

Reforming Deposit Insurance: Lessons from the Savings and Loan Crisis

*Michael Dotsey and Anatoli Kuprianov**

INTRODUCTION

The savings and loan industry is in the midst of its greatest financial crisis since the Great Depression. Losses suffered by thrifts since 1980 have generated an insolvency crisis of historic proportions, bankrupting the Federal Savings and Loan Insurance Corporation (FSLIC) and requiring taxpayers to finance the claims of insured depositors. With a significant number of savings and loans still facing serious financial difficulties, a growing number of analysts have come to question the continued viability of the entire industry.

Nor have costly failures been limited to savings and loans. While the commercial banking industry has not experienced financial problems of the same severity that beset so many savings and loans, recent years have witnessed the most costly bank failures in history. As a result, the Federal Deposit Insurance Corporation (FDIC) reported operating losses for two consecutive years, 1988 and 1989, the first such occurrences in its 55-year history. These events, especially the widely publicized problems of the thrift industry, have spurred growing concerns that the present financial regulatory system might be in need of reform.

Recent experience makes it clear that although the current deposit insurance system has largely insulated depositors from loss, it has not eliminated the economic costs of bank failures. Rather, it has shifted the burden of bank insolvencies to the taxpayer. An important lesson emerging from the current crisis is that guaranteeing the safety of deposits does not guarantee the safety of the banking system.

It is now widely acknowledged that flaws in the design of the savings and loan regulatory system contributed to the magnitude of the current crisis.

* Conversations with Marvin Goodfriend, Eric Hirschhorn, Jeffrey Lacker, Alan Stockman, and Walker Todd were extremely valuable. The views expressed in this paper are those of the authors and do not necessarily reflect the views of the Federal Reserve Bank of Richmond or the Board of Governors of the Federal Reserve System.

However, there is less agreement about the best way to reform the system. In addition to rising numbers of bank failures and the unfolding savings and loan crisis, the past decade has been characterized by deregulation and an accelerating pace of financial innovation. Because these events accompanied the onset of the savings and loan crisis, many observers have concluded that deregulation created the financial difficulties that beset the industry. According to this view, deregulation combined with lax supervision ultimately produced a crisis in the thrift industry.

This paper offers a different explanation for the savings and loan crisis. We conclude that deregulation was not the root cause of the savings and loan industry's financial difficulties. To the contrary, overly stringent limitations on the investment powers of thrifts can be blamed for the onset of the crisis. Moreover, the crisis could never have attained its present dimensions in the absence of deposit insurance and the accompanying regulatory structure. The high cost of resolving the thrift industry crisis, now estimated to be well in excess of \$100 billion, is a product of the blanket guarantees provided by deposit insurance, which permitted insolvent institutions to continue attracting deposits and to engage in high-risk activities that ultimately resulted in heavy losses. A review of the events of the past decade suggests that the insolvency of the FSLIC does not represent a single isolated incident resulting from either bad luck or the actions of a few incompetent or unscrupulous individuals. Rather, the analysis supports the earlier conclusions of Kane (1989a), who has argued that the incentives embedded in the current system made the present outcome all but inevitable.

We conclude that meaningful reform of that system will require providing for the automatic and prompt closure of failing institutions. The current crisis shows that when a federally sponsored deposit insurance fund becomes insolvent, there is no mechanism to ensure that insured institutions are closed if they become insolvent. To the contrary, regulators faced competing incentives that interfered with an

efficient resolution of thrift insolvencies once the FSLIC became insolvent. Our suggestions for reform arise from an analysis of the bankruptcy law as it applies to unregulated nonfinancial firms, which do not have access to the kinds of government guarantees provided by deposit insurance. Recommended changes include incentives to discourage depositors from funding insolvent institutions together with a system of judicial oversight of bank and thrift failure resolution proceedings similar to legal bankruptcy proceedings established to deal with financially troubled firms.

The paper is organized as follows. Section I provides general background on private lending arrangements and the nature of bankruptcy proceedings. These arrangements are compared with the system of government regulation and failure resolution proceedings for insured deposit-taking institutions. Section II examines the evolution of federal deposit insurance and provides a detailed history of the savings and loan crisis. Section III explores different reform proposals. Section IV presents a summary and conclusions.

I. MARKET DISCIPLINE, DEPOSIT INSURANCE, AND BANK FAILURES

The present-day financial regulatory system is in part a legacy of the waves of Depression-era bank failures. Legislation enacted in response to the events of that period created a "financial safety net," comprised of federally sponsored deposit insurance together with increased government regulation and supervision of financial intermediaries. (A third important element of this safety net, access to the Federal Reserve discount window, had been established in response to earlier financial crises.) The government assumed responsibility for protecting depositors in the resulting system, with the federal deposit insurance funds (the FDIC and the now defunct FSLIC) assuming the role of creditor to insured depository institutions. Acting in this role, government regulatory agencies assumed responsibility for ensuring the safe and sound operation of insured institutions. To facilitate this task, these agencies were given the authority to issue regulations restricting the activities of insured banks and thrifts and also to supervise them to ensure that the rules were followed.

When viewed from this perspective, it appears that the goals and interests of government policy with regard to bank regulation should coincide with those

of depositors and other private creditors. But recent history suggests otherwise. In an attempt to understand why the system failed, the analysis that follows will compare the incentives created by the federal financial safety net with the incentives inherent in purely private financial arrangements. We analyze market mechanisms designed to cope with problems that arise when private funds are managed by others. In particular, we concentrate on the methods employed by private creditors to "regulate" the activities of borrowers and examine the resolution of creditor claims under the legal bankruptcy proceedings. We also describe the self-regulatory practices of the nineteenth century American clearinghouses, which offered depositors a form of private deposit insurance. The description of private financial arrangements provides a model that can be used to critically evaluate the federal system of deposit insurance and regulation.

Risk, Market Discipline, and Bankruptcy

The contemporary view of the modern business firm emphasizes the diverse interests of the different parties participating in the operation of the organization (Coase 1937; Alchian 1968; Jensen and Meckling 1976; Fama 1980; Fama and Jensen 1983a, 1983b). Firms are viewed as a nexus for a set of contracting relationships among different economic agents. This "property rights" view treats suppliers of productive inputs, such as labor, as well the holders of financial claims (shareholders and creditors), as stakeholders whose claims against the firm are governed by either implicit or explicit contractual arrangements. The managers of a firm constitute a special type of labor input responsible for coordinating the activities of others and executing contracts among suppliers of productive inputs.

Most large organizations are characterized by a separation of risk-bearing and decision-making. Individuals who bear the residual risks associated with the operation of an organization typically delegate decision-making responsibility to professional managers. The modern business corporation provides the most familiar example of this type of organizational structure. Corporate managers make decisions for the firm, taking risks whose costs are borne by shareholders as well as others with a stake in the firm. Since managers rarely hold a significant fraction of corporate equity, they do not bear the full cost of bad decisions nor reap the full benefits of good ones. Financial mutuals such as mutual insurance companies and, notably, many savings and loan associations, are also characterized by a separation of

decision-making and risk-bearing. Residual profits of mutuals accrue to their customers, who therefore bear the residual risks stemming from the operation of those organizations (although deposit insurance limits the extent to which depositors bear residual risks at insured savings and loans). In this sense, the policyholders of a mutual insurance company or depositors in a mutual savings and loan can be thought of as "owners" (Fama and Jensen 1983a, 1983b).

Since managers do not bear the full costs resulting from their decisions, their interests may differ from those of shareholders and creditors. To ensure that managers have incentives to act in the interests of shareholders, large firms typically rely on hierarchical organizational structures to monitor and evaluate performance. A board of directors consisting in part of individuals outside the firm's management hierarchy evaluates the performance of its senior management.

Markets play an important role in providing both managers and board members with incentives to act in the interests of shareholders. Managers have an incentive to acquire a reputation for effective performance to enhance their career prospects. Outside directors often sit on more than one board and have an incentive to discharge their duties effectively so as to secure invitations to join other boards of directors. The market for corporate control also provides a powerful incentive for corporate boards of directors and managers to act in the interests of shareholders. Poor performance by management is often reflected in a corporation's share price, making the organization susceptible to a takeover from another management team.

For financial mutuals, such as savings and loan associations and insurance companies, the channels through which the market disciplines the firm's decision-makers are somewhat different. The residual claims of mutuals are redeemable on demand at a price determined by a prespecified rule. Thus, the policyholders of a mutual insurance company can redeem their policies before they mature according to terms specified in the policy. Similarly, depositors at mutual savings and loans can withdraw their deposits, receiving the amount deposited plus the stated interest. In the absence of deposit insurance, depositors would be expected to withdraw their funds upon learning that the association's management had embarked upon a risky and imprudent investment strategy. As Fama and Jensen (1983a, p. 317) ex-

plain, "The decision of a claim holder to withdraw resources is a form of partial takeover or liquidation which deprives management of control over assets."

The role of risk-bearing is most often associated with the shareholders of a firm, but the limited liability feature of common equity imposes some of the residual risk on a firm's other stakeholders, most notably its creditors. Private lending arrangements reflect a recognition on the part of lenders that the borrowers can potentially benefit by undertaking actions that shift risk to the lender after a loan is made. A borrowing firm can effectively transfer risk to lenders by siphoning off assets to the stockholders through excessive dividend payments, by increasing the riskiness of the business, or by pledging its assets to another creditor.

For this reason, the extension of credit is often accompanied by a legally binding agreement limiting the uses of borrowed funds. Banks typically extend credit only after gathering extensive information about the borrowing firm, and typically continue to monitor the activities of borrowing firms after funds are disbursed (Stiglitz 1985). Other creditors, such as outside bondholders, commonly require covenants limiting the actions of the borrowing firm. In addition to restricting the use of the borrower's assets, such "bonding" agreements typically require the borrower to disclose certain events to the lender and may provide for direct supervision of the borrower's business by the lender (Black, Miller, and Posner 1978). Legal bankruptcy proceedings provide the ultimate means of enforcing the interests of creditors by alleviating important incentive problems that arise when a firm is insolvent or nearing insolvency.

When shareholders hold a substantial stake in a firm they bear much of the residual risk stemming from its activities. But once shareholder equity is dissipated, the limited liability feature of common stock makes added risk-taking consistent with the interest of shareholders. Under such conditions a risky investment strategy may actually benefit shareholders because even a small probability of a large gain can result in large residual profits and restore the firm to solvency, while any losses stemming from such a strategy are borne by creditors.

At the same time, the threat of pending bankruptcy can affect the incentives faced by the managers of the firm. Managers advance their careers by demonstrating competence at coordinating the activities of firms. While the insolvency of a firm need not always

be due to managerial incompetence, bankruptcy proceedings typically damage the career prospects of a firm's managers. Thus, the managers of a failing firm may perceive themselves as having little to lose from pursuing a strategy of excessive risk-taking, viewing it as the only opportunity left to rescue the firm as well as their reputations. For these reasons, creditors typically seek to take control of a firm away from its existing management at the first sign of insolvency.

The Resolution of Claims Under Bankruptcy Laws

Legal bankruptcy proceedings can be initiated by the management of a debtor firm as well as by its creditors. A firm can be forced into legal bankruptcy proceedings by its creditors when it can no longer meet its debt obligations as they come due, or when it violates certain debt covenants. In practice, bankruptcy proceedings are often initiated by a firm's management when default is imminent. When a firm files for protection from its creditors under Chapter 11 of the Bankruptcy Code, its management nominally retains control of the organization. But although management remains responsible for supervising the day-to-day operation of the firm, its decisions are subject to judicial review and approval by creditors. Creditor committees form to oversee the operations of a firm. As Todd (1986) notes, these creditor committees hold the real power over all important operating decisions. In effect, the creditor committees become co-managers of the bankrupt firm, with their legal representatives meeting frequently with management. A trustee may be appointed to administer the operations of the bankrupt firm if there is evidence of fraudulent behavior on the part of management.

A firm need not be insolvent to file a voluntary petition for Chapter 11 protection from its creditors. Modern bankruptcy law provides for the rehabilitation of debtors. The idea behind Chapter 11 proceedings is to effect a reorganization of financially troubled firms where possible. Once a bankruptcy petition is filed, the firm is granted an automatic stay permitting it to stop payments to its unsecured creditors. Secured creditors are prohibited from taking possession of property from the bankrupt's estate unless they can obtain relief from the automatic stay. In cases where the bankruptcy judge deems the property securing a loan to be necessary for the continued operation of a bankrupt organization, a secured creditor may be effectively forced to renew an extension of credit to the bankrupt firm.

The management of a firm in Chapter 11 proceedings is given an opportunity to draw up a reorganization plan specifying a new financial structure along with a revised repayment schedule for outstanding debts. Creditors are sometimes called upon to forgive a portion of the firm's debt to ensure the viability of the reorganized firm. They may agree to such a restructuring of the firm's debts if it seems likely to yield a greater repayment than the amount that could be realized under any other course of action, including liquidation.

If a firm's management does not offer its own reorganization plan, or cannot produce a plan acceptable to creditors and to the bankruptcy judge, creditors can propose an alternative reorganization plan. The creditors' plan may call for a new management team to be installed.

A bankruptcy judge acts as a mediator or referee between management and the different parties with claims against the firm. Judicial decisions are governed by a set of Bankruptcy Rules (See Treister, et al. 1988). If creditors cannot agree on a reorganization plan, the bankruptcy judge may under certain circumstances impose a reorganization plan. In some cases the court may order the liquidation of a bankrupt firm.

Liquidation of a bankrupt firm's assets is governed by Chapter 7 of the bankruptcy code. When a firm enters Chapter 7 proceedings, a trustee is appointed to legally represent and administer the estate. The Bankruptcy Code establishes a schedule of priorities for the distribution of liquidation proceeds among unsecured creditors. Administrative expenses of managing the bankrupt's estate receive first priority. Unpaid wages and benefits, up to a certain limit come next, followed by claims of governmental units for taxes, customs duties, and accrued penalties. The claims of holders of investment securities are subordinate to all other unsecured creditors. Thus, holders of subordinated debt, which includes bond and note holders, are reimbursed only after the claims of all other unsecured creditors are satisfied. Preferred shareholders are next, with common equity shareholders receiving lowest priority. Secured creditors are not subject to the schedule of priorities (Todd 1986; Treister, et al. 1988, chapter 6).

To summarize, private lenders employ a number of strategies, including loan covenants, monitoring, and bankruptcy proceedings when necessary, to protect their claims against a borrowing firm. Although

these safeguards do not prevent insolvencies, they do help to limit losses when a borrower becomes financially distressed.

Private Regulation of Commercial Banking

Today, regulation is most often viewed as a governmental activity. However, private regulatory organizations often evolve to provide for the orderly functioning of market activity in the absence of government intervention. Notable examples of private regulation include the futures and securities exchanges, which evolved as purely private organizations formed to set and enforce trading rules. The nineteenth century American commercial bank clearinghouses, which essentially regulated a significant part of the banking industry before the advent of the Federal Reserve, provide another example of private regulation. These clearinghouses provided an informal system of deposit insurance to depositors at member banks. The historical lessons offered by the operation of the clearinghouse system therefore seem relevant to the study of deposit insurance reform, and the system merits comparison with present-day deposit insurance arrangements.

Commercial bank clearinghouses were first organized to conserve on the transactions costs associated with clearing checks. Banks, as organizations that specialized in information-intensive loans based on the evaluation of the creditworthiness of individuals, had a natural advantage in monitoring the creditworthiness of other banks. Moreover, their need to exchange checks with other banks gave them an incentive to engage in some form of monitoring. Thus, the clearinghouses developed into a form of private regulatory agency.

Because private regulatory arrangements are based on the premise that participation is motivated by self-interest, the most common penalty for failure to abide by the rules is expulsion from the system. Thus, futures and securities traders who systematically violate trading rules are banned from trading on the exchanges. Likewise, the early clearinghouses denied access to banks that failed to meet the financial standards established by the clearinghouse member banks.

As a prominent example of how such regulation was effected in practice, Gorton and Mullineaux (1987) describe the operations of the New York clearinghouse. Admission to the clearinghouse required banks to meet an admissions test that required banks to be well-capitalized and to submit to periodic

examinations. In times of panic, the clearinghouse organized suspensions of deposit convertibility and issued loan certificates to member banks that they could use in the clearing process in place of specie. Through the issue of such loan certificates, member banks essentially pooled their resources to assure depositors of the ultimate safety of individual member bank liabilities. In effect, the clearinghouse insured the deposits of its member banks through this mechanism.

Such pooling arrangements exposed clearinghouse members to the threat of losses if a bank proved insolvent. Clearinghouse members therefore had an incentive to ensure that only sound banks were part of the clearinghouse. To this end, the clearinghouses closely monitored member banks and expelled those that did not satisfy rigorous standards.

Denial of access to the clearinghouse made it much more difficult and costly for banks to clear checks, so the threat of expulsion provided banks with a strong incentive to conform to clearinghouse rules. Moreover, expulsion was a signal that the banking community had determined that there was a high probability that the affected bank would not be able to meet its deposit obligations. Thus, clearinghouses became credible suppliers of information about the financial condition of member banks.

On balance, the nineteenth century clearinghouses appear to have functioned as effective private regulatory organizations. Available evidence indicates that the ultimate losses suffered by depositors of failed banks during this period were negligible (Timberlake 1984). Despite its effectiveness in this regard, this private system of regulation was replaced with government regulation with the formation of the Federal Reserve, and, after the collapse of the banking system in the early 1930s, with federally sponsored deposit insurance.

The Federal Reserve System was created to impose greater centralized government control over the banking system (Timberlake 1984). Under the clearinghouse system there were recurrent financial panics and bank suspensions that were viewed as a source of macroeconomic instability.¹ In addition, there was some concern that the clearinghouse structure led to industry cartelization and monopoly

¹ The assertion that banking panics have been a primary cause of macroeconomic instability in U.S. economic history has been disputed by recent research, however (see Benston, et al. 1986, chapter 2).

profits (Carosso 1973). The power of exclusion gave clearinghouse members the potential ability to limit entry into their markets.

Yet, it is worth emphasizing again that the clearinghouse system actually worked quite well at limiting depositor losses. Moreover, demands for greater governmental control over monetary policy and concerns over macroeconomic instability, while justified, do not necessarily provide an argument in favor of government regulation of banking. As Goodfriend and King (1988) point out, the exercise of monetary policy only requires a central monetary authority empowered to carry out open market operations. Thus, monetary policy should be able to prevent widespread bank suspensions so long as the monetary authority stands willing to supply reserves to stabilize the relative price of currency and bank liabilities. To the extent that preventing financial panics and bank runs is perceived as an important goal of public policy, available evidence suggests that liberalizing regulatory restrictions that limit the ability of banks to establish branches would be the most effective solution (Calomiris 1989b). Finally, in the area of antitrust concerns, existing antitrust laws should be adequate to guard against anticompetitive behavior in the banking system.²

Deposit Insurance and Bank Failure Resolution

Because a deposit insurer effectively becomes a creditor to banks and thrifts, a system of government regulation and supervision is a necessary adjunct to a system of government-sponsored deposit insurance. Government regulation and supervision in this instance is analogous to the monitoring behavior and other protective devices employed by creditors in private financial arrangements. The scope of this regulatory system is comprehensive and extends to legal arrangements for dealing with bank and thrift failures, which differ from bankruptcy proceedings for nonfinancial firms.

Commercial banks and savings and loan associations, along with certain other heavily regulated financial firms such as insurance companies, are not subject to the bankruptcy laws that apply to commercial firms. Responsibility for closing an insolvent bank or savings and loan rests with its chartering agency. In the case of national banks, the charter-

ing agency is the Office of the Comptroller of the Currency (OCC). Before being disbanded in 1989, the Federal Home Loan Bank Board chartered federal savings and loan associations. The Bank Board's chartering authority has since been delegated to a new agency, the Office of Thrift Supervision (OTS). In addition to the federal chartering agencies, each state also charters commercial banks and savings and loan associations. The state banking or savings and loan superintendents are responsible for closing state-chartered institutions.

Role of the deposit insurer When an insured bank or thrift is declared insolvent, the deposit insurer pays off insured depositors and, in most cases, becomes the receiver for the failed institution.³ Once the insured depositors are paid, the deposit insurer assumes their claims against the failed institution. Thus, the role of the deposit insurer in dealing with a failing bank or savings and loan differs considerably from that of a bankruptcy judge or trustee. Rather than acting solely in the role of a mediator between different claimants, as a bankruptcy judge does, the deposit insurer assumes the dual role of receiver and claimant.

As receiver, the deposit insurer assumes responsibility for administering the assets of the insolvent firm and has a fiduciary responsibility to all other claimants, such as uninsured depositors and non-deposit creditors. In its role as a claimant, the deposit insurer attempts to secure repayment of deposits from the failed institution on behalf of insured depositors. Federal banking law does not grant the deposit insurer preference over other unsecured creditors, although some states have enacted "depositor preference" statutes (Hirschhorn and Zervos 1990).

The law gives the deposit insurer substantial discretion in dealing with a failing institution. Nevertheless, the insurer must seek the cooperation of other creditors when attempting to reorganize and restructure the debts of an insolvent bank. Although commercial bank and savings and loan failures are not subject to the same kind of stringent judicial over-

² Kuprianov (1985) gives an account of how antitrust laws assured savings and loans access to the Automated Clearing Houses operated by the commercial banking industry.

³ In the past, the FSLIC bore responsibility for administering federally insured savings and loan institutions when they were declared insolvent. However, with the enactment of FIRREA, the FSLIC was dissolved and the FDIC was given responsibility for administering both the Bank Insurance Fund (BIF), which insures the deposits of commercial banks, and the Savings Association Insurance Fund (SAIF), the new deposit insurance fund for savings and loans. In its new role, the FDIC is responsible for handling insolvent savings and loans as well as commercial bank failures.

sight mandated by bankruptcy laws, creditors who feel they have been treated unfairly do have recourse to the courts.

FSLIC failure resolution procedures Before it became insolvent and was itself dissolved, the FSLIC enjoyed a large degree of discretion in the way it dealt with failing savings and loans. It could: [1] liquidate the organization and pay off its depositors and other creditors; [2] reorganize the enterprise and return it to private sector control; or [3] extend direct assistance to enable a troubled institution to remain in operation.

In a liquidation, or payout, a failing savings and loan would be closed, its insured depositors paid, and its assets liquidated. Receivership expenses had first priority against liquidation proceeds, with remaining proceeds distributed to the association's creditors. In states with depositor preference statutes, the claims of the FSLIC and any uninsured depositors against the failed institution received preference over other unsecured creditors. In states with no depositor preference statutes, the FSLIC was forced to share the liquidation proceeds with other unsecured creditors. Most often, a troubled savings and loan was not closed before it had accumulated large losses, so that liquidation proceeds rarely covered all outstanding creditor claims in full. Only a relatively small number of failed savings and loans have been liquidated. Between 1980 and 1988 only 78 of the 489 insolvencies officially resolved by the FSLIC were liquidated.⁴

In reorganizing a failing savings and loan, the FSLIC could: [1] directly augment the net worth of the enterprise, either through direct cash contributions or through the issue of its own promissory notes; [2] purchase subordinated debt or preferred stock as part of a recapitalization; [3] provide the acquirer of an insolvent institution with financial guarantees and yield maintenance agreements guaranteeing the performance of the troubled organization's assets; or [4] purchase the impaired assets of a troubled institution at a negotiated price (Zisman and Churchill 1989). Thus, the FSLIC sometimes maintained an explicit financial stake in an institution after it was reorganized. In addition to directly augmenting the

⁴ The number of official failure resolutions understates the true number of thrift insolvencies during this period. Some troubled institutions were handled through "supervisory mergers," described below, while hundreds more insolvent institutions have been taken over by regulators but have not yet been closed or reorganized. Barth, Bartholomew, and Bradley (1989b) give data on thrift failure resolutions and costs from 1934 to 1988.

net worth of a troubled institution in these ways, the Federal Home Loan Bank Board, which administered the FSLIC, would often grant acquirers of troubled thrifts special permission to acquire other institutions at a later date. To augment the franchise value of financially troubled institutions, the Bank Board sometimes provided acquirers with enhanced branching opportunities or permission to acquire healthy savings and loans in other states, actions that state-mandated branching restrictions would otherwise prohibit.

Reorganizations of troubled thrifts often took the form of a *supervisory merger*. In a supervisory merger, regulators would arrange the merger of a financially troubled institution with another institution deemed to be in better financial condition. Supervisory mergers were accomplished without the explicit financial assistance of the FSLIC. Normally, the FSLIC would have been expected to recapitalize a failing institution before arranging a merger. But as the deposit insurer's financial resources became strained, the Bank Board was forced to grant regulatory forbearances to arrange mergers of insolvent organizations. In some cases, regulatory forbearance amounted to a waiver from regulatory minimum net worth requirements. In many cases, however, such forbearances involved permission to employ liberal accounting procedures that authorized the acquirer to defer recognition of the losses of the insolvent thrift almost indefinitely. Thus, supervisory mergers often simply consolidated losses into larger organizations that were permitted to continue operating without private capital. Between 1980 and 1988, 333 institutions were involved in supervisory mergers (Barth, Bartholomew, and Bradley 1989b, Table 1).

Since supervisory mergers did not require explicit action on the part of the FSLIC, they are not officially counted as failure resolutions. As Kane (1989b) notes, however, the grant of regulatory forbearance made the FSLIC the residual risk-bearer for undercapitalized enterprises that would otherwise have been unable to attract funding. To the extent that supervisory mergers were based on promises of regulatory forbearance, the FSLIC maintained an implicit equity stake even in cases where its stake in the merged firms was not made explicit.

The Bank Board had the authority to assume control of a financially troubled organization until it could be reorganized and sold to private investors. It exercised such "conservatorship" powers in its Management Consignment Program, which is discussed in greater detail in Section II.

Finally, the FSLIC (as well as the FDIC) was authorized to extend direct assistance to a financially troubled institution if such an action was deemed less costly than any of the other available courses of action, or in cases where the institution was judged to be "vital" to its community (Benston, et al. 1986, chapter 4).

Ostensibly, then, FSLIC failure resolution procedures resemble legal bankruptcy proceedings in that they are meant to bring about the reorganization of a failing firm or provide for its liquidation in cases where reorganization is not deemed worthwhile. In practice, however, the savings and loan regulatory system has proved ineffective at limiting the losses incurred by insolvent institutions. Whereas legal bankruptcy proceedings ensure that the debts of an insolvent firm are restructured in such a way that shareholders have an equity stake before the firm is returned to private control, the same has not always been true of FSLIC failure resolution procedures. Moreover, the system proved ineffective at curbing the risks taken on by the management of failing institutions. The practical importance of these differences will become evident in the ensuing account of the evolution of the savings and loan crisis.

II. HISTORY OF THE SAVINGS AND LOAN CRISIS

The origins of the savings and loan crisis are rooted in the system of regulation imposed on the industry. The ensuing account describes the evolution of the system and highlights the characteristics that later precipitated an industry-wide crisis. We then proceed to a detailed account of the crisis itself.

Federal Regulation of Savings and Loans

The savings and loan regulatory system of the 1980s was a product of legislation enacted during the Great Depression. Before 1932, the federal government had little involvement in thrift regulation. Savings and loans shared in the financial distress that afflicted commercial banks during this episode. In an attempt to assist the thrift industry, which had begun to contract due to heavy deposit withdrawals, Congress passed the Federal Home Loan Bank Act in 1932. The Act created the twelve Federal Home Loan Banks and the Federal Home Loan Bank Board as their supervisory agent. The goal of this legislation was to provide thrifts with an alternative source of funding for home mortgage lending, much in the same way that the Federal Reserve Banks provided temporary funding for commercial banks. While the

Federal Reserve Banks only provided short-term credit, however, the Federal Home Loan Banks were created to provide longer-term credit in support of mortgage lending.

The federal government became involved in chartering savings and loans for the first time in 1933 with the passage of the Home Owners' Loan Act, which authorized the FHLBB to charter and regulate savings and loan associations. In 1934, a year after a system of deposit insurance was established for commercial banks, the National Housing Act of 1934 created a deposit insurance fund for savings and loan associations. Unlike the FDIC, which was established as an independent organization separate from the Federal Reserve System and the Comptroller of the Currency, the FSLIC was placed under the auspices of the FHLBB.

The legislation creating the FSLIC called for the establishment of a reserve fund equal to five percent of all insured accounts and creditor obligations within 20 years, and empowered the agency to assess an annual insurance deposit of 1/4 of one percent on the total deposits of insured S&Ls. The FSLIC was further authorized to collect an additional emergency assessment of 1/4 percent if it needed additional funding. At first, deposits were insured up to a maximum of \$5,000 per depositor.

When federal deposit insurance was first established, both the FDIC and the FSLIC were expected to accumulate and hold reserves sufficient to pay off all insured depositors under any foreseeable circumstances. The legislated deposit insurance assessments and reserve fund targets were based on estimates of the historical losses of depositors. But federal deposit insurance had not been in existence long before the deposit insurance assessments were cut and coverage expanded. In 1935, a year after the FSLIC was established, statutory deposit insurance assessments for insured savings and loans were cut in half, to 1/8 of one percent of deposits. The emergency assessment authority was similarly cut to 1/8 of one percent. That same year, the FDIC's assessments were cut from 1/2 of one percent to 1/12 of one percent, and its emergency assessment rights were rescinded.

The argument for lowering deposit insurance rates was based upon the assertion that enhanced regulation and supervision would keep future losses of insured banks below the historical averages. At the same time, however, there appears to have been

some awareness that lowering deposit insurance assessments could result in future funding problems for the deposit insurance funds. FDIC deposit insurance assessments were reduced to 1/12 of one percent by the Banking Act of 1935, which also provided the agency with the right to borrow from the U.S. Treasury. The FSLIC was granted similar borrowing authority in 1950, when deposit insurance assessments for S&Ls were cut to 1/12 of one percent.

Over the ensuing years, basic insurance coverage for S&L depositors was raised several times: to \$15,000 in 1966, \$20,000 in 1969, \$40,000 in 1974, and, most recently, to \$100,000 in 1980. These increases in coverage, together with a rapid growth in deposits throughout most of the postwar period, far outpaced the accumulation of reserves in the FSLIC insurance fund. The five percent reserve fund target originally mandated by the National Housing Act was never attained. The FSLIC's primary reserve fund never exceeded two percent of insured deposits (Barth, Feid, Riedel, and Tunis 1989).

Thus, historical data on bank losses suggests that neither deposit insurance fund has had the necessary reserves to deal with the contingency of widespread bank failures. Both the FDIC and the FSLIC have faced a chance of insolvency almost since their inception. Moreover, both agencies received the authority to borrow from the U.S. Treasury as part of legislated reductions in deposit insurance rates and increases in deposit insurance coverage. As Barth, Bradley, and Feid (1989) note, however, no formal procedures were ever established for dealing with the insolvency of one of the deposit insurance funds, even though the funds were structured in a way to make such a contingency distinctly possible, if not inevitable. Thus, the stage for the present-day savings and loan crisis was set as early as 1950.

Origins of the Savings and Loan Crisis

The first signs of trouble surfaced in the mid 1960s, when rising inflation and high interest rates created funding problems for savings and loans. Regulations prohibited federally insured savings and loans from diversifying portfolios that were concentrated in long-term, fixed-rate mortgages. Thrift industry profitability eroded as deposit rates crept above the rates of return provided by their existing holdings of home mortgage loans. Congress attempted to address the problem by placing a ceiling on maximum deposit rates paid by thrifts in 1966. Thrifts were given a slight competitive advantage, being authorized to pay

1/4 of one percent more on savings deposits than commercial banks were allowed to pay, to encourage deposit flows to the industry.

But interest rate controls led to periods of disintermediation whenever market interest rates rose too far above statutory deposit rate ceilings. The problem became increasingly severe as the inflation and accompanying high interest rates that characterized the economic environment of the late 1970s made the existing system of interest rate controls unworkable. Misguided regulation was blamed for the thrift industry's woes, and lawmakers began to debate the merits of financial deregulation.

The first significant step to deregulate the thrift industry came in 1980 with the passage of the Depository Institutions Deregulation and Monetary Control Act (DIDMCA). The DIDMCA provided for the phase-out of interest rate regulations and permitted thrifts to diversify their asset portfolios to include consumer loans other than mortgage loans, loans based on commercial real estate, commercial paper, and corporate debt securities. The act also raised the limit on federal deposit insurance applicable to individual accounts from \$40,000 to \$100,000.

This first attempt at deregulation came too late to help thrifts cope with the steep rise in interest rates that began in 1981 and continued into 1982. Federally chartered S&Ls were not given the legal authority to make variable-rate mortgage loans until 1979, and then only under severe restrictions. They did not receive the authority to freely negotiate variable-rate mortgage loans with borrowers until 1981. By that time, deposit rates had risen well above the rates most institutions were earning on their outstanding fixed-rate mortgage loans. As funding costs rose, many thrifts experienced heavy losses. Federally insured savings and loans collectively lost over \$4.6 billion in 1981 and \$4.1 billion in 1982.⁵ By one estimate, 85 percent of all thrifts were unprofitable in 1981, and most were insolvent on an economic basis (Barth, Bartholomew, and Labich 1989). From the start of 1980 through year-end 1982, the number of FSLIC-insured thrifts fell almost 20 percent, from 3,993 to 3,287.

⁵ Net operating income, which more accurately reflects the true losses suffered by thrifts during this period because it excludes nonrecurring gains, presents an even more devastating picture of losses suffered by savings and loans during this period. According to Barth, Bartholomew, and Bradley (1989, Appendix I-8), aggregate net operating income for the U.S. thrift industry in 1981 was -\$7.1 billion and -\$8.8 billion for 1982.

The industry's staggering losses overwhelmed the resources of the FSLIC. Hundreds more institutions that had become economically insolvent were not closed because the FSLIC lacked the resources to deal with them. Many economically insolvent thrifts were able to maintain the appearance of solvency even though they were economically insolvent because generally accepted accounting practices (GAAP) permitted them to report their net worth based on historical asset value, instead of requiring them to recognize the true market value of assets. But as interest rates continued to rise, a significant number of institutions soon accumulated such massive losses that some action was required. The FSLIC resolved 32 thrift insolvencies in 1980, another 82 in 1981, and 247 in 1982. During the same period, another 493 savings and loans voluntarily merged with other institutions (Barth, Bartholomew, and Bradley 1989b, Table 1). In spite of this record-breaking caseload, Kane (1989b) estimates that 237 FSLIC-insured thrifts were GAAP-insolvent at the end of 1982. The number of insolvent insured thrifts in operation continued to climb through 1988.

Regulatory Forbearance

Once the crisis in the savings and loan industry had begun, it was perpetuated by policies of regulatory forbearance, which permitted insolvent institutions to remain open in the hope that they could grow out of their financial problems. The policies adopted to deal with the growing number of insolvent savings and loans during this episode stand in stark contrast to the restrictions on management typically imposed in the course of legal bankruptcy proceedings for nonfinancial firms.

FHLBB policies Lacking the resources to deal with all the problem institutions under its supervision, the Bank Board adopted a policy of regulatory forbearance. Minimum net worth requirements were lowered in 1980 and 1982. Regulatory accounting principles (RAP) were liberalized in 1981, and again in 1982, to permit distressed savings and loans to defer recognizing their losses. These permissive rules encouraged thrifts to record inflated net worth values so as to present an appearance of solvency. Together, lenient net worth requirements and permissive regulatory accounting principles lowered the number of official "problem" institutions the overburdened Bank Board staff was forced to deal with, although only for a short time (Brumbaugh 1988).

By this time, many thrifts had accumulated such large losses that even these new and permissive

accounting rules could not conceal the fact that they were insolvent. Concerned that acknowledging the large number of insolvent savings and loans could bring about a crisis of confidence among depositors, the FHLBB implemented its income-capital certificates (ICC) program. Under this program, insolvent thrifts could issue income capital certificates to the FSLIC to supplement their regulatory net worth. The idea behind the program was for the FSLIC to purchase the certificates to restore troubled institutions to solvency. Because the FSLIC lacked the money, it most often exchanged its own promissory notes for the certificates. Institutions receiving such promissory notes could include them on their balance sheets as assets, while income capital certificates were reported as an equity item. Such transactions amounted to the purchase of equity in an insolvent enterprise by the FSLIC using its own credit.

Income-capital certificates gave the FSLIC a financial interest in these troubled thrifts. If participating institutions eventually regained profitability, as it was hoped they would, the income-capital certificates would entitle the FSLIC to a share of their profits. But in the event a participating institution was declared insolvent, the FSLIC had virtually no chance of regaining its investment. FSLIC claims based on income capital certificates were subordinate not only to the claims of depositors, but of other creditors as well.⁶

Where possible, the FSLIC used income-capital certificates to facilitate mergers and reorganizations. Prospective buyers were hesitant to assume the liabilities of insolvent thrifts when it appeared that the value of the institutions' assets fell far short of deposit obligations. Sometimes, the FSLIC transferred assets from thrifts it was in the process of liquidating to other institutions it was trying to sell. This latter course was typically pursued where purchasers of insolvent thrifts were reluctant to accept FSLIC promissory notes. Many prospective acquirers either could not or would not invest enough of their own resources to fully recapitalize a failing institution. In such cases, the FSLIC would help effect a recapitalization by exchanging its promissory notes for income-capital certificates, which were transferable to the acquiring institution. In essence, the

⁶ Income-capital certificates did not have any stated maturity, and were not collateralized or secured. Thus, in the event of legal insolvency, income-capital certificates gave the FSLIC essentially the same status as those of a holder of preferred equity and not those of a creditor (see GAO, *The Management Consignment Program*, September 1987; and *American Banker*, 12/26/85).

FSLIC became a partner in the new, reorganized institution.

In many of these reorganizations, the thrift's new owners had very little of their own financial resources at stake. Many times, the acquirer was a marginally solvent thrift with little or no capital of its own. Such institutions were able to expand rapidly by taking over other thrifts in even worse financial condition. In the end, the FSLIC bore virtually all residual risks while the management and shareholders of the acquiring institution stood to profit handsomely if their attempts to expand their operations proved profitable.

The Bank Board pursued such policies out of a lack of good alternatives. It lacked the resources to close the insolvent institutions, and because only the chartering agency — which was the Bank Board itself in the case of federally chartered thrifts—could declare a savings and loan legally insolvent, financially troubled thrifts could be kept open indefinitely. Unfortunately, the Bank Board also lacked the resources to adequately monitor the many insolvent savings and loans for which the FSLIC had become the residual risk bearer. At the same time, deposit insurance made it possible for even the most poorly managed and unprofitable thrifts to continue expanding their operations. Keeping insolvent thrifts open under these circumstances permitted the FSLIC to defer recognizing its losses, but exposed the fund to the risk of very large future losses.

The Garn-St. Germain Act Lawmakers responded to these developments by enacting the Garn-St. Germain Act of 1982, which combined a program of regulatory forbearance together with further thrift industry deregulation. To encourage greater regulatory forbearance toward financially troubled thrifts, the Act created the "net worth certificate" program. The net worth certificate program was essentially a derivative of the income-capital certificates program devised earlier by the Bank Board. Net worth certificates differed from income capital certificates in that they did not constitute a permanent equity investment, but were issued only for a set time period authorized by the legislation. Unlike income-capital certificates, net worth certificates were not transferable and so were not useful in reorganizing insolvent institutions or arranging mergers. In fact, the stated purpose of the net worth certificate program was to forestall forced mergers or other regulatory actions against insolvent thrifts (see GAO, *Net Worth Certificate Assistance Programs*, 1984).

At the same time, the Garn-St. Germain Act attempted to reform the elements of the regulatory structure most often blamed for the industry's problems by liberalizing investment powers of federally chartered thrifts. Some states such as California took the initiative to deregulate savings and loans even further, authorizing state-chartered thrifts to engage in activities such as direct participation in real estate development. Other states, notably Texas and Florida, had granted their state-chartered savings and loans liberalized investment powers years earlier.

Thus, the Garn-St. Germain Act attempted to forestall action in the hope that the combined policies of forbearance and deregulation would facilitate a return to profitability and financial health among insolvent thrifts. These policies were adopted in an effort to avert the need for a federally financed rescue of the FSLIC. Rather than providing the Bank Board with the resources needed to begin closely monitoring and closing problem institutions, the net worth certificate program discouraged regulators from acting. But the added risks that continued regulatory forbearance posed to the FSLIC fund were underestimated. Those risks were soon to become apparent.

Early attempts at reregulation Instead of improving with time as policymakers had hoped, the financial condition of insolvent thrifts continued to deteriorate. Market interest rates had begun a pronounced and sustained decline by the end of 1982, and economic conditions improved as the severe recession that had begun a year earlier ended. Lower interest rates and favorable economic conditions throughout the nation as a whole did facilitate the recovery of some thrifts, but a large and rapidly growing segment of the industry continued to incur heavy losses. Although rising interest rates had triggered the savings and loan crisis, the subsequent decline in interest rates to more normal levels failed to restore financial health to many of the insolvent institutions that had been kept open.

It was apparent to all in the industry by this time that the FSLIC did not have the resources to give attention to more than a few of the most financially troubled institutions. The number of Bank Board and FHL bank examination and supervisory personnel actually declined between 1981 and 1984, even as the number of thrift insolvencies soared (Barth and Bradley 1988, 46-47). Attempts by the Bank Board to augment the supervisory staff were discouraged by the Office of Management and Budget. Armed

with an unlimited government financial guarantee and new investment powers, many insolvent thrifts found it easy to engage in a variety of risky and imprudent investment schemes. As time went on, evidence surfaced that the losses at many institutions were attributable to gross mismanagement, and in some cases to outright fraud.

The rapidly deteriorating financial condition of the many insolvent S&Ls that had been kept open had begun to become apparent as early as 1983, when the Bank Board began taking steps to limit the risks that poorly capitalized but aggressively managed thrifts imposed on the FSLIC. The agency proposed rules to limit the use of brokered deposits by undercapitalized, rapidly expanding thrifts. That attempt ultimately proved unsuccessful, however, when the courts ruled that the agency lacked the legal authority to impose such a rule and lawmakers refused to grant the necessary authority.

Capital requirements were raised for newly chartered institutions, but the new capital requirements were not applied to existing institutions. The income-capital certificate program was briefly discontinued, only to be revived again two years later. In 1985, the Bank Board proposed to effectively raise minimum net worth requirements by rescinding some of the liberal accounting rules introduced in 1981. It also proposed to limit the investment powers of undercapitalized federally insured thrifts.

Unfortunately, these initiatives proved largely ineffective in stemming the growing losses incurred by insolvent and inadequately supervised thrifts. Attempts by the Bank Board to restrict the activities of state-chartered thrifts drew considerable resistance from legislators and regulators in states such as California, Florida, and Texas, where those institutions had been granted broad investment powers. Managers of insolvent thrifts, aware that the FSLIC lacked the resources to closely supervise more than a fraction of all the undercapitalized institutions it insured, proved difficult to control. Thrift industry assets grew almost 20 percent in 1984 alone (See GAO, *Thrift Industry Restructuring*, 1985, p. 8). Unlike the initial financial difficulties of most insolvent thrifts, which were largely attributable to the effect of high interest rates on the value of their mortgage portfolios, most losses after 1982 stemmed from credit quality problems. According to Brumbaugh (1988, p. 67), asset quality problems were the principal cause behind the losses experienced by 80 percent of the institutions comprising the FSLIC's

caseload of problem thrifts in 1984. In contrast, asset quality problems were seen to be the primary cause of the losses experienced by only 20 percent of problem thrifts between 1980 and 1984.

In certain respects the Garn-St. Germain Act can be judged to have achieved its goals. Mortgage assets declined as a proportion of all assets held by savings and loans after 1982, with insolvent institutions taking greatest advantage of their new investment powers. Unfortunately, the institutions most aggressive in exploiting their new powers also experienced the greatest deterioration in asset quality. Those institutions subsequently exposed the FSLIC to large losses (Barth and Bradley 1988, Tables 4 and 5).

The Management Consignment Program By 1985, it was becoming apparent that the combined policy of regulatory forbearance and deregulation first adopted in response to the thrift industry crisis had failed to restore financial health to the industry. Instead, it was proving to be a prescription for disaster. In an attempt to gain greater control over insolvent thrifts that continued to experience growing losses, the Bank Board instituted its "Management Consignment Program" (MCP). An institution brought into the MCP typically had its management replaced with a conservator selected by the Bank Board. The program was conceived as a means of temporarily warehousing hopelessly insolvent institutions until they could be sold or liquidated by the FSLIC. Many institutions placed in the MCP in 1985 were still in the program and still incurring losses two years later (see GAO, *The Management Consignment Program*, 1987).

The income-capital certificates program was re-introduced for institutions placed in the MCP. Using its own promissory notes to "recapitalize" insolvent thrifts, the FSLIC attempted to sell or merge those institutions. But as industry conditions grew worse, it became increasingly apparent to market participants that the FSLIC lacked the financial resources to deal with the heavy losses accumulated by troubled S&Ls. Potential acquirers became reluctant to accept the FSLIC's promissory notes, further hampering the agency's efforts to sell off insolvent thrifts. Investor reluctance to accept FSLIC notes stemmed at least in part from a ruling by the Financial Accounting Standards Board that such notes could not be counted as assets in determining net worth under Generally Accepted Accounting Principles (see GAO, *The Management Consignment Program*, 1987).

The Demise of the FSLIC

By 1985, the rapidly deteriorating condition of many insolvent thrifts had so strained the resources of the FSLIC that the Bank Board finally had to admit that the insurance fund needed outside funding. But as long as depositors at insolvent thrifts felt confident that the U.S. Treasury would ultimately guarantee the safety of their deposits, they had no reason to withdraw their funds. And as long as insolvent thrifts could continue to attract deposits, there was no incentive to appropriate the funds needed to recapitalize the FSLIC. As a result, hundreds of insolvent institutions were permitted to continue accumulating losses until the condition of the FSLIC became so critical that private investors began to question whether the U.S. government would ultimately honor all the debts accumulated by the FSLIC. In the end, the actions of private investors ultimately forced lawmakers to recapitalize the savings and loan industry's insurance fund.

Early attempts to recapitalize the FSLIC In 1985, a study published by staff members of the FHLBB concluded that 400 to 500 FSLIC-insured thrifts were GAAP insolvent and estimated the cost of resolving those insolvencies at \$15.8 billion. The FSLIC's official reserves in 1985 were less than \$6 billion. The report concluded that closing or reorganizing even a fraction of the insolvent thrifts insured by the FSLIC would deplete the insurance fund's reserves (Barth, Brumbaugh, Sauerhaft, and Wang 1985).

Later that year, FHLBB Chairman Edwin Gray acknowledged to Congress that the FSLIC lacked the funding it needed to deal with its caseload of problem institutions. To raise the necessary funds, he proposed imposing a one-time assessment of one percent on all FSLIC-insured thrifts, as the Bank Board was authorized to do by law (see *American Banker*, 10/17/85). But Gray's proposal encountered a great deal of resistance from the savings and loan industry and was subsequently withdrawn. Instead, the FSLIC exercised its authority to impose a 1/8 percent special deposit insurance assessment. The special assessment generated an additional \$1 billion in 1985, but that amount fell far short of providing the FSLIC with the funding it needed to continue operating (Brumbaugh 1988, p. 51).

Alarmed by the Bank Board's bleak assessment of financial condition of the thrift industry and its insurance fund, Congress asked the General Accounting Office to prepare a report on industry

conditions and the implications for the FSLIC fund. The GAO report, released in February of 1986, concluded that the cost of closing insolvent FSLIC-insured thrifts in operation at the time could be as high as \$22.5 billion, an amount well in excess of the FSLIC's reserves (see GAO, *Potential Demands on the FSLIC Fund*, 1986). In a subsequent Congressional hearing, a GAO official concluded that most of the insolvent thrifts being "warehoused" by the FSLIC were unlikely to ever recover. He went on to estimate that it could take anywhere from 5 to 20 years to work out the problems of insolvent thrifts (see *Washington Financial Reports*, 3/10/86).

Obstacles confronting recapitalization Bank Board and U.S. Treasury officials had begun meeting in late 1985 to devise a recapitalization plan for the FSLIC. FHLBB Chairman Edwin Gray unveiled the Reagan administration's plan in March of 1986. The stated goal of the plan was to effect a recapitalization of the FSLIC without taxpayer funding. The plan relied on a transfer of resources from the Federal Home Loan Banks and a continuation of the special deposit insurance assessment against thrifts as part of an elaborate arrangement devised to keep funding costs off the government budget.⁷

Enactment of the recapitalization measure was delayed for over a year, however, because it encountered a great deal of opposition from the thrift industry. There were two reasons for this opposition. The first was the plan's reliance on an indefinite continuation of the annual 1/8 percent special deposit insurance assessment. Thrift industry spokesmen maintained that the plan's reliance on a continuation of the special deposit insurance assessment to service such a debt load placed an unfair burden on the solvent institutions. Industry representatives argued further that the proposed \$15 billion funding authority would give the FSLIC much more than it needed to deal with its caseload of troubled institutions.

⁷ The plan called for the creation of a shell funding corporation that would issue bonds to fund the FSLIC. The funding corporation was to be capitalized through the transfer of a portion of the excess capital of the Federal Home Loan Banks. The initial capitalization was to be used to purchase zero-coupon Treasury bonds. These bonds were to provide collateral securing the repayment of the bond principal. Interest payments on the bonds were to be serviced by revenues to be generated by continuing the special deposit insurance assessment imposed on FSLIC-insured thrifts. This complicated funding scheme was chosen because it avoided the direct appropriation of federal funds and so permitted the cost of the plan to be kept off the government's budget. The plan provided the basic framework behind the Competitive Equality Banking Act of 1987, which established the Financing Corporation (FICO) to issue off-budget debt obligations. See Brumbaugh (1988, ch. 3) for more details.

As an alternative to the administration-sponsored initiative, industry representatives proposed a plan that would require less borrowing by delaying the reorganization of some insolvent thrifts for ten years or more. They also lobbied for a formal timetable for the phaseout of the special deposit insurance assessment (see *Washington Financial Reports*, 7/28/86).

A second objection to the recapitalization plan stemmed from the prospect of an end to policies of regulatory forbearance. Regulatory forbearance had become a politically popular policy. So many thrifts had become financially troubled by this time that the group constituted a powerful special interest lobby. The majority of thrift insolvencies were concentrated in geographic areas experiencing severe regional economic problems. Congressional representatives from economically depressed areas argued that closing or reorganizing the financially troubled institutions in their districts would further exacerbate economic problems in those regions (Brumbaugh 1988, p. 174). Attempts by some lawmakers to link recapitalization of the FSLIC with a broader regulatory reform proposal further slowed down action on the measure.

FSLIC declared insolvent As debate over the recapitalization measure dragged on into 1987, the FSLIC's need for funding began to grow critical. Insolvent thrifts in Texas and the Southwest, where most problem institutions were concentrated, were forced to pay rising premiums over market rates in an effort to attract deposits (Brumbaugh 1988, pp. 70-74; Hirschhorn 1990). As public concern over the FSLIC's financial condition grew, the risk premiums paid by insolvent institutions rose significantly (Hirschhorn 1989a, 1989b).

In an effort to find an alternative funding source, the Bank Board had turned to the Federal Home Loan Banks. The FHL banks typically extended advances to member institutions under the security of certain collateral, most often home mortgages. Insolvent thrifts experiencing the greatest difficulty attracting deposits could not easily expand their borrowing from the FHL banks, however, because they could not post the necessary collateral. The Federal Home Loan Bank System had been established to provide a source of funding for home mortgages, not to supply capital to insolvent thrifts. To facilitate lending to insolvent S&Ls, the Bank Board authorized the FHL banks to extend advances secured by promissory notes issued by the FSLIC (see GAO,

Forbearance for Troubled Institutions, May 1987; and *The Management Consignment Program*, September 1987). By the end of 1986, the Dallas FHLB had issued over \$1 billion in advances to insolvent thrifts secured only by FSLIC notes.

Early in 1987, the GAO announced that the FSLIC had become officially insolvent, with its deficit estimated to exceed \$3 billion at the end of 1986 (see "Statement of Frederick D. Wolf" in U.S. Congress, House, March 1987; and *Wall Street Journal*, 3/4/87). The announcement by the GAO raised concerns over the creditworthiness of the FSLIC's promissory notes. A few days after the GAO's public statement, the accounting firm of Delloite, Haskins and Sells, which had been hired to audit the financial statements of the Federal Home Loan Banks, threatened to issue a qualified opinion on the financial condition of the Federal Home Loan Bank of Dallas.

The \$1 billion the Dallas FHLB had advanced solely on the security of FSLIC notes constituted a significant fraction of the bank's capital. Based on the GAO audit of the FSLIC, the Dallas bank's auditor had concluded that the fund might be unable to back the guarantees securing the bank's advances to insolvent thrifts. A qualified auditor's opinion would have made it virtually impossible for the Dallas bank to raise funds in private capital markets. The FSLIC's mounting financial problems had come to threaten the financial stability of the entire Federal Home Loan Bank System.

To avoid receiving a qualified opinion, the Dallas FHLB demanded immediate repayment of the \$1 billion in FSLIC notes it was holding. Fearing that a qualified opinion on the condition of the Dallas bank could cast doubt on the creditworthiness of the entire FHLB system, the Bank Board quickly acceded to the Dallas FHLB's demand and instructed the FSLIC to repay the notes it had issued.⁸ Repayment of the notes left the FSLIC with less than \$1 billion in cash reserves.

During this period, the Dallas FHLB instituted a program to secure an alternative funding source for

⁸ The Federal Home Loan Bank System funds the advances it extends to member institutions through the sale of bonds to private investors. Obligations issued by the Federal Home Loan Bank System are the joint liability of all twelve Federal Home Loan Banks. Moreover, the Dallas FHLB was not the only bank in the system that had lent against the security of FSLIC notes; it just had a relatively greater exposure to loss in the event of a default by the FSLIC (see *American Banker*, 3/16/87).

insolvent thrifts. Relatively healthy thrifts that could still attract deposits were induced to place insured deposits with insolvent thrifts experiencing funding problems (see *Wall Street Journal*, 3/2/87). But this program by itself failed to provide sufficient funding for insolvent thrifts. In June, the outflow of deposits from troubled Texas thrifts began to accelerate. Officials of the Dallas FHLB were forced to negotiate with deposit brokers in an effort to ensure that troubled thrifts in that district could continue to raise funds through brokered deposits (see *American Banker*, 6/11/87). It was only a few years earlier that the Bank Board had attempted to curb insured thrifts' reliance on deposit brokers. Ironically, the agency found itself relying on the same brokers to continue funding the problem institutions it was struggling to keep open while waiting for the enactment of a recapitalization measure.

The Competitive Equality Banking Act of 1987 For a time, it appeared that opponents of the recapitalization bill would be successful in limiting the amount of funding approved by Congress to \$5 billion, an amount the GAO had concluded would be insufficient to deal with the magnitude of losses accumulated by insolvent thrifts (see GAO, *The Treasury/Federal Home Loan Bank Board Plan for FSLIC Recapitalization*, March 1987). However, revelations of large-scale fraud at a number of financially troubled thrifts that had been kept open through regulatory forbearance created pressure to enact a larger recapitalization measure. The Competitive Equality Banking Act (CEBA), enacted in the summer of 1987, authorized the issue of \$10.8 billion in bonds to recapitalize the FSLIC. The bill also included language mandating the extension of forbearance to financially troubled thrifts operating in certain designated economically depressed areas of the country.

Legal status of FSLIC Notes questioned Within months of the passage of the recapitalization bill, articles discussing the ultimate necessity of a taxpayer-funded bailout of the FSLIC began appearing in the financial press (see *American Banker*, 11/18/87). In November, the American Institute of Certified Public Accountants (AICPA) issued its *Practice Bulletin 3* warning auditors to consider the risks associated with any FSLIC notes appearing on the balance sheets of thrifts because of the insurer's questionable financial condition. A provision pledging the full faith and credit of the U.S. government behind all federally insured deposits had been included in the CEBA. But whether this pledge extended to

promissory notes issued by the FSLIC to private investors was uncertain. As the ensuing events show, the AICPA warning marked an important turning point in the unfolding crisis. By limiting the FSLIC's ability to continue issuing debt, the AICPA bulletin helped to precipitate a funding crisis that ultimately forced lawmakers to recapitalize the savings and loan industry's insurance fund.

In April of 1988, the Federal Home Loan Bank of Dallas was forced to issue its 1987 annual report without an auditor's opinion. Since its last audit, the Dallas bank had once again begun lending on the security of FSLIC notes and had \$500 million in such advances outstanding. Its accounting firm, Delloite, Haskins and Sells, withheld its opinion on the bank's financial condition pending the release of the GAO's audit of the FSLIC (see *BNA's Banking Report*, 4/18/88).

When the FSLIC released its preliminary 1987 annual report a week later, it acknowledged that despite the additional funding the agency had received in 1987, it was still insolvent at the end of the year. According to Bank Board officials, the extent of the FSLIC's insolvency had almost doubled, to \$11.6 billion, during 1987 (see *BNA's Banking Report*, 4/25/88).

Based on its audit, the GAO concluded that the FSLIC had understated the extent of its insolvency. The government's auditors projected the cost of resolving the FSLIC's existing caseload of insolvent thrifts would be in excess of \$17 billion, leaving the agency with a deficit of \$13.7 billion at the end of 1987. The GAO report went on to warn of the costs of dealing with the more than 300 insolvent thrifts that the FSLIC had yet to formally place under receivership, which it cautioned could reach as high as \$19 billion. Based on these cost projections, a GAO spokesman concluded that "further congressional action, beyond that already taken under the Competitive Equality Banking Act of 1987 to recapitalize the Corporation [FSLIC], may well be needed to enable the Corporation to continue to meet its obligations (see U.S. Congress, Senate, May 1988). Later that year, the GAO would acknowledge that its earlier estimates had grossly underestimated the extent of the FSLIC's insolvency.

In July, the accounting firm of Delloite, Haskins and Sells finally released an unqualified opinion on the financial condition of the Dallas FHLB. However, its report voiced concerns over the ultimate collectibility of the FSLIC notes the bank held as collateral

for its advances to insolvent thrifts, and warned the bank to limit such advances in the future (see *American Banker*, 7/29/88).

Although the Dallas FHLB had received an unqualified opinion on its financial condition, there was still considerable concern over the ultimate creditworthiness of the FSLIC's promissory notes. The Bank Board had announced an ambitious plan to reorganize and sell a record number of insolvent thrifts during 1988, but the plan depended on the willingness of private investors to accept FSLIC promissory notes and other financial guarantees. But news of the FSLIC's deteriorating financial condition made buyers increasingly reluctant to accept the fund's notes. Because the AICPA had warned auditors to consider the ultimate collectibility of FSLIC notes as questionable, potential acquirers faced the risk that auditors would not grant the institution an unqualified opinion if its balance sheet included FSLIC notes among its assets. Securities and Exchange Commission regulations made it virtually impossible for a firm that received a qualified auditor's statement to sell its securities to investors.

To facilitate the issue of more FSLIC notes, FHLBB Chairman Wall asked the U.S. Congress to pass a resolution placing the full faith and credit of the U.S. government behind notes issued by the FSLIC. The Senate voted in favor of such a measure in August, but the proposal encountered resistance in the House of Representatives.

At issue was the question of whether the issuance of notes and financial guarantees by the FSLIC constituted unauthorized borrowing in excess of the amount the FSLIC was legally permitted to borrow under the CEBA. Confidence in the Bank Board had been undermined by the fact that the agency kept revising its estimates of the ultimate cost of resolving insured thrift insolvencies. Between the start of the year and July of 1988, the Bank Board revised its estimates of the cost of resolving thrift insolvencies on at least three separate occasions, almost doubling its projected costs from \$22.7 to \$42.5 billion. Some members of Congress felt that the Bank Board had not been forthcoming with details of its planned expenditures. Rep. John LaFalce clearly summarized the issues surrounding the debate over granting FSLIC notes full faith and credit status: "We are now in a position where the Bank Board has, in effect, issued at its whim unlimited Treasury debt at levels in excess of its FICO bond authority which the Congress is now being pressured to belatedly

guarantee in order to keep the FSLIC and the industry afloat (see *BNA's Banking Report*, 8/15/88)."

The prospects for a favorable vote on the resolution requested by the Bank Board were, therefore, dubious at best. In an apparent effort to avoid an explicit rejection of the full faith and credit resolution by Congress, Chairman Wall announced he had withdrawn his request for a vote on the resolution on September 8. Although Reagan administration officials had supported enactment of the resolution at first, Treasury Department officials later announced that the request was withdrawn because they had determined that notes issued by the FSLIC already enjoyed U.S. government backing (see *BNA's Banking Report*, 9/19/88).

The GAO publicly supported the Treasury Department's position (see *BNA's Banking Report*, 11/11/88[2]). But the AICPA was not satisfied by these pronouncements. The organization told the Bank Board that in the absence of a congressional resolution, it would require an opinion by the U.S. Attorney General on the legal status of FSLIC notes before it would reconsider its warning to auditors on the status of FSLIC notes. At first the Bank Board agreed to ask the Attorney General to issue an opinion (see *BNA's Banking Report*, 9/19/88 and 11/7/88). However, in November a Bank Board spokesman announced that FHLB Chairman Wall had decided not to seek the Attorney General's opinion after all. Instead, legislation clarifying the legal status of FSLIC notes would be sought from the 101st Congress when it convened the following year (see *BNA's Banking Report*, 11/11/88[1]).

By this time the FSLIC's situation had become desperate. The 1987 recapitalization measure had failed to provide enough funding and the 100th Congress had refused to authorize the issue of more promissory notes. The Bank Board had estimated it could not service more than \$16 billion in notes and guarantees (see *American Banker*, 9/19/89). But by November the agency had committed itself to nearly \$25 billion in obligations, which included various financial guarantees to purchasers of insolvent thrifts as well as promissory notes (*BNA's Banking Report*, 11/11/88[3]). For almost a decade the Bank Board had struggled to keep insolvent thrifts open in an effort to forestall the need to close those institutions and pay off insured depositors. Insulated from the discipline that the market normally places on risk-taking, many of those institutions had embarked upon questionable and risky investments that

had produced staggering losses. Now a default by the FSLIC appeared imminent. Private investors would no longer accept the insurance fund's promises and financial guarantees, but insisted on firm evidence that it would be given the resources to meet those obligations. In the end, it was the discipline imposed by private investors that finally forced action to restore the thrift industry's insurance fund to solvency.

The Financial Institutions Reform, Recovery, and Enforcement Act of 1989

Projected costs of dealing with the growing backlog of hopelessly insolvent thrifts continued to climb throughout 1988. By the end of the year, the GAO had raised its estimate to over \$100 billion (see *BNA's Banking Report*, 12/19/88). But the 100th Congress had adjourned without providing additional funding for the FSLIC, and so one of the first problems facing the incoming Bush Administration was that of devising a plan to rescue the insurance fund from an impending default.

The Bush Administration unveiled its plan to deal with the burgeoning crisis in the savings and loan industry on February 6, 1989. In addition to asking Congress to authorize funding to recapitalize the FSLIC, the Bush Plan also mandated a complete reorganization of the federal savings and loan regulatory system. The FDIC was called upon to assume supervisory control of insolvent savings and loans until the proposed legislation was ratified by Congress (see *BNA's Banking Report*, 2/13/89). The Bush Plan became the model for the Financial Institutions Reform, Recovery and Enforcement Act, or FIRREA, enacted in August of 1989.

The new savings and loan regulatory system created by the act is noteworthy in at least two respects. First, FIRREA represents an effort to regulate savings and loans by restricting their investment powers and requiring them to specialize more in mortgage lending. It also calls for an end to the capital forbearance policies instituted in the 1980s, requiring savings and loans to meet capital requirements at least as stringent as those imposed on commercial banks. The new regulations are to be enforced through enhanced supervisory controls and stricter penalties in cases involving fraudulent or criminal activities.

Second, FIRREA brought about a complete reorganization of the federal savings and loan regulatory agencies. The law dissolved the FSLIC

and established a new deposit insurance fund, the Savings Association Insurance Fund, or "SAIF," under the auspices of the FDIC. It created a new agency, the Resolution Trust Corporation (RTC), to take control of the FSLIC's caseload of insolvent savings and loans. FIRREA also disbanded the Federal Home Loan Bank Board, replacing it with a new federal chartering agency under the direction of the Secretary of the Treasury, known as the Office of Thrift Supervision, or OTS. The goal behind this restructuring was to eliminate perceived conflicts of interest inherent in the old system, whereby the chartering agency was also responsible for administering the deposit insurance fund. As the history of the savings and loan crisis revealed, that organizational structure created a situation where the chartering agency had both the incentive and the means to delay resolution of the problem for a protracted period.

Unlike earlier attempts to resolve the financial difficulties facing the savings and loan industry, the enactment of FIRREA was accompanied by a recognition that government funding would be needed to resolve the crisis. In addition to allocating funds to pay off the obligations incurred by the FSLIC before its dissolution, the RTC is to receive \$50 billion in additional funding.⁹ The law also imposed higher deposit insurance assessments for commercial banks as well as thrifts to raise the reserves of each industry's deposit insurance fund.

III. DEPOSIT INSURANCE REFORM

With the demise of the FSLIC, government regulators have been left to deal with a backlog of almost 600 insolvent savings and loans. Estimates of the ultimate cost of resolving the remaining thrift

⁹ In addition to providing for continued funding of FSLIC obligations incurred prior to the dissolution of the fund, FIRREA authorized the RTC to borrow \$50 billion to use in dealing with insolvent thrifts. A new funding agency, the Resolution Funding Corporation (REFCORP), was created to borrow \$30 billion. Like the funding corporation used to borrow the funds allocated by the CEBA, REFCORP was capitalized by a transfer of surplus capital from the Federal Home Loan Banks and was created to minimize the impact of the deposit insurance rescue plan on the government's budget deficit. Because the Federal Home Loan Banks provided the funding to guarantee repayment of the principal, funds borrowed by REFCORP are not officially classified as U.S. Treasury debt. The Treasury was authorized to borrow the remaining \$20 billion and to transfer the proceeds to the RTC. To the extent that deposit insurance assessments levied against savings and loans fall short of the amount needed to service REFCORP debt, the Treasury bears responsibility for providing the funds needed to maintain the interest payments on such debt.

insolvencies have continued to rise since the enactment of FIRREA. The crisis created by the collapse of the savings and loan industry's insurance fund suggests that the deposit insurance system is in need of reform. In this section we critically analyze alternatives for regulatory and deposit insurance reform, beginning with the reforms put in place by FIRREA.

A Critical Review of FIRREA

FIRREA represents the most sweeping financial regulatory legislation enacted since the Great Depression. It not only created a new deposit insurance fund, but completely restructured the savings and loan regulatory system established in the 1930s. FIRREA also marks at least a temporary halt in a trend toward financial deregulation evident in legislation enacted earlier in the decade.

The new law's emphasis on stricter regulation and enhanced supervision represents an attempt to limit potential future losses stemming from bank and thrift insolvencies, but such measures address the symptoms of the present crisis rather than its causes. The financial problems that beset savings and loan institutions earlier in the decade were rooted in restrictive regulations that prohibited thrifts from diversifying their investments, making them vulnerable to interest rate risk. While it is prudent to limit the investment powers of insolvent institutions until they can be reorganized, the events of the last decade give cause to question whether such a regulatory structure can assure a financially sound and profitable industry over the longer run.

Recently, some analysts have begun to question whether depository institutions limited to investing predominantly in residential mortgages can remain viable. Brumbaugh and Carron (1989), for example, argue that recent changes in the financial markets have made funding mortgage lending less profitable for insured deposit-taking institutions. As the market for mortgage-backed assets has become more efficient, with investors bypassing financial intermediaries by buying and holding mortgage-backed securities directly, there appears to be less of a need for specialized, deposit-taking intermediaries dedicated to warehousing mortgage loans.

To be certain, intermediaries specializing in residential housing finance will continue to play an important role in the U.S. economy. But it now appears that only a fraction of existing savings and loans will find it profitable to continue specializing in mortgage lending. What this means is that the

industry may well need to contract. Much of that contraction will come about through consolidation. But the contraction of an industry is often accompanied by the withdrawal of firms from that industry. If the new, more restrictive regulatory structure makes it difficult for insured thrifts to earn profits, the industry could continue to experience financial difficulties in the future. Financial intermediaries specializing in residential lending may prove viable only if affiliated with larger, diversified financial firms. FIRREA permits commercial banks to acquire financially healthy thrifts for the first time (in the past, commercial banks were only permitted to take over failing savings and loans). And, as Brewer (1989) observes, simply requiring savings and loans to specialize more in mortgage lending will not prevent excessive risk-taking if that is the goal of an institution's management.

Can "It" Happen Again?

One area of regulation FIRREA did not address is the mechanism for resolving failures of insured depositories. New rules specify higher minimum net worth requirements for savings and loans, but there is no statutory provision ensuring that insolvent institutions will be closed more promptly in the future than they have been in the past. As long as deposits are fully insured there is no market mechanism to ensure the prompt closing of insolvent institutions. In the end, how thrift insolvencies are handled will still depend on the resources available to the deposit insurance fund.

An important lesson emerging from the savings and loan crisis is that the deposit insurance funds themselves can become insolvent. As Barth, Bartholomew, and Bradley (1989a) have noted, the system as it is presently organized lacks certain important safeguards that one would expect to be present in private insurance arrangements. Government-sponsored deposit insurance was not intended to be self-financing, as private insurance arrangements are, but ultimately relies on government guarantees to provide depositors with assurances of the safety of the funds they place with banks. At the same time, existing laws do not mandate immediate action to recapitalize the deposit insurance fund if it becomes insolvent, nor do they specify how the claims against an insolvent fund are to be resolved. Thus, the conditions that made the present-day crisis in the savings and loan industry possible are still present.

Regulation and Deposit Insurance

The rationale most often given for government bank regulation centers around the importance of

promoting the safety and soundness of the banking system. But much of the existing financial regulatory system cannot easily be rationalized on these grounds. A growing body of historical research makes clear that the existing regulatory structure developed to address many different public policy goals, with bank safety and financial stability constituting only one of those goals.¹⁰

When legislation sets out complex rules governing economic relations and market structure, it is common for government regulatory agencies to be established to interpret, administer, and enforce those rules. Because legislation rarely specifies exact responses to every conceivable set of circumstances, regulatory agencies typically are granted a certain amount of discretion in interpreting policy guidelines and engaging in rulemaking. But when the underlying goals of an agency are vague or seem to conflict, the grant of discretion gives regulatory agencies the power to establish the relative importance of different policy goals.

With discretionary powers, the incentives facing regulators become important factors determining the primary goals of regulation. As Posner (1974) points out, employees of government agencies have strong incentives to please their legislative overseers and to perform competently to increase the value of their future prospects in the private sector. The incentives and priorities of lawmakers, in turn, are determined by political forces.

Because the actions of regulators can and often do result in a redistribution of economic resources, regulated firms have a considerable incentive to lobby for rules that they perceive to be in their own self-interests. Thus, regulators invariably face political pressures when setting goals and priorities, though these pressures are not always explicit.

¹⁰ Kareken's (1986) comprehensive analysis of the present-day system of bank regulation led him to conclude that the system could not be rationalized by an appeal to concerns over safety and soundness, especially in the area of regulatory restrictions on bank branching and geographic expansion. Shull (1983) produces historical evidence that early laws mandating the separation of banking and commerce were rooted in concerns unrelated to safety and soundness issues. Other authors have concluded that the securities underwriting activities of commercial banks had little to do with the widespread bank failures that accompanied the Great Depression, and have attributed the motivation behind the legal separation of commercial and investment banking to factors unrelated to safety and soundness concerns (Huertas 1984; Flannery 1985; Kaufman 1988; and Shughart 1987).

Deposit insurance requires some form of regulation and supervision to contain the incentives for risk-taking inherent in the system. Therefore, the issue of deposit insurance reform cannot be addressed separately from that of regulatory reform. To address the issue of regulatory reform, one must first ask whether the existing regulatory structure imposes conflicting goals that compromise the ability of regulators to limit risk-taking by banks and thrifts.

A review of the events leading to the present thrift crisis reveals that early resolution of the industry's financial problems was hampered by conflicting goals embedded in the regulatory system. The regulatory structure imposed on the savings and loan industry was designed in large part to subsidize credit flows for residential housing by increasing the supply of mortgage lending. In addition to being the agency that chartered federal savings and loans, the Federal Home Loan Bank Board also bore responsibility for managing the FSLIC. The Bank Board was also explicitly charged with promoting private home ownership as well as the interests of the savings and loan industry.

The situation is further complicated by the fact that state legislatures also have the authority to charter and regulate insured savings and loans. These legislatures can gain much of the political benefits derived from the subsidization of thrifts and local construction interests while allowing the FSLIC to underwrite much of the risk.

Once the crisis began, deposit insurance was used to keep many insolvent thrifts open in an attempt to prevent the reallocation of resources from those institutions and the regions they served. Debate over how much of the cost of recapitalizing the FSLIC should be borne by the thrift industry itself paralyzed action to resolve the crisis for a number of years. A reluctance on the part of lawmakers to appropriate the funds needed to close insolvent thrifts and recapitalize the FSLIC further delayed a resolution of the crisis.

Excessive risk-taking on the part of insolvent thrifts was tolerated because the regulatory system gave no one the incentive to take the decisive steps that would have been necessary to stop it. When hundreds of savings and loans began to fail, industry regulators lacked the resources to close those institutions and pay off depositors, or, for that matter, to adequately monitor them. At this point, the FSLIC itself was insolvent and its management began behaving as any

other insolvent organization would be expected to behave. Under the circumstances, the only alternative the Bank Board had to keeping insolvent institutions open would have been to impose losses on insured depositors, an action that was never seriously considered. Legislation enacted during this period, notably the Garn-St. Germain Act, made it clear that lawmakers preferred accepting the risks that came with taking no action against insolvent institutions to other available alternatives.

The response of the federal regulatory system to events as they unfolded in the course of the thrift crisis stand in stark contrast with the way insolvencies are resolved in unregulated private market arrangements. In periods of financial distress, the nineteenth century clearinghouses sometimes found it necessary to suspend payments. But those organizations continued to monitor all members closely and acted promptly to force banks that exposed other clearinghouse members to excessive risks out of the system. Although bank and thrift regulators have the right to revoke deposit insurance, they rarely exercise this right as a practical matter.

Simply giving regulators more discretionary powers to deal with failing institutions does not appear to offer a solution to the problem of limiting losses borne by the deposit insurance funds. Administrators of the FSLIC had greater discretionary powers in choosing how to deal with financially troubled savings and loans than did the FDIC in its dealings with failing banks. But the historical record shows that the grant of greater discretionary powers did not ensure that the losses insolvent institutions were permitted to impose upon the insurance fund would be contained. As Kaufman (1989, p. 1) notes:

bank regulators . . . avoid taking actions that could put them in conflict with powerful parties who would experience large dollar losses, such as uninsured depositors or other creditors, management, owners, and even large borrowers. In addition, the regulators frequently believe that such actions would be an admission of failure not only of the bank but also of their own agency, which is charged with bank safety and evaluated by many on its ability to achieve this condition.

Insulating the economy from the potentially disruptive effects of bank and thrift failures remains an overriding goal of regulators. While it is hard to take issue with this goal, history shows that when attempts to minimize disruption are permitted to completely subvert the normal market forces that would otherwise act to close insolvent institutions, the results can be disastrous. Unless market participants are

forced to internalize some of the risk associated with their actions, they have no incentive to limit risk-taking.

That thrift industry regulators were hampered by conflicting goals that interfered with their ability to protect the resources of the deposit insurance fund now seems to be widely acknowledged. Avoiding a repetition of the current thrift industry crisis depends on our ability to devise a system that will guarantee the prompt closure of institutions once they become insolvent while limiting the potential disruptive effects of such occurrences.

Lessons from Bankruptcy Law Reform

The present system of bankruptcy laws were enacted by Congress in 1978 and amended in 1984 and 1986. This legislation instituted sweeping reforms to the administration of bankruptcy courts and the system of bankruptcy resolution. Before these recent reforms, the bankruptcy judge had duties much broader than those of an impartial referee. Under the old law, the bankruptcy judge (originally called the "bankruptcy referee") was given the role of administering bankruptcy cases under the general supervision of the district judge, who held the ultimate legal authority to adjudicate any cases arising from the bankruptcy proceedings. But over time, the role and authority of the referee grew until the "referee" became a bankruptcy judge who exercised judicial power to decide disputes among different parties.

Thus, the role of the bankruptcy referee, or administrator, had grown beyond that envisioned by the laws that created the position. The authors of the earlier law had envisioned a court-appointed administrator acting under the oversight of an independent and impartial judicial authority. But oversight and administrative duties had come to be delegated to a single agent, one who lacked the insulation from outside influence normally provided to members of the judiciary. According to Treister, et al. (1988, pp. 5-7), this dual role came to be perceived as the "most glaring defect of the former bankruptcy system."

Dissatisfaction with this system led Congress to establish a special Commission on Bankruptcy Laws of the United States to study, analyze, and recommend changes in the bankruptcy laws in 1970. The Commission's findings, published in 1973, noted that:

making an individual [the bankruptcy judge] responsible for conduct of both administrative and judicial aspects of a bankruptcy case is incompatible with the proper performance of the judicial function. Even if a paragon of integrity were sitting on the bench and could keep his mind and feelings insulated from influences which arise from his previous official connections with the case before him and with one of the parties to it, he probably could not dispel the appearance of a relationship which might compromise his judicial objectivity (as cited in Treister, et al. 1988, p. 7).

One of the principal reforms brought about by the Bankruptcy Reform Act was to free the bankruptcy judge from acting in the role of administrator and enhance his judicial role. Before the Act, bankruptcy "referees" were only appointed to serve "during good behavior." The Bankruptcy Reform Act provided for the appointment of bankruptcy judges to fixed 14-year terms. Appointments were made by the president, with the advice and consent of the Senate. The Act also provided for an independent system of United States Trustees under the auspices of the Justice Department for cases where an administrator for the bankruptcy estate needed to be appointed.¹¹

What lessons do these events hold for deposit insurance reform? The bankruptcy code explicitly recognizes the possibility of conflicts of interest inherent in a system where an agent appointed to resolve firm insolvencies is given roles that may create conflicting goals. To avoid such potential conflicts, bankruptcy law provides for a separation of the different roles, separating the referee, or bankruptcy judge, from the role of the trustee appointed to administer the estate. The role of the bankruptcy judge is intentionally limited to mediating disputes among different parties with claims against the firm.

Banking law gives the deposit insurer the dual role of receiver and claimant in the event of a bank failure. The potential for conflicting goals arising from such a system would appear to greatly exceed those inherent in the old bankruptcy system. Recent bankruptcy law reforms suggest an alternative framework, one based on judicial oversight that would sharply limit the discretion of the deposit insurer in dealing with failing institutions.

¹¹ At first Congress was not convinced that an administrative apparatus such as this, outside the Judicial Branch, was needed. Accordingly, a pilot project was established. The United States Trustee system was made a permanent part of the bankruptcy system in 1986 (Treister, et al. 1988, pp. 85-91).

A Role for Enhanced Judicial Oversight

One necessary ingredient for providing successful deposit insurance is a precommitment to closing insolvent depository institutions promptly. With unregulated commercial firms, this precommitment is achieved through legal bankruptcy proceedings in which claims against the insolvent firm are resolved under the auspices of an independent judiciary. This observation suggests that one way to credibly commit to close failing banks and thrifts would be to expand the role of the judicial system to make the resolution of bank and thrift insolvencies subject to the same kind of judicial oversight that characterizes regular bankruptcy proceedings. Posner (1974) emphasizes that many features of law are designed to pursue overall efficiency gains. By its very design, the legal system is more immune to political pressures than government regulators. Using the judiciary to limit the discretion of regulatory agencies may be one way of ensuring that the regulatory process is governed by legislative guidelines.

To ensure that failing banks and thrifts are forced into legal insolvency proceedings, some depositors must be put at risk of loss. Otherwise, market participants will have no incentive to force a failing institution into insolvency proceedings. The distinction between the insured and uninsured depositor must be restored. As Todd (1988) notes, deposit insurance was never intended to prevent all bank failures, only to provide for the prompt resolution of such failures.

Boyd and Rolnick (1988) have forwarded a plan to administer federal deposit insurance more like private insurance arrangements by instituting a system of coinsurance. Under this plan, deposits would be fully insured up to some amount sufficient to protect small, unsophisticated depositors. Large depositors would be subject to some risk of loss, receiving perhaps 90 or 95 cents for every dollar on deposit in the event of a bank failure. The advantage of this plan is that it would place known limits on the maximum extent of losses borne by depositors, while still giving large, sophisticated depositors the incentive to monitor their banks.

In the event of a bank failure, depositors could be given prompt access to most of their funds through a procedure similar to the modified payout procedure used by the FDIC before the failure of Continental Illinois National Bank (Benston, et al. 1986, ch. 4). In a modified payout, uninsured depositors were given immediate access to most of their funds

based on preliminary estimates of expected losses resulting from the liquidation of the failed bank. But whereas a modified payout involved liquidation of the affected institution, regulators could place the failed institution in a conservatorship and continue to operate it until it could be reorganized and returned to the private sector. Kaufman (1989) argues that insured depositors would have no incentive to withdraw their funds, and uninsured depositors would have no incentive to run on the financially troubled institution after it had been "failed" because they could be assured of no further losses.

Bank failures could be administered under a system of judicial oversight with such a system. The deposit insurer would represent one of the claimants against the firm. In cases where retaining present management is not deemed desirable, a conservator could be appointed to run the institution. Under such judicial proceedings, the deposit insurer would be limited to paying only insured depositors.

Other Alternatives

Simply placing bank failure resolution under a system of enhanced judicial oversight is unlikely to provide a panacea for all the problems currently facing the banking and thrift industries. But it would bring about an improvement in bank failure resolution methods, and would be consistent with other reforms now under debate. Two sets of reforms are noted briefly below.

100 percent reserve banking Some analysts and policymakers have argued that imposing market discipline on depositors is not practical because it would disrupt banking markets. One argument says that there are too many potential externalities involved with the operation of the payments system to risk letting a large depository institution fail. If safety and soundness is truly an overriding policy goal, then that goal can be achieved by requiring banks to hold only safe assets. This is the 100 percent reserve banking proposal, advocated by Mints, and later, Friedman, and most recently resurrected by Kareken (1985), and, in a slightly different form, by Litan (1986). Such a system would truly be safe because it would remove all private credit risk from the payments system, substituting instead the credit of the government, the ultimate guarantor of the safety of the system. Kareken (1985), Gorton and Pennachi (1989), and Jacklin (1989) postulate that this type of banking, which amounts to a money market mutual fund in short-term safe securities,

would be a natural product of free-market competition under current technology and modern financial market arrangements.

With the institution of "safe banks," lending activities would be conducted by uninsured affiliates. Such uninsured affiliates would still face a risk of insolvency. The proposed insolvency resolution procedures outlined above could be adopted to deal with failing lending affiliates.

An enhanced role for market forces As experience with the nineteenth century clearinghouse system shows, banks have a natural advantage in monitoring the creditworthiness of other banks. If given the proper incentives, private monitoring by banking firms could substantially augment government supervisory efforts. Banks would then be expected to police themselves as they did prior to the advent of deposit insurance.

Certain kinds of deregulation could actually enhance the safety and soundness of the banking system and lessen the danger of bank runs. As Calomiris (1989) points out, nationwide branching would probably go a long way toward providing additional safety and soundness. Canadian history is instructive in this regard, since Canada's nationwide branching system proved immune to bank runs during the Great Depression. Haubrich (1988) notes that there were no bank failures in Canada during the 1930s, even though their depression was as severe as that of the United States. In the event of deregulation, normal application of antitrust laws could ensure that competition in banking markets is preserved. Monetary policy could provide banks with liquidity in the event of a financial panic leading to an aggregate change in desired holdings of currency.

IV. CONCLUSION

This paper has provided a detailed analysis of the savings and loan crisis. To understand the events and the needed reforms, we have drawn heavily on the operation of private market relationships. Like private bondholders, the deposit insurance agencies bear the risk associated with bank failures and, therefore, have an incentive to promptly close or reorganize failing banks or savings and loans. But as recent events have clearly demonstrated, the deposit insurance funds themselves bear some risk of insolvency. As long as no formal mechanism for dealing with the insolvency of a deposit insurance fund exists, there is some chance that the crisis that beset the savings and loan industry could be repeated.

The history of the crisis suggests that simply giving regulators more discretionary authority will not be sufficient to guarantee against future insolvencies of one of the deposit insurance funds. The Bank Board and the FSLIC had more discretionary power than the FDIC, yet thrift industry regulators were not able to prevent the insolvency of the FSLIC.

These considerations, as well as the lessons learned from looking at the operation of the early clearinghouses, point to a number of key ingredients that must be present in any successful publicly administered deposit insurance scheme. The clearinghouse system was successful in maintaining safety and soundness among banks because the members of the system had the incentive to enforce minimum net worth standards. Through the threat of expulsion, the clearinghouses could discipline members that failed to meet the conditions of membership.

Of course, administrators of the deposit insurance funds also have such power in principle, but do not always have the incentive to exercise it. As Milgrom and Roberts (1988) point out:

Even if the executive authority is unusually competent, public spirited, and immune to bribes . . . it may still be desirable to limit its discretion, for two reasons. First, in order to provide correct incentives to others in the organization, the authority must be able to make commitments to act against its own interests in the future, and these commitments are not credible unless there are some effective limits on the centre's powers. . . . The second reason to limit the discretion of an honest, competent decision-maker is to discourage rent-seeking behavior by others who are affected by the centre's decision. . . . the mere willingness of the centre to consider seriously a decision with large redistributive consequences will cause other economic agents to waste significant resources in attempts to influence or block it or to delay its implementation. In public decision-making, for example, enormous resources are spent in proposing legislation or regulations and in advocating or opposing these proposals, as well as in filing and maneuvering for advantage in lawsuits.

Deposit insurance as it is presently administered removes all elements of market discipline from banking markets, making it a political rather than an economic decision to let an institution fail. With the potential transfer of such large amounts of resources at stake, some form of breakdown in regulatory discipline should not be surprising.

In the case of the FSLIC, the agency was forced to exercise regulatory forbearance because it lacked the resources it would have needed to close insolvent institutions. Acknowledging the fund's insolvency and forcing insured depositors to bear a part

of the cost was never regarded as an acceptable solution to dealing with the crisis. But lawmakers, while not wishing to impose losses on insured depositors, proved reluctant to appropriate the funding needed to deal with the problem. The strategy chosen was one of tolerating greater risk-taking on the part of insured savings and loans, in the hope that the need for government funding could be obviated.

While recently enacted reforms place limits on the ability of failing thrifts to take on excessive risks, they do not change the incentives facing market participants and regulatory agencies, and cannot guarantee that one of the deposit insurance funds will not become insolvent in the future. Therefore, the reforms enacted to date cannot ensure that failing institutions will always be dealt with promptly in the future.

Deposit insurance reform should include legislative guidelines specifying how bank and thrift failures are resolved and how the insolvency of one of the deposit insurance funds is to be resolved. A central conclusion of this paper is that such legislative guidelines could be enforced through a greater role for judicial oversight. There may be good reasons for exempting banks and thrifts from the same bankruptcy laws applied to unregulated firms, but increased market discipline and enhanced judicial oversight of bank failure resolution proceedings could play a constructive role in deposit insurance reform.

References

- Alchian, A.A. "Corporate Management and Property Rights." In Henry G. Manne, ed., *Economic Policy and the Regulation of Securities*. Washington, DC: American Enterprise Institute, 1968.
- American Banker*. "Bank Board Seeks Authority to Boost its FSLIC Fund." October 17, 1985.
- . "FSLIC Revives Income-Capital Certificates Program." December 26, 1985.
- . "Dallas Home Loan Bank Seeks \$1 Billion Payback from FSLIC." March 16, 1987.
- . "US Regulators Seeking Funds for Texas S&Ls: Ask Help from Brokers in Gathering Deposits." June 11, 1987.
- . "FSLIC May Need Taxpayer Bailout, Gould Says: Treasury Official Admits Recapitalization Might Not Keep Insurer Afloat for Long." November 18, 1987.
- . "Dallas Bank Warned on Uncollateralized Advances: Accounting Firm Opinion Discourages FSLIC-Guaranteed Loans to Ailing Thrifts." August 29, 1988.

- _____. "FSLIC Near Ceiling on Notes: GAO Aide." September 19, 1989.
- American Institute of Certified Public Accountants. Accounting Standards Executive Committee and Savings and Loan Associations Committee. *Practice Bulletin 3: Prepayments Into the Secondary Reserve of the FSLIC and Contingencies Related to Other Obligations of the FSLIC*. New York: November 1987.
- Barth, James R., Philip F. Bartholomew, and Michael G. Bradley. "The Determinants of Thrift Institution Resolution Costs." Office of Thrift Supervision Research Paper No. 89-03, Department of the Treasury, November 1989b.
- _____. "Reforming Federal Deposit Insurance: What Can Be Learned From Private Insurance Practices?" Federal Home Loan Bank Board Research Paper No. 161, June 1989a.
- _____. "Thrift Deregulation and Federal Deposit Insurance." Federal Home Loan Bank Board Research Paper No. 150, November 1988.
- Barth, James R., Philip F. Bartholomew, and Carol G. Labich. "Moral Hazard and the Thrift Crisis: An Analysis of 1988 Resolutions." Federal Home Loan Bank Board Research Paper No. 160, May 1989.
- Barth, James R., Dan Brumbaugh, Jr., Daniel Sauerhaft, and George H.K. Wang. "Insolvency and Risk-Taking in the Thrift Industry: Implications for the Future." *Contemporary Policy Issues* (Fall 1985): 1-32.
- Barth, James R., John J. Feid, Gabriel Riedel, and M. Hampton Tunis. "Alternative Federal Deposit Insurance Regimes." Federal Home Loan Bank Board, January 1989.
- Barth, James R., and Philip J. Wiest. "Consolidation and Restructuring of the U.S. Thrift Industry Under the Financial Institutions Reform, Recovery, and Enforcement Act." Office of Thrift Supervision, October 1989.
- Benston, George J., Robert A. Eisenbeis, Paul M. Horvitz, Edward J. Kane, and George G. Kaufman. *Perspectives on Safe and Sound Banking*. Cambridge, Massachusetts: The MIT Press, 1986.
- Black, Fischer, Merton H. Miller, and Richard A. Posner. "An Approach to the Regulation of Bank Holding Companies." *Journal of Business* 51 (July 1978): 379-412.
- BNA's Banking Report*. "Dallas FHL Bank Releases 1987 Annual Report That Lacks Auditor's Opinion." 50 (April 18, 1988): 653.
- _____. "1987 FSLIC Audit Paints Bleak Picture, Fund's Insolvency Level Nearly Doubles." 50 (April 25, 1988): 693-4.
- _____. "Rep. LaFalce Pans Senate Backing of FSLIC Notes with Full Faith and Credit Pledge." 51 (August 15, 1988): 264-5.
- _____. "GAO Calls for Full Faith and Credit Backing of All FSLIC Obligations." 51 (September 19, 1988): 473-4.
- _____. "Bank Board Chairman Wall to Seek Full Faith and Credit Legislation." 51 (November 11, 1988[1]): 827.
- _____. "FSLIC Notes Are Backed by Full Faith and Credit of the U.S., GAO Concludes." 51 (November 11, 1988[2]): 786-7.
- _____. "White Says FSLIC Should Issue Promissory Notes As Needed to Stop S&L Hemorrhaging." 51 (November 11, 1988[3]): 787-8.
- _____. "GAO Says FSLIC Needs \$85 Billion More than FHLBB Estimates Over Next Ten Years." 51 (December 19, 1988): 1013.
- _____. "White House Fact Sheet on President Bush's Proposal for Savings and Loan Industry." Reprinted in 52 (February 13, 1989): 406-7.
- Boyd, John H., and Arthur J. Rolnick. "A Case for Reforming Federal Deposit Insurance." Federal Reserve Bank of Minneapolis 1988 *Annual Report*: 3-16.
- Brewer, Elijah III. "Full-Blown Crisis, Half-Measure Cure." Federal Reserve Bank of Chicago *Economic Perspectives* (November/December 1989): 2-17.
- Brumbaugh, R. Dan, Jr. *Thriffs Under Siege: Restoring Order to American Banking*. Cambridge, Massachusetts: Ballinger Publishing Company, 1988.
- Brumbaugh, R. Dan, Jr., and Andrew S. Carron. "The Future of Thrifts in the Mortgage Market." Paper presented at the 1989 summer meeting of the Western Economic Association.
- Calomiris, Charles W. "Deposit Insurance: Lessons from the Record." Federal Reserve Bank of Chicago *Economic Perspectives* 13 (May/June 1989): 10-30.
- _____. "Do 'Vulnerable' Economies Need Deposit Insurance?: Lessons from the U.S. Agricultural Boom and Bust of the 1920s." Processed, October 1989.
- Calomiris, Charles W., and Larry Schweikart. "Crisis and Containment in the Panic of 1857." Processed, 1989.
- Carosso, Vincent P. "The Wall Street Money Trust from Pujó through Medina." *Business History Review* 47 (Winter 1973): 421-37.
- Coase, R.H. "The Nature of the Firm." *Economica*, New Series, IV (1937): 331-51.
- Diamond, Douglas W., and Philip H. Dybvig. "Bank Runs, Deposit Insurance, and Liquidity." *Journal of Political Economy* 91 (June 1983): 401-19.
- Edwards, Franklin. "Can Regulatory Reform Prevent the Impending Disaster in Financial Markets?" Federal Reserve Bank of Kansas City *Economic Review* 73 (January 1988): 29-39.
- Fama, Eugene F. "Agency Problems and the Theory of the Firm." *The Journal of Political Economy* 88 (April 1980): 288-307.
- Fama, Eugene F., and Michael C. Jensen. "Separation of Ownership and Control." *The Journal of Law and Economics* 26 (June 1983): 301-26.
- _____. "Agency Problems and Residual Claims." *The Journal of Law and Economics* 26 (June 1983): 327-49.

- Flannery, Mark J. "An Economic Evaluation of Bank Securities Activities Before 1933." In Ingo Walter, ed., *Deregulating Wall Street: Commercial Bank Penetration of the Corporate Securities Market*. New York: John Wiley and Sons, 1985, pp. 67-87.
- Friedman, Milton. *A Program for Monetary Stability*. Bronx, NY: Fordham University Press, 1959.
- GAO, see U.S. General Accounting Office.
- Goodfriend, Marvin S. "Money, Credit, Banking, and Payment System Policy." In David B. Humphrey, ed., *The U.S. Payment System: Efficiency, Risk and the Role of the Federal Reserve*. Boston: Kluwer Academic Publishers, 1990.
- Goodfriend, Marvin S., and Robert G. King. "Financial Deregulation, Monetary Policy, and Central Banking." Federal Reserve Bank of Richmond *Economic Review* 74 (May/June 1988): 3-22.
- Gorton, Gary. "Public Policy and the Evolution of Banking Markets." The Wharton School, June 1989.
- Gorton, Gary, and Joseph Haubrich. "Bank Regulation, Credit Markets, and the Control of Capital." *Carnegie-Rochester Series on Public Policy* 26 (1987): 289-333.
- Gorton, Gary, and Donald J. Mullineaux. "The Joint Production of Confidence: Endogenous Regulation and Nineteenth Century Commercial-Bank Clearinghouses." *Journal of Money, Credit and Banking* 19 (November 1987): 457-68.
- Gorton, Gary, and George Pennacchi. "Transaction Contracts." The Wharton School, September 1988.
- Haubrich, Joseph. "Nonmonetary Effects of Financial Crisis: Lessons from the Great Depression in Canada." Processed, June 1989.
- Hirschhorn, Eric. "Depositor Risk Perceptions and the Insolvency of the FSLIC." Office of Thrift Supervision, Department of the Treasury, December 1989a.
- . "The Determinants of Interest Rates on Certificates of Deposit." Office of Thrift Supervision, Department of the Treasury, December 1989b.
- . "Interest Rates on Thrift Certificates of Deposit." Office of Thrift Supervision, Department of the Treasury, February 1990.
- Hirschhorn, Eric, and David Zervos. "Policies to Change the Priority of Claimants: The Case of Depositor Preference Laws." *Journal of Financial Services Research*, forthcoming, 1990.
- Huertas, Thomas F. "An Economic Brief Against Glass-Steagall." *Journal of Bank Research* 15 (Autumn 1984): 148-59.
- Jacklin, Charles J. "Demand Equity and Deposit Insurance." Research Paper No. 1062, Graduate School of Business, Stanford University, September 1989.
- . "Demand Deposits, Trading Restrictions, and Risk Sharing." In Edward C. Prescott and Neil Wallace, eds., *Contractual Arrangements for Intertemporal Trade*. Minneapolis: University of Minnesota, 1989.
- Jensen, Michael C., and William Meckling. "Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure." *The Journal of Financial Economics* 3 (October 1976): 305-60.
- Kane, Edward J. "How Incentive-Incompatible Deposit Insurance Funds Fail." NBER Working Paper No. 2836, February 1989a.
- . *The S&L Insurance Mess*. Washington, D.C.: The Urban Institute Press, 1989b.
- Kareken, John H. "Ensuring Financial Stability." In *The Search for Financial Stability: The Past Fifty Years*. Federal Reserve Bank of San Francisco, 1985, pp. 53-77.
- . "Federal Bank Regulatory Policy: A Description and Some Observations." *Journal of Business* 59 (January 1986): 3-47.
- Kaufman, George G. "Are Some Banks Too Large to Fail?" Federal Reserve Bank of Chicago Working Paper WP-89-14, August 1989.
- Kuprianov, Anatoli. "The Monetary Control Act and the Role of the Federal Reserve in the Interbank Clearing Market." Federal Reserve Bank of Richmond *Economic Review* 71 (July/August 1985): 23-35.
- Litan, Robert E. "Taking the Dangers Out of Bank Deregulation." *The Brookings Review* (Fall 1986): 3-12.
- Milgrom, Paul, and John Roberts. "Economic Theories of the Firm: Past, Present, and Future." *Canadian Journal of Economics* 21 (August 1988): 444-58.
- Posner, Richard A. "Theories of Economic Regulation." *The Bell Journal of Economics and Management Sciences* 5 (Autumn 1974): 335-58.
- . "Taxation by Regulation." *The Bell Journal of Economics and Management Science* 2 (Spring 1971): 22-50.
- Shughart, William F. II. "A Public Choice Perspective of the 1933 Banking Act." In Catherine England and Thomas Huertas, eds., *The Financial Services Revolution: Policy Directions for the Future*. Boston, MA: Kluwer Academic Publishers, 1988.
- Shull, Bernard. "The Separation of Banking and Commerce: Origin, Development, and Implications for Antitrust." *The Antitrust Bulletin* (Spring 1983): 255-79.
- Stigler, George. "The Theory of Economic Regulation." *The Bell Journal of Economics and Management Science* 2 (Spring 1971): 3-21.
- Stiglitz, Joseph E. "Credit Markets and the Control of Capital." *Journal of Money, Credit and Banking* 17 (May 1985): 133-52.
- Timberlake, Richard H., Jr. "The Central Bank Role of Clearinghouse Associations." *Journal of Money, Credit and Banking* 16 (February 1984): 1-15.
- Todd, Walker F. "Aggressive Uses of Chapter 11 of the Federal Bankruptcy Code." Federal Reserve Bank of Cleveland *Economic Review* (Quarter 3 1986): 20-26.
- . "Lessons of the Past and Prospects for the Future in Lender of Last Resort Theory." Federal Reserve Bank of Cleveland Working Paper No. 8805, August 1988.

- Treister, George M., J. Ronald Trost, Leon S. Forman, Kenneth N. Klee, Richard B. Levin. *Fundamentals of Bankruptcy Law*. Philadelphia, PA: American Law Institute, 1988.
- U.S. Congress. House. Committee on Banking, Finance and Urban Affairs. Statement of Frederick D. Wolf, Director, Accounting and Financial Management Division, GAO, in *Federal Savings and Loan Insurance Corporation Recapitalization Act of 1987. Hearings Before the Subcommittee on Financial Institutions Supervision, Regulation, and Insurance*. 100th Cong., 1st sess., March 3 and 4, 1987.
- U.S. Congress. Senate. Statement of Frederick D. Wolf, Director, Accounting and Financial Management Division, GAO, in *Oversight on the Condition of the Financial Services Industry. Hearings Before the Committee on Banking, Housing, and Urban Affairs*. 100th Cong., 2nd sess., May 18, 25, and 26, 1988.
- U.S. General Accounting Office. *Net Worth Certificate Assistance Programs: Their Design, Major Differences, and Early Implementation*. Washington: November 5, 1984.
- . *Thrift Industry Restructuring and the Net Worth Certificate Program*. Washington: September 24, 1985.
- . *Thrift Industry Problems: Potential Demands on the FSLIC Fund*. Washington: February 1986.
- . *Thrift Industry: The Treasury/Federal Home Loan Bank Board Plan for FSLIC Recapitalization*. Washington: March 1987.
- . *Thrift Industry: Forbearance for Troubled Institutions, 1982-1986*. Washington: May 1987.
- . *Thrift Industry: The Management Consignment Program*. Washington: September 1987.
- Wall Street Journal*. "Southwest Thrift Regulators Plan to Put Funds from Strong S&Ls into Weak Ones." March 2, 1987.
- . "FSLIC Technically Bankrupt at the End of 86, Preliminary Audit by GAO Finds." March 4, 1987.
- Washington Financial Reports*. "GAO Says Insolvent S&Ls Beyond Hope, Dismisses Regulatory Moves." 46 (March 10, 1986): 373-4.
- . "Treasury Circulates a Memo Claiming S&L Industry is Subverting FSLIC Plan." 47 (July 28, 1986): 116-8.
- Zisman, Barry S., and William O. Churchill. "Federal Assistance to Failing and Failed Thrifts." *Banking Expansion Reporter* 8, no. 16 (August 21, 1989): 1, 9-14.