to the insurance fund, it also increased the probability of insolvency for firms in the program as compared to firms not in the program. The reason for this was that the managers appointed by federal regulators were paid on a contract basis. Therefore, these managers had an incentive to be extra risk averse in their stewardship of the failing institution. The result was that these managers avoided taking any investment risks, including those that might result in a recovery for the institution. This, however, was not the case for firms not participating in the MCP. Barrow and Horvitz conclude that although delays in resolution had both good and bad effects, resolving weak institutions as early as possible was optimal. When we consider the binding resource constraints, such as those faced by the FSLIC in the mid-1980s, the MCP would appear to have been one of the better options available to federal regulators, better at least than the policy of regulatory forbearance.

The finding that managers appointed by federal regulators under the MCP were extremely risk averse offers an interesting contrast to the deposit-insurance-induced risk-increasing incentive for existing thrift managers. The empirical evidence suggests that when a particular thrift became market-value insolvent, the appropriate regulatory procedure would have been to resolve the institution via liquidation or an assisted merger. Permitting the institution to continue operation, either under the existing management (forbearance) or under a new management team appointed by regulators, were policies that did not serve to minimize the resolution cost to the insurance fund.

## C. Failed Thrift Resolution: Evidence on Acquiring Firm Gains

Throughout most of the 1980s, the approach to resolving failed institutions was either by liquidation or a variation on the P&A process used by the FDIC for resolving failed banks. Due to the FSLIC's cash flow problems, liquidation was not the preferred approach. Instead, the FSLIC first made a list of eligible acquirers for a particular institution and then requested sealed bids from them. This bidding process narrowed the selection to one or two potential acquirers. The final terms of the acquisition were determined through a process of negotiation with the firms.

However, there were potential problems with the process used by the FSLIC. These included placing undue restrictions on eligible bidders; problems in estimating the market value of assets of the failed institutions being acquired in the merger; and the



provision of non-cash incentives, such as yield guarantees and put back provisions in lieu of cash, to the acquiring firm.

Cole, Eisenbeis, and McKenzie (1994) suggest that the FSLIC was at a bargaining disadvantage, primarily because acquiring firms in failed thrift auctions almost always used information obtained during a due-diligence examination of the firm. The FSLIC, due perhaps to shortages of staff and funds, was forced to rely almost exclusively on call report data to estimate the value of the assets of the failed institution. Thus, there was an information asymmetry about asset values between the buyer and the seller of the failed thrift. One consequence of this information asymmetry was that it could create a bargaining disadvantage for regulators. Such a disadvantage could lead to the provision of excessive subsidies to firms acquiring failed thrifts, and thus to higher resolution costs for taxpayers.

Several studies of the FSLIC's resolution processes conclude that these deals were usually very attractive to acquiring firms on average, and the net result was that regulators left money on the table. Balbirer, Jud, and Lindahl (1992), Gupta, LeCompte, and Misra (1993), and Cole, Eisenbeis, and MacKenzie (1994) examine the stock price impact of the announcement of the acquisition of failed thrifts from the FSLIC during the 1980s. These studies report positive, and statistically significant, abnormal returns to the shareholders of the acquiring firm. These abnormal returns are about 1 to 2% during the two-day announcement window used in these studies. The findings support the proposition that resolution procedures used by the FSLIC, including bidder restrictions and non-cash guarantees, actually resulted in federal subsidization of these deals, again adding to the taxpayer cost of resolving the thrift problem.

### III. Resolving Problem Thrifts: The Post-FIRREA Experience

The large number of failures during the 1980s, coupled with media reports of fraud and mismanagement in the industry, made it impossible for regulators and lawmakers to keep the thrift problem under wraps, and led to the passage of the Financial Institutions Reform, Recovery, and Enforcement Act (FIRREA) in August 1989. This legislation made significant changes in the way regulators dealt with financial problems in the thrift industry. Among these changes was a restructuring of the oversight, insurance, and failure resolution functions into three distinct entities: the Office of Thrift Supervision (OTS); the Savings Institutions Insurance Fund (SAIF), which was managed by the FDIC; and the Resolution Trust

Corporation (RTC). In August 1989, the RTC was given independent funding authority, with an initial limit of \$50 billion. The RTC was not allowed to provide tax benefits, or capital or accounting forbearance as had the FSLIC in earlier transactions.

There is an instructive contrast between the failure-resolution task faced by the FSLIC and that of the RTC. The FSLIC performed both the insurance and the failure resolution functions. The near bankruptcy of the insurance fund left the FSLIC little choice but to follow the policies of delaying closure of weak institutions, forbearance, and the provision of open-ended guarantees to firms willing to acquire failed institutions. FIRREA separated the insurance and failure resolution functions, and eliminated, at least in principle, one serious problem, vesting both the insurance and failure resolution authority in the FSLIC's hands.

A problem created by this regulatory setup was that the FSLIC had an incentive to protect the financial viability of the insurance fund, an incentive that resulted in delayed closures for many insolvent institutions and consequent increases in taxpayer costs. In addition, its independent funding authority was designed to enable the RTC to discontinue the practice of providing non-cash incentives to acquiring firms and to permit, much more so than in the earlier era, the liquidation of insolvent institutions when this was deemed to be the most appropriate course of action. However, the reality that unfolded over the next few years was Congressional foot-dragging on the necessary borrowing authority for the RTC. This again led to resolution delays and increased taxpayer costs.

#### A. Regulatory Approaches: Post-FIRREA

Capital forbearance, as practiced by FSLIC, was disallowed by FIRREA. However, regulators continued to have substantial flexibility in interpreting and implementing regulatory procedures and requirements. Such flexibility, coupled with funding shortages, led to resolution delays, which affected the total costs resulting from the failure of a particular thrift. The primary approaches to failure resolution in the post-FIRREA period remained deposit payoffs and federally assisted acquisitions of failed thrifts by solvent financial institutions.

##### 1. Resolution Costs

Ely and Varaiya (1997) examine the resolution costs of 459 failed thrifts resolved by the RTC between 1989 and 1994, and find that delays caused a significant increase in resolution costs. For an average thrift, in terms of cash provided and assets and liabilities retained by the RTC, they estimate a one-month delay increased resolution costs by \$1.7 million. They



attribute this increase in costs to a reduction in the market value of the assets of the failed institution while it remained in regulatory control, and to a decline in the franchise value of the institution. Ely and Varaiya conclude that a resolution policy aimed at disposing of assets, rather than a policy aimed at increasing bidder participation, results in lower resolution costs.

This finding supports Kane (1990) and Kormendi et al. (1989), who argue that the appropriate resolution mechanism should be one under which the acquirer could purchase any or all parts of the failed entity that it chooses, and that the resolution agency should hold the failed institution for only the minimal time necessary. Delaying resolution increases taxpayer costs, regardless of whether the delay is caused by regulatory forbearance or is a consequence of the resolution procedures employed.

In a related study, Fraser and Zhang (1997) examine 79 of the 91 failed thrifts resolved by the FSLIC during 1988. They focus on the resolution costs resulting from two different bidding procedures, package bidding versus bidding for individual institutions. They find that package bidding attracted more qualified bidders, and resulted in significantly lower resolution costs than did the sale of individual institutions. These findings support the proposition that the resolution authority is best served by packaging asset sales in such a way as to return management to the hands of profit-seeking entities as quickly as possible.

Ely and Varaiya (1996) extend the analysis of RTC resolution costs to include the opportunity cost of taxpayer funds committed to the RTC. They argue that, since these funds could well have been committed to other value-enhancing investments, there is an opportunity cost associated with using these funds for the thrift cleanup. Their estimate of opportunity costs raises the estimated RTC cleanup costs from \$90.1 billion to between \$112 and \$146 billion. Ely and Varaiya argue that omitting this element from the estimates of failure resolution costs biases regulatory choices in favor of resolution delays, because one of the costs inherent in this strategy is artificially set equal to zero.

## 2. Evidence on Acquiring Firm Gains

The RTC's most commonly used resolution methods continued to be the P&A and insured deposit transfer (IDT). The difference was that the RTC streamlined the closed-bid auction process used to identify the winning bidder. The RTC also had the cash available to eliminate the provision of non-cash incentives that had resulted in taxpayer subsidies to winning bidders in FSLIC auctions.

Horvitz and Lee (1994) examine gains to commercial banks that acquired failed thrifts from the RTC between

August 1989 and June 1990. For a sample of 75 transactions, they report finding a small negative, but not statistically significant, announcement-period abnormal return to the acquirers in these transactions. Gupta, LeCompte, and Misra (1997a) examine a sample of 138 announcements of failed thrift acquisitions from the RTC between January 1990 and December 1992 and find that these transactions did not yield positive abnormal returns to the acquiring firm. Gosnell, Hudgins, and MacDonald (1993) also report finding no significant wealth impact resulting from the purchase of a failed thrift from the RTC.

In contrast, as documented in Balbirer, Jud, and Lindahl (1992), Gupta, LeCompte, and Misra (1993), and Cole, Eisenbeis, and Mackenzie (1994), FSLIC procedures did result in positive abnormal returns. These findings imply that the changes in resolution procedures instituted by FIRREA resulted in a decline in taxpayer costs of resolving failed institutions.

In a related study, Stover (1997) examines the wealth impact of acquiring capital-impaired thrifts from the RTC under the accelerated resolution program (ARP). This program was managed jointly by the OTS and the RTC. Its objective was to intervene before insolvency, thus reducing overall regulatory expenditures resulting from thrift failure. For a sample of 18 transactions between 1990 and 1992, Stover reports a statistically significant abnormal return of 2.74% that accrued to firms that acquired failed thrifts under the ARP. In contrast, the abnormal return for a sample of 53 firms that acquired failed thrifts from the RTC during same period is not statistically significant, a result that is consistent with those of Gupta, LeCompte, and Misra (1997a), Horvitz and Lee (1994), and Gosnell, Hudgins, and MacDonald (1993).

Stover (1997) also examines the relationship between the observed abnormal returns, the number of bidders in the auction, and the amount of assistance provided by the RTC. He concludes that acquirer gains in these mergers can be explained by the franchise value of the acquired institution.

## IV. Resolving Problem Banks: The FDIC's Experience

Savings and loan associations were not the only depository institutions facing severe financial problems during the 1980s. The number of commercial bank failures also accelerated during the second half of the decade, severely testing the failure-resolution capability of the FDIC.

### A. Changes in the Competitive Environment

The macroeconomic instability that resulted from sharp increases in inflation and interest rates in the

late 1970s posed a severe challenge for commercial banking firms in the US. Beginning in the 1970s, a series of financial innovations also created severe problems that affected the functioning and profitability of commercial banking firms (see, for example, Mishkin, 1992; Crane and Bodie, 1996; and Greenbaum, 1996 for discussions of these issues). Money market mutual funds, which paid higher interest rates than did banks, siphoned off a large volume of deposits from commercial banks. In addition, because of the increasing use of commercial paper to meet the short-term financing needs of large corporations, many banks lost major corporate clients. The growth of money market mutual funds and the commercial paper market hit the banking industry on both sides of the balance sheet, depleting a significant funding source and simultaneously cutting into what was a highly profitable investment vehicle.

This period also witnessed spectacular growth in information technology, which, coupled with advances in financial theory and applications, led to the growth and expansion of securitization in an increasing variety of assets. For example, the home mortgage business slowly began to move away from being a single activity conducted by banks and S&Ls, to three component activities conducted by three new and specialized intermediaries: mortgage origination, mortgage servicing, and loan funding. The disaggregation of financial activities and resulting specialization made it difficult for traditional banking firms to compete, which hurt their present profitability and future viability. In addition, the growth of the OTC and exchange-traded derivatives market gave customers alternatives to traditional banking products, such as forward contracts and letters of credit.

The existing regulatory structure for banking and thrift institutions severely limited their ability to maneuver and respond to increasing competitive pressures. The regulatory changes of the early 1980s, by deregulating deposit pricing and expanding the set of permissible investment activities for thrift institutions, actually increased the level of competition faced by commercial banks. Although banks and thrifts could now compete for deposits with money market funds, the policy of providing flat-rate deposit insurance to depository institutions remained in place. This downside protection created an incentive for weaker depository institutions to offer higher interest rates to attract deposits.

The moral-hazard problem, created by flat-rate deposit insurance, coupled with increased competition, regulatory forbearance, an uncertain interest rate environment, and weakness in the real estate sector led to the collapse of increasing numbers of commercial banks during the 1980s. These failures imposed severe

losses on the FDIC, and led to the eventual passage of the FDICIA in 1991.

## B. FDIC Resolution Procedures

The procedures used by the FDIC to resolve bank failures were similar to those used by the FSLIC and the RTC. In general, there were three alternative courses of action (see Bovenzi and Muldoon, 1990, for a discussion of policy issues faced by the FDIC when it chose among different approaches to failure resolution). The first approach was a deposit payoff, in which the FDIC would close the institution, pay off the insured depositors, and liquidate the assets of the failed bank. The second procedure was the P&A transaction, in which the FDIC arranged a merger between the failed bank and a healthy institution. The third approach, called an insured deposit transfer (IDT), was a variant of the P&A, in which the FDIC arranged a merger in which a solvent institution would acquire all the insured deposits and other liabilities of the insolvent bank. The primary difference between a P&A and an IDT was that in the IDT the acquiring firm took over a relatively small volume of the failed bank's assets.

The pace of bank failures accelerated in the second half of the 1980s, and the vast majority of these failures were resolved using either the P&A or the IDT approaches. Because the procedures used by both the FSLIC and the FDIC are similar in principle, the questions worth examining here are whether the resolution cost experience of the FDIC was comparable to that of thrift regulators, and whether acquiring firms in failed bank auctions obtained positive and statistically significant abnormal returns, similar to firms that acquired failed thrifts from the FSLIC.

## C. Regulatory Approaches

Forbearance, liquidation, P&A mergers, and IDTs had differing effect on the costs of failure resolutions. In this section, we summarize the evidence concerning the financial consequences of each of these regulatory approaches.

### 1. Forbearance

Brinkmann, Horvitz, and Huang (1996) examine the efficacy of capital forbearance as practiced by the FDIC between 1986 and 1989. They find that most of the 325 banks that were in the FDIC's capital forbearance program during this period did not experience any improvements in their capital ratios. This finding provides a simple measure of the success, or lack thereof, of this policy. Brinkman et al. also find that it is not possible to use only pre-forbearance data to distinguish firms that experienced capital improvements from those that did not improve. They conclude that although forbearance may have yielded

large savings to the FDIC in isolated cases, on average, the policy was unlikely to reduce losses to the deposit insurer. This conclusion supports the findings of other empirical studies that investigate the impact of forbearance on resolution costs in the thrift industry.

## 2. Resolution Costs

James (1991) examines the losses realized by the FDIC for a sample of 96 deposit payoffs, 287 P&As, and 29 whole bank transactions for the 1985 to 1988 period. James defines a loss as the difference between the book value of the bank's assets at the time of closure, and either the value of its assets in FDIC receivership or the value of its assets to an acquirer. Losses on assets were substantial, averaging 30% of the failed bank's assets. James also finds that the magnitude of the losses differed according to the resolution method used by the FDIC. The average ratio of loss on assets to total assets was 34.25% for payoffs, which is significantly greater than the 30.4% figure for P&As. This evidence suggests that a significant portion of going-concern value is lost when a bank is liquidated, and it also implies that the loss of charter value may make liquidation the least desirable option for the resolution agency. However, it is also possible that liquidation was the only possible avenue open to the FDIC for certain institutions, perhaps because extremely poor asset quality made arranging a P&A impossible for the regulators.

James (1991) also shows that the direct costs of resolution were substantial, averaging 10% of asset value. The average ratio of direct expenses to total assets for payoffs is not significantly different from that of P&As. Asset values also appear to be lower in FDIC receivership, because the magnitude of the realized losses increased with the proportion of the failed bank's assets that were retained by the government. This finding suggests that, when conducting P&A auctions, the FDIC should have tried to transfer the maximum possible volume of the assets of the failed institution to the acquiring firm, and liquidated the remaining assets as rapidly as possible.

Bovenzi and Murton (1988) examine the FDIC's resolution experience for a sample of 218 bank failures between 1985 and 1986. For a sample of 168 P&As and 50 payoffs, they find that the loss on assets averaged 32% for P&A deals and 35.9% for deposit payoffs. These results support the findings reported in James (1991).

Brown and Epstein (1992) update the resolution-cost model used by Bovenzi and Murton (1988) and examine resolution costs for 619 bank failures from 1986 to 1990. During this time most of the failed banks' assets remained in receivership, a constraint that was imposed by data limitations. Therefore, the findings of this study

apply only to cases in which the FDIC liquidated bank assets. The findings do not shed light on how the private sector performed in disposing of the assets. Brown and Epstein's analysis shows that net recoveries ranged from 38 cents on the dollar for owned real estate to 88 cents on the dollar for securities, and averaged 50 cents on the dollar across all asset categories. They also find that direct expenses were almost exclusively confined to owned real estate assets, and averaged almost 9% of the receivership book value for this category. They find that losses on assets assigned to receivership averaged 29.2 percent overall, although this figure varied widely across the asset categories.

## 3. P&A Transactions: Evidence Concerning Acquiring Firm Gains

Pettway and Trifts (1985) examine 11 P&A transactions between 1972 and 1981. They find that acquiring firms experienced stock price increases during the period preceding the bid, but price declines immediately following the acquisition. They conclude that bidders overpay when acquiring failed banks.

James and Weir (1987), in a study of 19 P&A transactions between 1973 and 1983, find positive and statistically significant abnormal returns to winning bidders at the time of the bid announcement, which suggests that acquiring firms gain in these mergers. James and Weir also find a negative relationship between the abnormal return to the acquiring firm and the number of bidders in the auction. They use this finding to conclude that FDIC bidder restrictions result in wealth transfers from the insurance fund to acquiring firm stockholders, and that the observed abnormal return is partly a consequence of such wealth transfers.

Bertin, Ghazanfari, and Torabzadeh (1989) study 33 P&A transactions between 1982 and 1987. They find a positive and statistically significant announcement-period abnormal return to acquiring firm stockholders. This finding supports James and Weir (1987), as do the results of Cochran, Rose, and Fraser (1995), who study the acquiring firm stock price response to announcements of 58 P&A transactions between 1982 and 1991 period.

Zhang (1997) examines the differential wealth effects of failed bank acquisitions for a sample of first-time acquirers, and compares them to firms that are repeat acquirers. Between 1980 and 1990, he finds that the 54 repeat acquirers in his sample obtain positive and statistically significant abnormal returns. In contrast, he finds abnormal returns to 74 first-time acquirers that are small but not statistically significant. He interprets these results as supporting the argument that repeat acquirers have either an experience or informational advantage, or both, over first-time acquirers, and that repeat acquirers



are able to gain by reducing the winning bid.<sup>1</sup>

O'Keefe (1992) examines the performance of firms that acquired failed banks from the FDIC. O'Keefe compares the performance of 123 banks that acquired failed institutions between 1984 and 1992 with that of a control sample of 346 banks that acquired solvent banks during period. He finds that both groups of firms managed the large increase in assets without any major problems. However, neither group realized any scale or scope economies from the mergers. Firms that acquired failed banks maintained their profitability, but the results on FDIC subsidies to these firms were inconclusive. O'Keefe also finds that substantial increases in market share resulted from these federally assisted acquisitions of failed banks, although he did not find that such gains in market share were related to profitability.

Murphy (1992) examines the possibility that firms acquiring a failed bank could enjoy cost savings by closing the failed bank's underutilized branches. His evidence supports this proposition. In addition, since in-market banks are better positioned to obtain such cost savings, Murphy suggests that they should have an advantage over out-of-market banks when bidding for failed bank franchises. Taken together, the findings of the O'Keefe (1992) and Murphy (1992) studies suggest that, when managed appropriately, acquiring a failed bank from the FDIC can be a value-enhancing transaction.

#### 4. Insured Deposit Transfers: Evidence Concerning Acquiring Firm Gains

In an insured deposit transfer (IDT), the winning bidder acquires all of the insured deposits, but only a minimal portion of the assets of the failed institution, from the FDIC. Gupta (1997) examines the acquirer price response to the announcement of 35 IDT agreements, negotiated by the FDIC, between 1984 and 1992. The study reports small but statistically significant positive abnormal returns accruing to the winning bidders. Based on a regression analysis, Gupta concludes that at least part of the excess returns are due to the positive informational effects that arise when the acquiring firm receives a regulatory seal of approval. He also notes a negative relationship between the abnormal returns and the number of bidders in the auction. This finding suggests that part of the acquirer's gains were a result of a wealth transfer from the insurance fund.

<sup>1</sup>For a sample of 219 sealed-bid auctions conducted by the FDIC over the period from 1975 to 1985, Giliberto and Varaiya (1989) find evidence suggesting that winning bidders do not correct for the winner's curse in these auctions. This finding is intriguing, since it suggests that acquiring firms overpay for failed banks. Nevertheless, the stock return studies cited above report positive and statistically significant gains accruing to winning bidders in FDIC-arranged P&A auctions.

The stock returns studies suggest that the procedures used by the FDIC to resolve failed banks result in small excess returns that accrue to stockholders of the acquiring firm. These findings could indicate that acquiring firm gains are driven by synergies between the two firms. However, it could also be true that a flawed auction process generated wealth transfers from the insurance fund to acquiring firm stockholders. The negative relationship between the estimated abnormal returns to acquiring firms and the number of bidders in the auction reported by James and Weir (1987) and Gupta (1997) suggests that incorporating procedures designed to reduce restrictions on bidder participation in FDIC failed bank auctions could have reduced the taxpayer cost of resolving failed financial institutions.

#### V. Changes Following the Passage of the FDICIA

Kane (1990) argues that, although regulatory changes instituted under FIRREA led to some improvements in the resolution process for failed institutions, the act did not eliminate all of the incentive-conflict problems. Kane argues that the highly visible political figures and regulators on the RTC oversight board tried to maximize post-government employability. Consequently, they had an incentive to hide the industry's problems and to practice delay tactics that added to taxpayer costs for failure resolution. In addition, arbitrary constraints placed on RTC activities, such as requiring that assets be sold in "as-is" condition, and resolving institutions on a one-at-a-time basis, resulted in inefficient asset resolution and added to taxpayer costs. The limited funding authorized for the RTC and congressional foot dragging on additional funding requests also diminished the ability of the resolution agency to perform a quick and efficient transfer of the assets of failed institutions back into private hands.

The FDIC Improvement Act (FDICIA) of 1991 addressed several of the problems remaining after FIRREA. The act includes features designed to remove the disincentives that resulted from the existing insurance structure, and at the same time provide for a recapitalization of the FDIC. The act also addressed such issues as the need for higher capital levels, risk-based deposit insurance, and a strengthening of the regulatory responsibility for early intervention.

Kaufman (1995) argues that although sections of the FDICIA were weakened in the journey from theory to Congressional enactment and from enactment to enforcement, the legislation nevertheless helped to improve the health of the banking industry. It has also



improved regulatory incentives and behavior.

Liang, Mohanty, and Song (1996) use a sample of 164 bank holding companies to examine the stock-price reaction to events leading to the passage of the FDICIA. They find that shareholders of well-capitalized banks benefited from the passage of the legislation, but that those of undercapitalized banks experienced significant losses. Carow and Larsen (1997) report a negative price reaction to the passage of the FDICIA for a sample of 56 bank holding companies, but they conclude that safer banks were less affected by the increased regulatory requirements. These studies suggest that the market perceived the changes in capital requirements, the new risk-based insurance system, and the other changes represented by the FDICIA as positive steps for the health of the banking system, because the legislation imposed costs on the weak institutions and provided incentives to improve both capital positions and portfolio risk levels.

### A. The Too-Big-to-Fail Doctrine

Among the various changes in regulatory practice resulting from the FDICIA is a substantive change in the policy commonly known as "too big to fail" (TBTF). Articulated by the Comptroller of the Currency after the failure of Continental Illinois in 1984, the too-big-to-fail policy is based on the premise that the failure of a large institution could have a domino effect, starting bank runs that could bring down the financial system.

O'Hara and Shaw (1990) and Black, Collins, Robinson, and Schweitzer (1997) find that the comptroller's statement on the TBTF policy resulted in significant changes in security values, both for large banks and also for smaller banks in the system. Prompt corrective action, least-cost resolution, and mandatory-closure provisions of the FDICIA work to negate, but do not expressly prohibit, the TBTF policy.

Kaufman (1991) argues against continuation of the TBTF policy. He suggests that the argument for retaining the policy—the possibility of bank runs leading to a general collapse of the financial system—is a myth. He argues that the policy creates fundamentally undesirable distortions in the valuation and monitoring effectiveness of financial institutions. In contrast, Ely (1991) suggests that elimination of the TBTF policy is an impossible dream. He argues that removal of TBTF is based on the belief that more depositor discipline must be injected into the banking system, and that such discipline would in fact result if the policy were abandoned. However, Ely argues that the importance, and indeed the effectiveness, of monitoring by large depositors is only of third-level importance. More important is the monitoring role of stockholders and regulators. Mishkin (1992) takes the middle ground,

arguing that regulators should be permitted the discretionary use of TBTF.

The FDICIA has weakened the TBTF policy. Since January 1, 1995, regulators are only allowed to impose the TBTF doctrine under extremely stringent conditions. Regulators must get the written approval of two-thirds of the Board of Directors of the FDIC and the Board of Governors of the Federal Reserve System. They must also obtain permission from the Secretary of the Treasury, after the secretary has consulted with the President of the United States. The FDIC is also required to recover any losses incurred from protecting uninsured claimants. This recovery is effected through a special assessment on all insured banks. As suggested by Benston and Kaufman (1997), although the TBTF policy continues to exist in principle, it is likely to be used very rarely, if at all.

### B. The Role of Capital

It is difficult to overstate the importance of capital in a regulatory environment that includes deposit insurance. If a firm gets into trouble, capital serves as the first line of defense against losses to the insurance fund. Therefore, the maintenance of an appropriate risk-adjusted capital position is critically important. At least two of the components of capital—common equity and subordinated debt securities—are traded in the financial markets. They serve a valuable monitoring function for the institution's activities. This type of market monitoring is particularly important in a system in which problems could arise because of laxity in regulatory control, for example, as might be brought about by the self-interests of regulators themselves.

Higher levels of capital also reduce the insured institutions' incentive to engage in risk-increasing activities that can increase the value of the firm's equity. In other words, the higher the capital position of the firm, the greater the downside risk associated with risk-increasing activities.

The FDICIA classifies institutions into five capital categories, ranging from well capitalized to seriously undercapitalized. Strict regulatory sanctions, such as restrictions on asset growth and dividends, are applied to firms in the lower categories. New capital requirements and the prompt closure rule have resulted in substantial increases in the capital levels of US financial institutions in the 1990s. Berger, Herring, and Szego (1995) estimate that the aggregate equity-to-assets ratio rose by over 30% over the four years from 1989 to 1993, from 6.21% to 8.01%. Kaufman (1995) reports that by the end of 1993, US banks had their highest capital levels since the 1960s. Regulatory standards classified only 0.05%

of banks as undercapitalized, as compared to 4.5% of the banks in 1990.

Berger, Herring, and Szego (1995) identify three main characteristics that any instrument should have to be considered as capital. First, the claims of the capital instruments should be junior to those of the deposit insurer, thus serving as a buffer against losses to the insurance fund. Second, capital instruments should be "patient money," i.e., they are difficult to redeem in times of financial crisis. This characteristic buys time for regulators to deal with the crisis. Third, capital instruments should help to reduce the bank's incentive to use the deposit insurance safety net, and increasing portfolio risk in times of trouble. Equity capital and subordinated debt satisfy the first two criteria specified by Berger, Herring, and Szego, and are acceptable candidates for inclusion in regulatory capital.

Kroszner and Strahan (1996) examine a pattern of mutual-to-stock conversions of thrifts during the 1980s, and report that regulators used this process to attract private capital into weak institutions by easing the regulatory burden on converting institutions. However, regulators also permitted converting institutions to pay dividends rather than requiring them to rebuild capital through retentions. In contrast to non-financial firms, Kroszner and Strahan find that a number of distressed thrifts were allowed to initiate and even increase dividends.

The statistically significant gains to stock-held institutions that acquired mutual thrifts during the 1980s, documented by Gupta, LeCompte, and Misra (1997b), support the potential for gains from exploiting weak regulatory oversight in such transactions. In the future, the FDICIA, with its regulatory classifications and mandatory regulatory actions for firms with deteriorating capital positions, should be the equivalent of private debt covenants. The FDICIA could thus prevent a repeat of undesirable activities such as allowing financially strapped institutions to pay dividends.

Not included in the FDICIA is a somewhat different mechanism to control the risk-increasing incentive created by deposit insurance. This mechanism imposes a contingent liability on bank shareholders. Esty (1998) finds that between 1863 and 1935, the imposition of contingent liabilities on bank shareholders had risk-reducing effects, such as lower proportionate investments in risky assets, lower equity and asset volatility, and less likelihood of increased investments in risky assets at times when a firm's net worth declined. Policies such as a contingent liability program could manipulate the incentives facing managers of financial institutions and thus be useful in designing an overall regulatory structure.

Another important feature of current capital standards is the implementation of the risk-based

capital requirements (RBC) agreed to under the Basel accord, which were fully implemented by 1992. Avery and Berger (1991) analyze the association between bank performance and the RBC relative-risk weights using data for US banks from 1982 to 1989. They find that the RBC constitutes a significant improvement over the old capital standards, and that the requirements are more stringent overall.

Jones and King (1995) find that between 1984 and 1989, the majority of high-risk banks would not have been classified as undercapitalized by the risk-based capital standards, and thus would not have been subject to "prompt corrective action" as required by the FDICIA. Jones and King suggest that the RBC ratios could be more useful if they incorporated an improved standard for loan-loss reserves and assigned greater than 100% risk-weights for problem assets. In a related study, Dahl and Spivey (1995) examine banks that recovered from positions of undercapitalization. Dahl and Spivey find that equity infusions are the primary way in which firms recover rapidly and that growth and profitability have a limited ability to bring capital levels above the regulatory minimums.

Cordell and King (1995) compare the stock market's evaluation of an institution's risk with current regulatory risk-based capital standards. They find that the standards agree, to some extent, on the adequacy of an institution's current capital and required capital infusion, but that the measures of asset risks are not correlated. Their findings suggest a need for changes in the regulatory structure to bring it more in line with market measures of risk.

Kane (1995) argues that regulatory capital is an inefficient means for controlling the risk to the insurance fund, because regulators do not limit risk exposure as much as private entities would. In addition to regulatory capital requirements, Kane advocates more transparency and also privatizing at least some of the monitoring and disciplinary activities traditionally handled by federal regulatory agencies.

### C. The Frequency of On-Site Examinations and Prompt Corrective Action

Under the FDICIA, regulators are required to conduct annual examinations of all institutions, and make more frequent examinations of firms in the lower capital classifications. The need for more frequent on-site examinations is reinforced by the findings of Cole and Gunther (1998) who compare the effectiveness of on-site examination to an off-site monitoring system based on call report data. Their findings suggest that the information content of on-site examinations decays very rapidly. They find that the ability of the off-site monitoring system to predict failure matches that of the on-site

examinations when the regulatory assessment ratings are no more than two quarters old (based on data for the period between 1988 and 1990) or only one quarter old (between 1990 and 1992). Otherwise, the off-site monitoring system was a better predictor than the ratings resulting from on-site examinations.

The FDICIA reflects the lessons learned concerning the cost increases that resulted from resolution delays, and called for "prompt corrective action" for failing institutions. The mandatory closure rule of the FDICIA requires that any institution whose tangible equity capital falls below 2% must be closed. Garcia (1995) reports that this aspect of the law has worked well in practice. The number of critically undercapitalized banks declined from 240 in December 1990 to three in September 1993, and the number of critically undercapitalized thrifts fell from 417 to six over the same time period. Garcia suggests that in addition to an improving economy, the reasons for this decline include improved incentives facing owners (i.e., the consequences for falling below the 2% limit became well known) and regulators (i.e., no more forbearance).<sup>2</sup>

#### D. Risk-Based Deposit Insurance

The FDICIA is also mandated to change deposit insurance from a flat-rate system to one that assesses risk-based premiums, a move whose desirability has been suggested by Barth (1991), Benston and Kaufman (1994), Kane (1985), and Thomson (1987), among others. The objective of this change is straightforward: to increase the cost of deposit insurance for riskier institutions. Under the flat-rate system, well capitalized, safer institutions were effectively subsidizing riskier banks and thrifts. Therefore, a switch to risk-based premiums should be expected to impose a cost on weaker institutions by requiring them to "pay their own way," and benefit well-capitalized institutions by removing the burden of the implicit subsidy imposed by flat-rate insurance.

Cornett, Mehran, and Tehranian (1998) find that well (poorly) capitalized banks reacted positively (negatively) to announcements that suggested passage of a risk-based deposit insurance system between January 1991 and September 1992, and negatively (positively) to announcements that suggested that the legislation might fail. This evidence

supports the proposition that the switch to risk-based deposit insurance would reduce the moral-hazard problem created by flat-rate insurance.

#### E. The Use of Market-Value Accounting: A Missing Element

The drawbacks of using book-value numbers as measures of capital, assets, and other characteristics of financial institutions have resulted in a call for firms to provide relevant information in market-value terms (for example, see, Benston, Eisenbeis, Horvitz, Kane, and Kaufman, 1986; Kane, 1995; and Kane and Yu, 1996). However, the use of market-value accounting has not been mandated by the FDICIA.

Use of market-value accounting would improve the monitoring efficiency of the financial market, and would ease the burden imposed on governmental regulatory authorities. For most non-financial firms, market discipline is taken as a given. The security markets serve as a monitor of corporate activities. In the financial sector, Park and Peristiani (1998) report that riskier thrifts paid higher interest rates and attracted fewer uninsured deposits than did safer institutions. They interpret this finding as supportive of the presence of market discipline. However, Billett, Garfinkel, and O'Neal (1998) find evidence that banking firms are able to undermine market discipline by increasing their reliance on insured deposits as a financing source, particularly following increases in risk. They suggest that this finding casts doubt on the ability of market participants to discipline banking firms effectively in the current regulatory environment, which does not impose any restrictions on the use of different possible sources of financing.

Berger, King, and O'Brien (1991) and Berger, Herring and Szego (1995) examine problems with implementing market-value accounting. They argue that, because financial institutions have large numbers of non-traded assets, it would be difficult to obtain accurate market-value estimates. Estimation problems also create serious verification issues for regulators and other observers of financial statements. Berger, King, and O'Brien (1991) and Jones and King (1995) test approaches that adjust the loan loss reserves account to reflect changes in the riskiness of a bank's loan portfolio. These studies find that these approaches work well and have fewer conceptual and estimation problems than does market-value accounting.

#### F. Some Additional Concerns

The economic recovery in the period immediately following the enactment of the FDICIA led to a dramatic decline in the number of bank failures. Thus, it is difficult

<sup>2</sup>Brous and Leggett (1996) examine the stock-price response to enforcement actions against commercial banks by federal regulators between August 1989 and August 1991. They find a negative and statistically significant average price response to such agreements. They interpret this evidence as suggesting that regulators were not taking "prompt corrective action" during this period, because, if they were, the market would perceive these actions as designed to improve the bank's future prospects, and the result would be a positive stock-price response.



to gauge the effectiveness of the new regulatory provisions both at preventing bank failures and at minimizing resolution costs when individual institutions fail. In short, the changes instituted by the new regulations have not yet been stress tested.

The recapitalization of the FDIC and the mandated regulatory treatment of the institutions in the five different capital classifications are among the features suggesting that the regulatory response will improve the next time problems occur. Benston and Kaufman (1994, 1997) suggest that, nevertheless, the new regulations permit numerous exemptions and opportunities for delay in the application of sanctions on nonperforming institutions. These features could dilute the effectiveness of the law. The regulatory agencies have substantial authority to write a number of the regulations (such as the capital boundaries that define the five capital classifications), as well as to interpret and implement the regulations.

For example, Benston and Kaufman (1994, 1997) note that the 2% capital limit that triggers mandatory resolution is too low. They also suggest that the way in which regulators have defined the capital classifications results in an inordinately small number of institutions being classified as troubled. Such broad authority and discretion provide regulators ample opportunities to weaken the intent of the act, and does nothing to resolve the incentive-conflict problems that led to the S&L and bank failure problems in the 1980s.

## VI. Summary and Conclusions

In a market economy, the occasional failure of individual financial institutions is both expected and a healthy consequence of competition. However, the failure of many insured institutions that costs taxpayers hundreds of billions of dollars signifies quite the opposite, that something is terribly wrong and that the entire regulatory structure should be re-examined. The problems of the thrift and banking industries during the 1980s, and the regulatory and political response to these problems, provide important insights into the design and characteristics of a well-functioning regulatory system for insured financial institutions.

There are three important questions pertaining to the collapse of large numbers of institutions and the resulting staggering losses for the bank insurance fund. First, why did it happen? Second, why were regulators so slow to respond? Third, when regulators did respond, what procedures did they follow, and what were the consequences of their actions? A full understanding of these questions can offer insight into the fundamental characteristics of a better functioning regulatory structure.

Our analysis suggests that the industry's problems

were primarily due to increases in macroeconomic uncertainty, and to inconsistent public policies relating to mortgage financing, deposit rate ceilings, product and geographic diversification, and deposit insurance. The slow regulatory response was largely because of a lack of political willingness to face up to the industry's problems, which itself was due to the financial clout of the constituency involved in the financial mess. In addition, the self-serving behavior of politicians and regulators delayed public recognition of the problem, and thus created a morass of incentive problems, which in the end greatly increased the magnitude of the financial losses. The practice of regulatory forbearance, designed to offer a rational rather than a mechanical response to financial problems of individual institutions, became a mechanism that enabled regulators to postpone the day of reckoning into the indefinite future, at great cost to the nation's taxpayers.

A well-functioning regulatory structure should meet two important requirements. First, it should prevent the failure of large numbers of institutions. Secondly, it should react rapidly at the first sign of impending trouble. It should be able to implement policies that result in a quick resolution of problem institutions at the lowest possible cost to the insurance fund and, ideally, at no cost to taxpayers.

The literature suggests four areas that ensure that these two goals will be met. The four areas are: the firm's capital, the nature of the deposit insurance system, the level of monitoring of individual institutions, and the degree of flexibility in applying regulatory sanctions that is accorded to federal regulators.

### A. Capital

The ability of a depository institution to weather the ups and downs of the financial marketplace is critically dependent on its capital position. Experience suggests that capital levels should be higher than in earlier periods, and that they should be measured in market-value terms. Book values of capital tend to be overstated for institutions in financial trouble, which makes the institutions appear healthier than they really are. In addition, changes in capital requirements for individual firms, or groups of firms, should not be permitted unless the underlying reasons are critical and transparent.

The FDICIA has created five capital categories that make institutions safer by requiring higher levels of capital. However, a moderate increase in capital levels, which would move firms into the lower classifications, appears justifiable. In addition, reducing regulatory flexibility by mandating pre-defined sanctions for firms that experience deterioration in their capital position could reduce the incentive-conflict problems caused



by regulatory self-interest. Well-defined rules reduce the possibility that self-serving politicians or regulators would be able to hide an emerging problem from the public eye at some future date.

### **B. Risk-Based Deposit Insurance**

The flat-rate deposit insurance system created an incentive for managers of depository institutions to maximize the value of their equity position by increasing portfolio risk. This option became even more attractive as the financial position of the firm deteriorated. The empirical evidence confirms the real consequences of such behavior, both in terms of numbers of failures and losses to the insurance fund and to the taxpayers.

As with the five capital classifications, the FDICIA mandated a shift towards risk-based deposit insurance. This change should reduce the potentially damaging increases in portfolio risk. Further refinement of portfolio risk measures and an expanded premium schedule could add more value to a risk-based deposit insurance system.

### **C. Monitoring**

The value of any rulebook of federal regulations depends on the quality of regulatory monitoring that ensures compliance, and also on the possibility of additional monitoring by market participants. Evidence on the failure prediction ability of off-site monitoring suggests that on-site visits should be conducted at least annually and more frequently for capital-poor institutions.

In addition, some variant of market-value accounting is important for obtaining an accurate picture of the financial position of individual institutions. As suggested by Berlin, Saunders, and Udell (1991), the effective abandonment of the "too-big-to-fail" policy, and the expectation that uninsured depositors and creditors should expect losses in bank failures, should increase the level of monitoring conducted by these participants. As suggested by Kane (1995) and Kane and Hendershott (1996), additional monitoring and disciplining benefits could be achieved by making better use of risk-sharing contracts, such as collateralization and coinsurance, to increase the monitoring role of private entities.

### **D. Limited Regulatory Flexibility**

The experience of the 1980s makes it clear that

allowing self-interested regulators to write the rules and then letting them have complete flexibility in interpreting and applying the rules is a recipe for disaster. Benston and Kaufman (1994, 1997) describe an alternative prescription: the "structured early intervention and resolution" approach. This approach has been implemented to a degree by the FDICIA.

The approach limits regulatory flexibility by creating five capital tranches and mandating well-defined regulatory action when a firm's capital position deteriorates. The requirement that regulators take "prompt corrective action" reduces the likelihood of endless regulatory delays in failure resolution. Regulators must also implement the least-cost approach to failure resolution. This requirement reduces the possibility of regulatory or political self-interest imposing unnecessary costs on taxpayers in future bank or thrift failures. It is worth noting that the two proposals for streamlining the Chapter 11 bankruptcy process suggested by Branch (1998) are: first, to introduce an automatic mechanism to award each claimant class consideration according to priority, and second, to quickly transfer control of the bankrupt firm to its rightful owners, the creditors. Regulatory and other delays do not provide efficient and low-cost failure resolution.

Finally, the innovations in the financial markets that have emerged during the last two decades leave no doubt that the future of depository financial intermediaries is likely to be anything but calm and static. Regulatory changes that have already been implemented, and others that could occur in the near future, are changing the entire landscape in which financial firms operate. Issues such as the desirability of universal banking are being discussed (for example, see Benston, 1994). This proposal has enormous implications for the future structure of the financial services industry.

In the regulatory arena, Merton (1995a, 1995b), and others suggest that it may be appropriate to begin thinking about these issues in terms of "functions" performed by intermediaries, rather than in terms of the "intermediaries" themselves. The underlying logic of this approach is that although the functions performed in the marketplace will continue to exist in the future, the institutional structures that perform such functions are likely to be fluid and to change over time. Therefore, it might be useful to think of regulations that are designed around the relatively stable functions of intermediation, rather than around the short-lived institutional forms that perform such functions. ■

## References

- Avery, R.B. and A.N. Berger, 1991, "Risk-Based Capital and Deposit Insurance Reform," *Journal of Banking and Finance* (September), 847-874.
- Balbirer, S.D., G.D. Jud, and F.W. Lindahl, 1992, "Regulation, Competition, and Abnormal Returns in the Market for Failed Thrifts," *Journal of Financial Economics* (February), 107-131.
- Barrow, J.M. and P.M. Horvitz, 1993, "Response of Distressed Firms to Incentives: Thrift Institution Performance under the FSLIC Management Consignment Program," *Financial Management* (Autumn), 176-184.
- Barth, J.R., 1991, *The Great Savings and Loan Debacle*, Washington, DC, The AEI Press.
- Barth, J.R., P.F. Bartholomew, and M.G. Bradley, 1990, "Determinants of Thrift Institution Resolution Costs," *Journal of Finance* (July), 731-754.
- Benston, G.J., 1994, "Universal Banking," *Journal of Economic Perspectives* (Summer), 121-143.
- Benston, G.J., R. Eisenbeis, P. Horvitz, E.J. Kane, and G. Kaufman, 1986, *Perspectives on Safe and Sound Banking: Past, Present, and Future*, Cambridge, MA, MIT Press.
- Benston, G.J. and G.G. Kaufman, 1994, "Improving the FDIC Improvement Act: What Was Done and What Still Needs to be Done to Fix the Deposit Insurance Problem," in G.G. Kaufman, ed., *Reforming Financial Institutions and Markets in the United States*, Boston, MA, Kluwer Academic Publishing, 99-120.
- Benston, G.J. and G.G. Kaufman, 1997, "FDICIA after Five Years," *Journal of Economic Perspectives* (Summer), 139-158.
- Berger, A.N., R.J. Herring, and G.P. Szego, 1995, "The Role of Capital in Financial Institutions," *Journal of Banking and Finance* (June), 393-430.
- Berger, A.N., K.K. King, and J.M. O'Brien, 1991, "The Limitations of Market Value Accounting and a More Realistic Alternative," *Journal of Banking and Finance* (September), 753-783.
- Berlin, M., A. Saunders, and G.F. Udell, 1991, "Deposit Insurance Reform: What Are the Issues and What Needs to Be Fixed?" *Journal of Banking and Finance* (September), 735-752.
- Bertin, W.J., F. Ghazanfari, and K.M. Torabzadeh, 1989, "Failed Bank Acquisitions and Successful Bidders' Returns," *Financial Management* (Summer), 93-100.
- Billett, M.T., J.A. Garfinkel, and E.S. O'Neal, 1998, "The Cost of Market Versus Regulatory Discipline in Banking," *Journal of Financial Economics* (June), 333-358.
- Black, H.A., M.C. Collins, B.L. Robinson, and R.L. Schweitzer, 1997, "Changes in Market Perception of Riskiness: The Case of Too-Big-to-Fail," *Journal of Financial Research* (Fall), 389-406.
- Blalock, J.B., T.J. Curry, and P.J. Elmer, 1991, "Resolution Costs of Thrift Failures," *FDIC Banking Review* (Spring/Summer), 15-26.
- Bovenzi, J.F. and M.E. Muldoon, 1990, "Failure-Resolution Methods and Policy Considerations," *FDIC Banking Review* (Fall), 1-11.
- Bovenzi, J.F. and A.J. Murton, 1988, "Resolution Costs of Bank Failures," *FDIC Banking Review* (Fall), 1-13.
- Branch, B., 1998, "Streamlining the Bankruptcy Process," *Financial Management* (Summer), 57-69.
- Brewer, E., III, 1995, "The Impact of Deposit Insurance on S&L Shareholders' Risk/Return Trade-Offs," *Journal of Financial Services Research* (March), 65-89.
- Brinkmann, E.J., P.M. Horvitz, and Y. Huang, 1996, "Forbearance: An Empirical Analysis," *Journal of Financial Services Research* (March), 27-41.
- Brous, P.A. and K. Leggett, 1996, "Wealth Effects of Enforcement Actions Against Financially Distressed Banks," *Journal of Financial Research* (Winter), 561-577.
- Brown, R.A. and S. Epstein, 1992, "Resolution Costs of Bank Failures: An Update of the FDIC Historical Loss Model," *FDIC Banking Review* (Spring/Summer), 1-16.
- Carow, K.A. and G.A. Larsen Jr., 1997, "The Effect of FDICIA Regulation on Bank Holding Companies," *Journal of Financial Research* (Summer), 159-174.
- Cebenoyan, A.S., E.S. Cooperman, and C.A. Register, 1995, "Deregulation, Reregulation, Equity Ownership, and S&L Risk-Taking," *Financial Management* (Autumn), 63-76.
- Cebenoyan, A.S., E.S. Cooperman, and C.A. Register, 1999, "Ownership Structure, Charter Value, and Risk-Taking Behavior for Thrifts," *Financial Management* (Spring), 43-60.
- Chen, C.R., T.L. Steiner, and A.M. Whyte, 1998, "Risk-Taking Behavior and Management Ownership in Depository Institutions," *Journal of Financial Research* (Spring), 1-16.
- Cobos, D.F., 1989, "Forbearance: Practices and Proposed Standards," *FDIC Banking Review* (Spring/Summer), 20-28.
- Cochran, B., L.C. Rose, and D.R. Fraser, 1995, "A Market Evaluation of FDIC-Assisted Transactions," *Journal of Banking and Finance* (May), 261-279.
- Cole, R.A., 1993, "When Are Thrift Institutions Closed? An Agency-Theoretic Model," *Journal of Financial Services Research* (December), 283-307.
- Cole R.A., R.A. Eisenbeis, and J.A. McKenzie, 1994, "Asymmetric-Information and Principal-Agent Problems as Sources of Value in FSLIC-Assisted Acquisitions of Solvent Thrifts," *Journal of Financial Services Research* (February), 5-28.

- Cole, R.A. and J.W. Gunther, 1998, "Predicting Bank Failures: A Comparison of On- and Off-Site Monitoring Systems," *Journal of Financial Services Research* (April), 103-117.
- Cordell, L.R. and K.K. King, 1995, "A Market Evaluation of the Risk-Based Capital Standards for the US Financial System," *Journal of Banking and Finance* (June), 531-562.
- Cornett, M.M., H. Mehran, and H. Tehranian, 1998, "The Impact of Risk-Based Premiums on FDIC-Insured Institutions," *Journal of Financial Services Research* (April), 153-169.
- Crane, D.B. and Z. Bodie, 1996, "The Transformation of Banking," *Harvard Business Review* (March-April), 109-117.
- Dahl, D. and M.F. Spivey, 1995, "Prompt Corrective Action and Bank Efforts to Recover From Undercapitalization," *Journal of Banking and Finance* (May), 225-243.
- DeGennaro, R.P., L. Lang, and J.B. Thomson, 1993, "Troubled Savings and Loan Institutions: Turnaround Strategies Under Insolvency," *Financial Management* (Autumn), 163-175.
- DeGennaro, R.P. and J.B. Thomson, 1996, "Capital Forbearance and Thrifts: Examining the Costs of Regulatory Gambling," *Journal of Financial Services Research* (September), 199-211.
- Eichler, N., 1989, *The Thrift Debacle*, Berkeley, CA, University of California Press.
- Ely, B., 1991, "Abandoning Too-Big-To-Fail: The Impossible Dream," in *Economic Implications of the "Too Big to Fail" Policy*, Washington, DC, US Government Printing Office, 216-249.
- Ely, B., 1993, "Savings and Loan Crisis," *Fortune Encyclopedia of Economics*, 369-375.
- Ely, D.P. and N.P. Varaiya, 1996, "Opportunity Costs Incurred by the RTC in Cleaning up S&L Insolvencies," *Quarterly Review of Economics and Finance* (Fall), 291-310.
- Ely, D.P. and N.P. Varaiya, 1997, "Assessing the Resolution of Insolvent Thrift Institutions Post FIRREA: The Impact of Resolution Delays," *Journal of Financial Services Research* (June), 255-282.
- Esty, B.C., 1997a, "Organizational Form and Risk Taking in the Savings and Loan Industry," *Journal of Financial Economics* (April), 25-55.
- Esty, B.C., 1997b, "A Case Study of Organizational Form and Risk Shifting in the Savings and Loan Industry," *Journal of Financial Economics* (April), 57-76.
- Esty, B.C., 1998, "The Impact of Contingent Liability on Commercial Bank Risk Taking," *Journal of Financial Economics* (February), 189-218.
- Fraser, D.R. and H. Zhang, 1997, "Package Bidding in Thrift Resolutions," *Journal of Financial Services Research* (June), 283-294.
- Garcia, G., 1995, "Implementing FDICIA's Mandatory Closure Rule," *Journal of Banking and Finance* (June), 723-725.
- Giliberto, M. and N. Varaiya, 1989, "The Winner's Curse and Bidder Competition in Acquisitions: Evidence from Failed Bank Auctions," *Journal of Finance* (March), 59-75.
- Gosnell, T.F., S.C. Hudgins, and J.A. MacDonald, 1993, "The Acquisition of Failing Thrifts: Returns to Acquirers," *Financial Management* (Winter), 58-68.
- Greenbaum, S.I., 1996, "Twenty-Five Years of Banking Research," *Financial Management* (Summer), 86-92.
- Gupta, A., 1997, "The Value of a Regulatory Seal of Approval," *Journal of Financial Research* (Spring), 111-128.
- Gupta, A., R.L.B. LeCompte, and L. Misra, 1993, "FSLIC Assistance and the Wealth Effects of Savings and Loan Acquisitions," *Journal of Monetary Economics* (February), 117-128.
- Gupta, A., R.L.B. LeCompte, and L. Misra, 1997a, "Taxpayer Subsidies in Failed Thrift Resolution: The Impact of FIRREA," *Journal of Monetary Economics* (July), 327-339.
- Gupta, A., R.L.B. LeCompte, and L. Misra, 1997b, "An Examination of Gains to Acquirers of Mutual Thrifts in Merger Conversions," *Journal of Financial Services Research* (June), 295-318.
- Holland, D.S., 1993, "The Bank and Thrift Crises: A Retrospective," *FDIC Banking Review* (Spring/Summer), 16-25.
- Horvitz, P.M. and I. Lee, 1994, "Abnormal Returns in Post-FIRREA Acquisitions of Failed Thrifts," *Journal of Financial Services Research* (December), 269-281.
- James, C., 1991, "The Losses Realized in Bank Failures," *Journal of Finance* (September), 1223-1242.
- James, C. and P. Weir, 1987, "An Analysis of FDIC Failed Bank Auctions," *Journal of Monetary Economics* (July), 141-153.
- Jones, D.S. and K.K. King, 1995, "The Implementation of Prompt Corrective Action: An Assessment," *Journal of Banking and Finance* (June), 491-510.
- Kane, E.J., 1985, *The Gathering Crisis in Deposit Insurance*, Cambridge, MA, MIT Press.
- Kane, E.J., 1989a, *The S&L Insurance Mess: How Did it Happen?* Washington, DC, Urban Institute Press.
- Kane, E.J., 1989b, "Changing Incentives Facing Financial-Services Regulators," *Journal of Financial Services Research* (September), 265-274.
- Kane, E.J., 1990, "Principal-Agent Problems in S&L Salvage," *Journal of Finance* (July), 755-764.
- Kane, E.J., 1995, "Three Paradigms for the Role of Capitalization Requirements in Insured Financial Institutions," *Journal of Banking and Finance* (June), 431-459.

- Kane, E.J. and R. Hendershott, 1996, "The Federal Deposit Insurance Fund that Didn't Put a Bite on US Taxpayers," *Journal of Banking and Finance* (September), 1305-1327.
- Kane, E.J. and M. Yu, 1995, "Measuring the True Profile of Taxpayer Losses in the S&L Insurance Mess," *Journal of Banking and Finance* (November), 1459-1477.
- Kane, E.J. and M. Yu, 1996, "Opportunity Cost of Capital Forbearance During the Final Years of the FSLIC Mess," *Quarterly Review of Economics and Finance* (Fall), 271-290.
- Kaufman, G.G., 1991, "Implications of 'Too Big to Fail' for the Safety of the Banking Industry and the Protection of the Public," in *Economic Implications of the "Too Big to Fail" Policy*, Washington, DC, US Government Printing Office, 191-201.
- Kaufman, G.G., 1995, "FDICIA and Bank Capital," *Journal of Banking and Finance* (June), 721-722.
- Knopf, J.D. and J.L. Teall, 1996, "Risk-Taking Behavior in the US Thrift Industry: Ownership Structure and Regulatory Changes," *Journal of Banking and Finance* (September), 1329-1350.
- Kormendi, R.C., V.L. Bernard, S.C. Pirrong, and E.A. Snyder, 1989, *Crisis Resolution in the Thrift Industry*, Boston, MA, Kluwer Academic Publishers.
- Kroszner, R.S. and P.E. Strahan, 1996, "Regulatory Incentives and the Thrift Crisis: Dividends, Mutual-to-Stock Conversions, and Financial Distress," *Journal of Finance* (September), 1285-1319.
- Liang, Y., S. Mohanty, and F. Song, 1996, "The Effect of the Federal Deposit Insurance Corporation Improvement Act of 1991 on Bank Stocks," *Journal of Financial Research* (Summer), 229-242.
- Litan, R.E., 1991, "Comment," in A. Alesina and G. Carliner, Eds., *Politics and Economics in the Eighties*, Chicago, IL, University of Chicago Press, 209-214.
- McKenzie, J. A., R.A. Cole, and R.A. Brown, 1992, "Moral Hazard, Portfolio Allocation, and Asset Returns for Thrift Institutions," *Journal of Financial Services Research* (April), 315-339.
- Merton, R.C., 1995a, "Financial Innovation and the Management and Regulation of Financial Institutions," *Journal of Banking and Finance* (June), 461-481.
- Merton, R.C., 1995b, "A Functional Perspective of Financial Intermediation," *Financial Management* (Summer), 23-41.
- Mishkin, F.S., 1992, "An Evaluation of the Treasury Plan for Banking Reform," *Journal of Economic Perspectives* (Winter), 133-153.
- Murphy, N.B., 1992, "Acquisitions of Failed Bank Deposits," *FDIC Banking Review* (Fall/Winter), 24-32.
- O'Hara, M. and W. Shaw, 1990, "Deposit Insurance and Wealth Effects: The Value of Being 'Too Big to Fail'," *Journal of Finance* (December), 1587-1600.
- O'Keefe, J., 1992, "Bank Failure Resolutions: Implications for Banking Industry Structure, Conduct and Performance," *FDIC Banking Review* (Spring/Summer), 17-35.
- Park, S. and S. Peristiani, 1998, "Market Discipline by Thrift Depositors," *Journal of Money, Credit, and Banking* (August), 347-364.
- Pettway, R.H. and J.W. Trifts, 1985, "Do Banks Overbid when Acquiring Failed Banks?" *Financial Management* (Summer), 5-15.
- Romer, T. and B. Weingast, 1991, "Political Foundations of the Thrift Debacle," in A. Alesina and G. Carliner, Eds., *Politics and Economics in the Eighties*, Chicago, IL, University of Chicago Press, 175-209.
- Saunders, A., E. Strock, and N. Travlos, 1990, "Ownership Structure, Deregulation, and Bank Risk Taking," *Journal of Finance* (June), 643-654.
- Stover, R.D., 1997, "Early Resolution of Troubled Financial Institutions: An Examination of the Accelerated Resolution Program," *Journal of Banking and Finance* (August), 1179-1194.
- Strahan, P.E., 1995, "Asset Returns and Economic Disasters: Evidence from the S&L Crisis," *Journal of Monetary Economics* (August), 189-217.
- Subrahmanyam, V., N. Rangan, and S. Rosenstein, 1997, "The Role of Outside Directors in Bank Acquisitions," *Financial Management* (Autumn), 23-36.
- Whidbee, D.A., 1997, "Board Composition and Control of Shareholder Voting Rights in the Banking Industry," *Financial Management* (Winter), 27-41.
- Zhang, H., 1997, "Repeated Acquirers in FDIC Assisted Acquisitions," *Journal of Banking and Finance* (October), 1419-1430.