Lessons from the U.S. Experience with Deposit Insurance
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The literature on deposit insurance is voluminous. Annotated bibliographies prepared by the Federal Deposit Insurance Corporation (FDIC) covering only publications appearing between 1989 and 2003 run to almost 350 pages! As both the first country to adopt national deposit insurance, and one with a history of many non-national deposit insurance schemes, much of this voluminous literature focuses on the United States. Not surprisingly, this research usually analyzes a single episode in the U.S. experience, for example the state insurance plans of the early 20th century or the savings and loan (S&L) crisis of the 1980s. Few studies have covered the entire U.S. history, and those that have are largely descriptive exercises that do not draw out the lessons taught by that history.¹

This chapter offers a succinct summary of the U.S. experience and uses that summary to highlight the rationale for, and performance of, the varied deposit insurance plans put in place in the United States over the past century. Throughout, we emphasize three main points. First, the inherent fragility of a fractional reserve depository institution is magnified enormously by restrictions on branching and lines of service that impede the diversification of an institution’s portfolio. This amplified fragility greatly increases the likelihood of an individual institution failing and thereby serves to also increase the likelihood of a panic. Second, the latest historical evidence accumulated from painstaking examinations of bank failures and panics suggests that contagion from unhealthy to healthy banks usually was not present during bank panics and failures. Rather, this evidence suggests that panics were usually associated with depositors moving from unhealthy banks (and banks associated with unhealthy banks) to healthy banks, what we term a separating equilibrium. Indiscriminate runs on all banks, what we term a pooling equilibrium, were relatively rare and in one instance triggered by official recourse to statewide bank holidays. This distinction between a separation and a pooling equilibrium provides a new prism through which to view the function of deposit insurance. If failures and panics are best viewed as separation equilibria, then using deposit insurance to protect the medium of exchange may preserve and encourage the expansion of unhealthy banks, potentially generating undesirable credit expansions that in the end prove quite costly. Third, and as is well known, attempts to use deposit insurance to limit self-fulfilling bank failures and associated contagion puts depository institutions in a position of severe moral hazard that can only be mitigated by careful design of the deposit insurance plan and watchful supervision and regulation once the plan is in place.

After discussing the rationales for deposit insurance and the U.S. history of banking panics and crises, the bulk of the chapter examines the post Civil War history of deposit insurance in the United States. We conclude by using our history to shed some light on current reforms of deposit insurance. At the outset, we acknowledge our heavy debt to earlier research – we aim to synthesize the literature into a readable narrative that offers a useful introduction to, and draws lessons from, the history of deposit insurance in the United States.

I. What Makes Financial Intermediaries Prone to Panics and Failures?

¹ See FDIC (1998).
Deposit insurance is almost always justified as both a way to safeguard the medium of exchange by containing banking panics and crises as well as a means to protect small, financially naïve depositors. Therefore, any discussion of deposit insurance requires an understanding of what makes financial intermediaries, in particular commercial banks and S&Ls, prone to panics and failures.

Liabilities of commercial banks are payable on demand according to a first-come first served rule whereby the first in line at a bank is the first to withdraw. At the same time, commercial bank assets do not lend themselves to ready liquidation because banks develop long-standing and close ties to their loan customers making it difficult for third parties to value a bank’s loan portfolio. In this environment, all depositors have an incentive to immediately withdraw funds from a bank under the suspicion of an impairment of the bank’s assets.

Unlike banks, the deposit liabilities of S&Ls, in the main, are not payable upon demand, leaving them less vulnerable to panics. However, waves of failures might still be possible as a result of the maturity mismatch between the S&L’s assets and liabilities. By funding longer term mortgage lending with shorter maturity deposits, S&Ls are exposed to considerable interest rate risk. A sharp rise in interest rates will lower the value of the S&L’s assets more than its liabilities, leading to insolvency. A large enough increase in interest rates will generate a wave of failures.

This inherent fragility of banks and S&Ls can be offset or compounded by the institutional and regulatory environment in which they operate. Cooperation among banks during a panic can allay depositor fears and prevent a panic or stop a panic that has already begun. This cooperation can be informal and arise as the result of a panic or be formalized, for example, through a clearinghouse arrangement. In normal times, the clearinghouse nets inter-bank claims, while during the crisis the clearinghouse can coordinate bank action by issuing scrip (a clearinghouse loan certificate) that is the joint liability of all banks. Individual bank members of the clearinghouse would then pay off withdrawing depositors with the scrip.

Other institutional arrangements can compound the fragility of financial intermediaries. Populist concerns over the concentration of power in “money trusts” led to widespread prohibitions on branching by financial intermediaries in the United States. The resulting proliferation of single or unit intermediaries meant that bank portfolios were heavily concentrated in relatively small geographic areas. This lack of diversification left intermediaries open to substantial risk, particularly in rural areas where lending was concentrated on one or just a few crops. Inadequate rainfall in a single county could be enough of a shock to bring down the unit banks in that county.

Restrictions on the assets that financial intermediaries can hold as well as restrictions on their product lines can also heighten fragility. Requirements that S&Ls engage only in mortgage lending left them exposed in the event of a shock to the housing sector. The post-1933 separation of commercial and investment banking left bank assets less diversified than would have otherwise been the case.

Finding ways to minimize the frequency of panics and failures requires a theory that explains the behavior underlying these events. Calomiris and Gorton (2000) argue that there are two main models of bank panics, the random withdrawal theory and the asymmetric information theory. The random withdrawal theory builds on the work of Diamond and Dybvig (1983) and emphasizes the first-in-line first-to-withdraw constraint. If depositors believe that other depositors are convinced that bank assets have fallen in value, then depositors will withdraw their

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2 See Golembe (1960). Like many others, Golembe (1960) downplays the motive of protecting small depositors, especially given the generous coverage limits of most U.S. plans.

3 Discussions of both the theory and evidence on clearinghouses can be found in Gorton (1985), Gorton and Mullineaux (1987), Kroszner (2000) and Moen and Tallman (2000).
funds to avoid the losses associated with being at the end of the withdrawal line. Random events (perhaps even a sunspot) cause depositors to form expectations of what turns out to be a self-fulfilling panic. Refinements to the random withdrawal model add detail by incorporating the structure of the U.S. banking system. Rural banks that are geographically isolated hold reserves in reserve-city banks that themselves hold reserves in the central reserve city (New York). This pyramiding of reserves leaves the central reserve city vulnerable to a panic. A shock in the countryside leads to a heightened demand for reserves that eventually causes a panicked scramble for reserves in New York. The shock to the countryside might involve a seasonal demand for cash resulting from the harvest cycle.

In the asymmetric information model, depositors must expend resources to monitor their bank, a job that might be made more difficult if banks are small and geographically separated. If depositors are heterogeneous, the first-in-line first-to-withdraw constraint arises as a way to reward those depositors who choose to pay the monitoring costs, since the informed depositors will never be at the end of the withdrawal line. Uninformed depositors do not know whether their bank (or any other bank) is solvent and choose to withdraw from all banks, generating the panic. Panics arise when information about deterioration in bank assets arrives, perhaps the onset of a recession or news of weakness in a sector that is dependent on bank financing. Eventually, the panic forces banks to suspend the conversion of deposits to cash. During the suspension, banks collectively sort out the solvent from the insolvent. Thus, the panic is an optimal response to the information asymmetry.

II. The Rationale for Deposit Insurance

In both models of banking panics, the panics and closures are costly, even though the contract between depositors and the bank that generates the panic may be optimal. These costs give rise to consideration of arrangements that might prevent panics without imposing additional costs on the financial system. In either model, a guaranty of deposits can remove the incentive for depositors to indiscriminately withdraw funds from banks and thereby short circuit the panic. The guaranty can come from a third party such as the government or privately, perhaps through bank cooperation.

However, the benefits of deposit insurance may not outweigh its costs, especially if panics are actually separating equilibria. Although both the random withdrawal and asymmetric information models can provide a theoretical justification for deposit insurance, historical episodes have most often been used to argue in favor of deposit insurance. Thus, advocates of deposit insurance invariably pointed to the relatively large number of panics in the United States when making their case.

As Figures 1 and 2 make clear, financial services has been a relatively tumultuous industry in the United States over the past 110 or so years. Taking an even longer view, historians count on the order of 16 banking panics in the United States in the 160 years prior to 1934, the year in which national deposit insurance took effect. Advocates of deposit insurance argue that these panics and waves of failures disrupt economic activity, often regionally, and on occasion nationally, and impose a cost to society of foregone economic activity and business formation and expansion. These costs can be large, both in the short run as transactions drop with a loss of confidence in the medium of exchange, and in the long run as financial intermediation is key to economic growth.

4 Stopping panics requires more than an active lender of last resort, a point emphasized by Calomiris (1989). The lender of last resort can safeguard the medium of exchange but does not change depositor incentives with regard to individual banks under the first-in-line first-to-withdraw constraint.


When assessing the validity of these historical arguments for deposit insurance, it is important to keep in mind our nomenclature of separation and pooling equilibria. As mentioned earlier, a separation equilibrium involves depositors shifting funds from insolvent or “bad” banks to solvent or “good” banks. A pooling equilibrium involves mass, indiscriminate withdrawals from all banks. Under this classification scheme, deposit insurance serves a useful function only by preventing a pooling equilibrium in which panicked depositors engage in indiscriminate system-wide withdrawals. However, if bank panics are really separation equilibria that serve to discriminate between healthy and ailing banks, then deposit insurance is not necessary and will likely be counter-productive.7 Moreover, as we shall see, it is possible for the actions taken by regulators and political officials to move the economy from a separation equilibrium to a pooling equilibrium. Misinterpreting the causal relationship between the official action and the pooling equilibrium inadvertently boosts the case for deposit insurance.

An examination of some pre-1934 banking panics illustrates this distinction between separation and pooling. As an example, consider the Panic of 1907, in which runs began in mid-October against a number of national banks in New York City controlled by individuals attempting to manipulate the copper market.8 The New York Clearing House Association reorganized these banks and initially the runs did not spread to other banks. During the week of October 21, however, runs began to develop against major trust companies in New York City, particularly Knickerbocker Trust. These trusts were not clearinghouse members. During the last week of October 1907, a number of governors proclaimed legal holidays in their states (Andrew, 1908). {Randy, I may be on shaky ground here, as I re-arranged your sentences. However, it may be that the holidays led to the spread of the panic, a la 1933, what do you think?} The demand for cash began to rise rapidly not only in New York but throughout the country. Banks then began to limit cash withdrawals, and the clearinghouses began to authorize the issuance of “clearinghouse certificates” that appear to have increased the money supply by roughly five percent (see Kroszner (2000) for details.)

Moen and Tallman (1992, page 611) emphasize that the panic was largely directed at trust companies, “Our research indicates that in 1907 national banks were not stricken with widespread runs as in previous panics. Rather, the trust companies were the institution subject to severe depositor withdrawals.” According to Calomiris and Gorton (2000), only six of more than 6000 national banks failed during the panic. Moen and Tallman (1992) document that while loans at New York City trusts fell by roughly $250 million, they actually increased at national banks in the city by $60 million.9 This evidence is consistent with a separation equilibrium, in which depositors were shifting away from trusts to cash and less risky national banks. Moen and Tallman (1992, page 628) conclude “The risk of trust portfolios, the lack of direct access to the clearinghouse, and lower reserves against deposits must be the main reasons why the Panic of 1907 was concentrated in the trust companies.”

Recent research on panics during the Great Depression also provides examples of separation equilibria. Although banking was declining throughout the 1920s, the panics during the early 1930s were almost always associated with regionally concentrated withdrawals from particular types of banks or banks known to be insolvent. Wicker (1996) dates four major panics between 1930 and 1933. The first panic lasted from November 1930 until January 1931 with withdrawals concentrated in the South among banks associated with the investment banking firm of Caldwell and Company in Nashville Tennessee. Wicker, like Temin (1990) and White (1984) and unlike Friedman and Schwartz (1962), does not place central importance on the December 1930 failure of the Bank of United States. “There was no panic in New York City if by that term

7 See Dehejia and Lleras-Muney (2006) for empirical evidence on the potential negative relationship between deposit insurance and growth, a point we return to later in the chapter.
8 See Friedman and Schwartz (1962) for a fuller discussion of the panic.
9 Although figures are not provided, their charts show a similar movement for deposits.
we mean the spread of uncertainty indiscriminately engulfing sound and unsound banks alike.” (Wicker (1996) page 37.) In short, the first panic of the Depression looks very much like a separation equilibrium in which depositors attempted to withdraw from struggling banks. “Managerial ineptness encompassing both poor loans and investments in the twenties and questionable legal practices deserve a fair share of the blame for the demise of both Caldwell and Company and the Bank of United States.” (Wicker (1996) page 51.)

The second panic of the Depression lasted from April to August 1931 and was concentrated in Chicago and Toledo.\textsuperscript{10} Wicker ((1996) page 62) states “We conclude, unlike Friedman and Schwartz, that the second crisis was region specific without perceptible nationwide effects.” The Chicago failures were heavily concentrated among newly created, small banks in the outskirts of Chicago that were chartered to provide funding for real estate developers. Here again, separation appears to be the central characteristic of the panic.

With regard to the third panic, September to October 1931, the case for a separation equilibrium is even stronger, with failures heavily concentrated among savings banks and trust companies. Wicker concludes:

\begin{quote}
Our analysis would tend to suggest that the waves of bank suspensions in September – October do not appear to have conformed fully to the conventional view of a banking panic; that is, there was no indiscriminate run on banks by depositors whose confidence in banking institutions in a given area had been shattered. Bank runs, especially among urban banks, appear to have been directed against particular banks that were known to be weak. [Wicker (1996), page 99]
\end{quote}

Once again, there is little evidence of a pooling equilibrium with depositors blindly withdrawing from all banks.

The fourth panic of February and March 1933 does fit the characteristics of a pooling equilibrium, but only because of the precipitating action of state bank officials declaring a rolling wave of bank holidays. The panic had its origins in Detroit with the impending collapse of the Guardian Group of banks resulting from their large exposure to real estate. Following a breakdown in negotiations between the Reconstruction Finance Corporation and the major stockholders in the Guardian Group, the Ford family interests, the Governor of Michigan declared a bank holiday on February 14, 1933 at the request of the Detroit Clearing House Association. The holiday was declared despite the fact that there were no runs on any Detroit banks.

According to Wicker

\begin{quote}
The declaration of the Michigan holiday spread fear and uncertainty quickly to the contiguous states of Ohio, Indiana, and Illinois who promptly placed restrictions on deposit withdrawals. [Wicker (1996), page 121]
\end{quote}

Thus, a series of governmental actions created a pooling equilibrium.

\begin{quote}
The panic that was sweeping the country during the last week of February and the first three days of March was a panic generated by officials in the several states who either declared bank holidays or limited deposit withdrawals. It was not depositor runs on the banks in the classic sense that prompted such drastic measures. Rather it was an unwillingness on the part of state officials to stand idly by while depositors attempted to transfer funds to surrounding states where deposit restrictions were not in effect. [Wicker (1996), pp. 127-128]
\end{quote}

What was likely to be another separation equilibrium that would involve the failure of some Detroit banks was transformed into a nationwide panic that ended with President Roosevelt’s declaration of a national holiday on March 6, 1933. The national holiday only affirmed what had

\textsuperscript{10} Wicker’s dating differs slightly from Friedman and Schwartz who have the panic starting in March.
already been brought about by holidays or deposit restrictions declared in each of the then 48 states.

This view that bank panics during the Great Depression are best thought of as separation phenomenon that do not jeopardize the medium of exchange is also consistent with the work of Calomiris and Mason (1997 and 2003). In their study of the Chicago mini-panic of June 1932, they state:

We conclude that failures during the panic reflected the relative weakness of failing banks in the face of a common asset value shock rather than contagion…While asymmetric information between depositors and banks precipitated a general run on banks, our evidence suggests that this asymmetric-information problem did not produce failures of solvent banks. [Calomiris and Mason (1997) page 881]

In brief, a panic generated by asymmetric information does necessarily result in a pooling equilibrium that requires a governmental solution. As Calomiris and Mason note

Deposit insurance and government assistance to banks since the Depression have been motivated in part by the perception that bank failures during the Depression were a consequence of contagion, rather than the insolvency of individual banks. If private interbank cooperation, buttressed by liquidity assistance from the monetary authority (like the assistance provided by the RFC to the Chicago clearinghouse), are adequate to preserve systemic stability, then a far less ambitious federal safety net might be desirable. [Calomiris and Mason (1997) page 881]

Calomiris and Mason (2003) use detailed call report data on slightly more than 10,000 Federal Reserve member banks from 1929 to 1935 to analyze bank failures during the Great Depression. Again, their analysis is consistent with a separation equilibrium view of bank failures, with the exception of the 1933 panic.

We find no evidence that bank failures were induced by a national banking panic in the first three episodes Friedman and Schwartz identify as panics (late 1930, mid-1931, and late 1931). We do find, however, that in January and February 1933 there is a significant increase in bank failure hazard that is not explained by our model of fundamentals…Our findings suggest that disaggregated analysis of bank failures and deposit shrinkage leads to a much smaller role for contagion in understanding bank distress during the Great Depression. [Calomiris and Mason (2003) pp. 1638-1639]

Given the forgoing discussion, the exceptional case of the 1933 panic comes as no surprise. Banks closed not from confused depositors blindly withdrawing funds but rather from depositors fearing that their state would be the next to declare a bank holiday.

In sum, the historical evidence suggests that during the early 1930s healthy banks were not failing in contagion-induced waves, calling into question the need for deposit insurance to calm panicky depositors in order to protect the medium of exchange. The fear of panic-induced contagion cannot by itself provide a complete rationale for deposit insurance.

The prevalence of unit banking in the United States provides an additional rationale for deposit insurance. Golembe (1960) emphasizes this view in his discussion of the forces leading to the adoption of deposit insurance. As Figure 2 makes clear, bank failures were commonplace in the United States, both in good times and bad. The desire by state legislatures, expressed via restrictions on branch banking, for an industry comprised of small, independent banks left a very fragile banking system. This regulatory approach predictably led to many bank failures brought about by an almost complete lack of diversification. Deposit insurance was seen as a way to reduce bank failures without having to sacrifice the “democratic” ideals of unit banking. On this point, Golembe (1960) provides many supporting citations, including Joshua Forman, the
architect of the earliest bank obligation insurance scheme, writing on the plan adopted by New York in 1829, “... is on the whole a more ample security to the public than that of a general bank with branches.” Representative Steagall, the main force behind the 1933 adoption of national deposit insurance is quoted as “This bill will preserve independent, dual banking in the United States....This is what this bill is intended to do.” (Golembe (1960) page 198.) Perhaps most telling, opponents of national deposit insurance clearly pointed out the link, as evidenced by Golembe’s quote from John W. Pole Comptroller of the Currency in 1932 “A general guaranty of bank deposits is the very antithesis of branch banking.” (Golembe (1960) page 197.)

Golembe’s evidence from the historical record is bolstered by the empirical work of White (1983) and Calomiris and White (1994). White shows that states with branch banking provisions were much less likely to adopt deposit insurance schemes. Calomiris and White find that Congressional representatives from unit banking states were more likely to put forward bills to establish a national deposit insurance scheme and that these representatives were also more likely to vote in favor of such schemes. They state, “Unit banking, small average bank size, and high rates of bank failure all were associated with support for legislation.” (Calomiris and White (1994) page 163.) Dehejia and Lleras-Muney (2006) also find that bank failures and a larger fraction of state banks help to explain the adoption of deposit insurance. However, they find that larger bank size increases the probability of the adoption of deposit insurance.

Of course, the use of deposit insurance to preserve the unit banking structure will not come without costs. Dehejia and Lleras-Muney (2006) provide empirical evidence on this issue using the experience of states from 1900 to 1940 to document a negative relationship between the adoption of deposit insurance and economic growth. Even after controlling for the possibility of reverse causality whereby bad growth outcomes lead to the adoption of deposit insurance, they find that both farm and manufacturing output were subsequently depressed in states that adopted deposit insurance, the result of “indiscriminate expansions of credit, such as the one that resulted from deposit insurance laws.” (Dehejia and Lleras-Muney (2006), page 20). The next section provides several anecdotal accounts that support their empirical finding.

III. A Selected Survey of the Post Civil War U.S. Experience with Deposit Insurance

Whether or not justified by theory or history, the pooling equilibrium view of bank failures and panics often has won the day in the United States. That is to say, there is a long U.S. history of deposit insurance schemes. Over that history, the moral hazard costs of deposit insurance have become clear while the benefits are harder to quantify, given that the counterfactual of the same institutions at the same time and place operating without deposit insurance is never observed.

The insurance of financial intermediary obligations (either deposits or notes) began in 1829 with the New York Safety Fund. In one form or another, five other states followed the lead of New York over the next 30 years. Some of the states guaranteed all bank debts while other plans were limited to bank notes (see Calomiris (1989) and FDIC (1953) for details). Regardless, circulating bank notes comprised the bulk of bank liabilities, so these pre-Civil War plans can largely be viewed as guaranteeing bank notes. All of these plans ended by 1866, largely due to both the free-banking movement that provided for an alternative guarantee of notes through the posting of securities with state officials and the establishment of a national banking system in 1865 that placed a 10 percent tax on the notes circulated by state banks.11

After the introduction of the national banking system, deposit banking grew rapidly and claims on deposits (checks) began to account for an increasing fraction of the money supply (FDIC (1956), Golembe (1960)). Within 20 years, plans for explicit deposit insurance began to

11 Notes of the national banks were secured by the posting of U.S. government bonds and backed by the credit of the federal government.
be put forward. The first bill for a national deposit insurance plan was introduced in Congress in 1886 and Oklahoma passed legislation for a deposit insurance plan on December 17, 1907, in the midst of the Panic of 1907 and only one month after Oklahoma was admitted to the Union. Shortly after Oklahoma’s program was created, Kansas, Nebraska, and Texas followed suit. By 1917, deposit insurance programs were also in place in Mississippi, South Dakota, North Dakota and Washington. Table 1 presents some details on the eight state plans.

IIIa. Early 20th Century State Plans

It is with these state plans that we begin our selected narrative of the U.S. experience with deposit insurance, focusing on the Oklahoma experience. Participation in the Oklahoma plan was compulsory for state banks and trust companies. Although given the right to participate by the Oklahoma legislation, nationally chartered banks in Oklahoma were prohibited from participating by a 1908 ruling of the Comptroller of the Currency on the basis of advice from the U.S. Attorney General. At first, the fund was to amount to only one percent of deposits; subsequent amendments increased the fund to five percent of deposits and then reduced it to two percent of deposits. The fund was administered by the State Banking Board, originally composed of the Governor, Lieutenant Governor, president of the Board of Agriculture, state treasurer, and state auditor. In 1913 the board membership was changed to the state bank commissioner, the assistant state bank commissioner, and three members selected by the Governor from a list prepared by the State Bankers’ Association. Depositors in the failed banks were to be paid immediately.

From the beginning, the Oklahoma plan was controversial. Analysts supported the separation equilibrium view of panics in wondering whether deposit insurance was even necessary, and raised questions regarding moral hazard and the appropriate size of the fund. Quoting from Professor W.C. Webster of the University of Nebraska, an early critic

The guaranty of deposits, by removing or weakening the motive for honesty and conservatism, tends to turn, by gradual, easy and almost unconscious stages, a great deal of potential dishonesty into a positive force capable of doing the utmost harm…..Experience shows that lack of confidence in banks is usually the result or culmination of a panic rather than the cause. Even then “runs” are usually confined to banks whose management warrants special suspicion; sound banks are rarely closed by runs. Furthermore, the growth of reckless banking stimulated by this law and the undermining of the underlying security of all the “guaranteed” banks in the state, which we shall presently show is likely to result from it, will ultimately increase bank failures to an alarming extent. It may be predicted that, if this law is left on the statute books of the state, Oklahoma will soon give the world some startling examples of “high finance” and eventually experience such a panic as few states of like wealth have ever witnessed. And when that panic comes, of what avail will be the present paltry guaranty fund? [Webster (1909a) pp. 74 and 76]

As evidence for his claims, Webster remarked on the rapid increase in the number of state banks chartered in Oklahoma and the thin capitalization required of these new banks. Cooke (1910a), president of the Columbia National Bank of Kansas City, Missouri, notes that from February 1908 to June 1909 the number of state banks in Oklahoma increased from 470 to 631 while over the same period the number of national banks fell from 312 to 230. There were also allegations of state bankers making illegal side-payments to large depositors to circumvent the state-mandated deposit rate ceiling. This behavior is consistent with the Dehejia and Lleras-Muney

12 Detailed discussions of the Oklahoma plan can be found in Cooke (1909 and 1910) and Robb (1921). Our discussion of Oklahoma draws heavily on these sources. Summaries of the eight state plans can be found in FDIC (1953), Golembe (1960), White (1983), and Calomiris (1989).

13 This is one example of the excessive credit expansion that explains the Dehejia and Lleras-Muney (2006) finding of a negative relationship between deposit insurance and growth.
Webster was a prescient observer. There is little doubt that the deposit guarantee encouraged risky behavior among the state banks. Calomiris (1989) calculates the failure rate for state banks to be 35.6 percent compared with 7.6 percent for the national banks and also notes that the state banks paid much higher dividends (presumably to compensate for risk) to their shareholders. Despite numerous amendments to the insurance plan, the fund was repealed in 1923 with $7.5 million owed to depositors.

The Oklahoma plan began operation on February 14, 1908 and faced its first test with the failure on September 28, 1909 of the Columbia Bank and Trust Company in Oklahoma City, at the time the largest bank in Oklahoma. The bank was organized in 1905 and in late 1908 control was taken over by W.L. Norton, an oil and real estate speculator, H.H. Smock, former State Bank Commissioner, and J.A. Menefee, Oklahoma state treasurer. Under their leadership, deposits grew rapidly from $365,000 to $2,800,000 in less than a year. Of the $2.8 million in deposits, $1.3 million belonged to individuals, $1.3 million to other banks, and $0.2 million to the state of Oklahoma. James K. Ilsley, a member of a Wisconsin committee sent to study the Oklahoma plan that happened to arrive on the day of Columbia’s failure, remarked on the rapid growth in deposits:

How was this accomplished? Well, in about every way that can be imagined, legitimate and illegitimate. Norton, the president, had been engaged in oil speculation in eastern Oklahoma and gathered in a considerable line of deposits from his friends by promising loans on easy terms; Smock, the vice-president, had been state bank commissioner and had used his acquaintance with country bankers to obtain deposits; Menefee, a stockholder, also state treasurer, deposited large amounts of public funds directly with the Columbia Bank, and in addition distributed deposits among the country banks with a recommendation of the Columbia as a reserve agent and a strong hint that the opening of an account with this bank would be appreciated. Under the law four percent had been named as the highest rate that state banks could pay on time deposits, but the managers of the Columbia apparently paid any rate up to six per cent and, in some instances, a commission besides. Now all these and other reckless methods were employed to get business, but at all times the guaranty law was worked for all it was worth and one cannot avoid the conclusion that this was directly responsible for most of the mushroom growth. [Robb (1921) page 44].

Cooke (1910b) noted that while vacationing on Lake Ontario he saw advertisements in the Rochester N.Y. paper by the Columbia bank soliciting deposits. The ads noted that the law of Oklahoma guaranteed the deposits. Norton also contracted with large banks outside of Oklahoma to process all of their checks drawn on residents of Oklahoma. He would remit to these large banks at par within a week, despite the fact that clearing the checks would involve charges from Oklahoma country banks and likely take much longer than a week. Without a doubt, the guarantee law allowed the Columbia bank to finance Norton’s oil and real estate deals.

At the time of Columbia’s failure, the Oklahoma fund had about $400,000 and cash and easily liquidated assets of Columbia amounted to roughly $1.1 million. Thus, it was not possible to immediately pay-off all $2.8 million of Columbia’s deposits and an emergency assessment of ¾ of a percent was levied against the state banks.

The Columbia failure is perhaps the perfect example of an incentive incompatible insurance scheme.14 Moral hazard led to excessive risk-taking on the part of Norris that was not reined in by regulators. Depositors of Columbia, including many banks, were lulled into complacency by the guaranty law. The prospects for the Oklahoma fund only got worse.

14 Kane (1989) constructs a political economy description of deposit insurance in the tradition of Stigler (1971) and Peltzman (1976).
following the failure, as banks began to switch charters to avoid the assessments. This adverse selection is emphasized and documented by Calomiris (1989).

Although the seven other state insurance funds of the 1910s and 1920s avoided such egregious examples of moral hazard, adverse selection, and incentive incompatibility they each eventually met the same fate as the Oklahoma fund. Although a large decline in the relative price of agricultural commodities played an important role in the dissolution of all the funds, there can be little doubt that deposit insurance only served to compound the problem. Wheelock and Kuhmbhakar (1994), Wheelock and Kuhmbhakar (1995), and Wheelock and Wilson (1995) present overwhelming empirical evidence of moral hazard and adverse selection in the Kansas deposit insurance scheme. In a wide-ranging comparison of national banks and state banks for states affected by the agricultural shock, Calomiris (1992) extends the work of Calomiris (1990) and concludes

The evidence on overall growth, average size, and membership patterns of banks during the 1920s indicates that the states can be grouped into three categories according to the banking systems in use at the time: states where deposit insurance made the system more fragile, magnified the expansion in response to the agricultural boom, and worsened the contraction during the bust; other unit banking states with less extensive swings in aggregate growth; and states with branch banking systems (restricted or statewide) that managed to respond most successfully to the challenges brought by the declining terms of trade in agriculture. [Calomiris (1992) pp. 289-290].

By the late 1920s, the initial U.S. experience with deposit insurance was widely judged to have been a failure.

IIIb. National Deposit Insurance

Nonetheless, with President Roosevelt’s signing of the Banking (Glass-Steagall) Act of 1933 on June 16, 1933 the United States adopted national deposit insurance. Deposit insurance was championed by Representative Henry Steagall (D-AL), Chairman of the House Committee on Banking and Currency but opposed by Senator Carter Glass (D-VA). Passage of the bill was seen as a compromise satisfying Glass’ desire to separate commercial and investment banking while allowing Steagall to protect unit banking. Flood (1992) and Calomiris and White (1994) argue that despite important special-interest opposition such as the American Bankers Association and the absence of administration support, deposit insurance became a public interest concern as a result of the public’s distrust of banking fueled by the many failures and holidays of the early 1930s as well as hearings by the House Committee on Banking and Currency run by Ferdinand Pecora, the Committee’s counsel. 15 This public interest married with the desire of small and rural banks to use deposit insurance as one way to reduce competitive pressure from large banks. The initial legislation created a temporary plan that began operation on January 1, 1934 and was to be replaced by a permanent plan later that year. This timetable proved unrealistic, and a permanent plan was not put in place until passage of the Banking Act of 1935.16

The debate surrounding, and legislation proposing, national deposit insurance was well informed by the experience of the state insurance schemes.17 As Flood (1992) emphasizes, the legislation sought to address many of the problems faced by the state plans. With regard to moral hazard, insurance was initially limited to $2,500 per depositor although raised to $5,000 per depositor within seven months (see Figure 3.) In addition, banks were prohibited from paying interest on demand deposits, limits were imposed on interest paid on time deposits, and bank

15 Subsequent research by White (1986), Benston (1990), Kroszner and Rajan (1994), Kroszner and Rajan (1997) and Kroszner and Strahan (2006) has largely contravened the Pecora hearing’s charges of bank misbehavior in the late 1920s and 1930s.
16 See FDIC (1998) for details of the transition from the temporary to permanent plan.
17 See Association of Reserve City Bankers (1933) for an example and Flood (1992).
regulation was systematized. Federal Reserve member banks were required to participate, reducing but not eliminating the problem of adverse selection. Importantly, however, no attempt was made to adjust insurance premiums according to risk. Premiums for all banks were set at one-twelfth of one percent of deposits. The plan proved popular with banks. In 1935, 91 percent of commercial banks joined the system.

In parallel with the treatment of banks, the Federal Savings and Loan Insurance Corporation (FSLIC) was created by the passage of the National Housing Act in 1934. Failure rates for S&Ls were well below those for banks in the early 1930s (Figure 2) as S&Ls had the right to refuse withdrawal requests. Thus there was no great outcry for S&L deposit insurance, and their take-up rate was much lower than that of the banks. By 1940, only 30 percent of S&Ls has obtained FSLIC insurance. This also resulted from the higher premium charged to S&Ls, one-eighth of a percent of total deposits compared to the bank charge of one-twelfth of a percent, see Figure 4.

Relative to the crisis years of the early 1930s, the first few years of national deposit insurance were very favorable, judged both in terms of minimizing the effect of bank failures and the preservation of the dual banking system.

The FDIC handled 370 bank failures from 1934 through 1943, an average of more than 50 per year. Most of these were small banks. Without the presence of federal deposit insurance, the number of bank failures undoubtedly would have been greater and the bank population would have been reduced. The presence of deposit insurance also may have limited the necessity for some banks to merge, and may have indirectly encouraged retention of restrictive state branching laws. [FDIC (1998) page 39]

However, the lessons learned from the experiences of the state plans gradually faded from the minds of regulators and politicians. This can be seen clearly in Figure 3, which plots the inflation-adjusted value of deposit insurance coverage. After declining in the first 15 years of operation, the real value of insurance was restored to initial levels in 1950. However, in 1966 the real value began to be ratcheted upward, reaching its peak in 1980. As will be shown, this increase exacerbated problems of moral hazard, compounding the difficulties facing the financial intermediaries during the 1970s and 1980s.

IIIc. Mid 20th Century State Guarantee Plans


Chartered in 1956 under Ohio law, the Ohio Deposit Guarantee Fund (ODGF) provided for the insurance of deposits at state-chartered S&Ls in Ohio that were not members of the FSLIC. The insurance fund was financed by an assessment of two percent of deposits and, unlike FSLIC, member institutions reported this assessment as an asset in their statements of financial condition. By 1985, the ODGF had 70 members with roughly $4.3 billion in deposits insured by a fund of roughly $130 million. Deposit coverage was unlimited and no ceilings were placed on interest rates paid on deposits. The largest S&L in the fund was Home State Savings Bank, owned by Cincinnati-based real estate mogul Marvin L. Warner. Warner was a contributor to both major political parties, but especially known for his Democratic ties – President Carter named him ambassador to Switzerland from 1977 to 1981 and Democrat Richard F. Celeste,

18 The adoption and early experience of S&L insurance is discussed in White (1998).
19 Federal Reserve Bank of Cleveland (1986).
Ohio’s governor at the time of the crisis, named him as chairman of the Ohio Building Authority in 1983.

On March 4, 1985 Florida-based E.S.M. Government Securities Inc. closed when it was discovered that ESM was short $300 to $350 million worth of securities that were to be held as a party to reverse repurchase agreements. Home State had close business dealings with ESM, and increasingly was using transactions with ESM to mask fundamental and longstanding insolvency associated with the sharp increase in interest rates in the early 1980s.\(^{20}\) Within the next days it is determined that Home State’s losses due to the failure of ESM will total $145 million, an amount that would essentially exhaust Home State’s capital of $20 million and the $130 million available in the ODGF.\(^{21}\) During March 6-8, 1985 depositor withdrawals from Home State total $150 million, and on Sunday March 10, 1985 Governor Celeste closes Home State.\(^{22}\)

The next week, other members of the ODGF face runs, as it becomes clear that ODGF assets are insufficient to cover all of Home State’s losses. Runs are concentrated in the Cincinnati area, with six institutions now technically insolvent as a result of the loss of the two percent of deposits paid into the ODGF.\(^{23}\) As both Kane (1987 and 1989) and McCulloch (1987) emphasize, the run on the other ODGF members is rational - a separation equilibrium in our terminology.\(^{24}\) After an attempt by the Ohio legislature to create a new guarantee fund of $90 million ($50 million loaned from the state and $40 million from an emergency assessment on ODGF members) fails to calm depositors, on Friday March 15, 1985 Governor Celeste declares a “holiday”, closing the remaining ODGF members and thereby creating a pooling equilibrium.

This run on the remaining thrifts would have been a useful acid test to determine which ones were sound – i.e. able to meet their obligations as promised – and which ones were not, had the Governor not panicked and closed them all indiscriminately. A few of the closed thrifts were relieved to be released from their duties to their depositors, but many of the others were irate that they were not even allowed to fulfill their obligations. Two actually opened on March 15 in defiance of the Governor’s order. [McCulloch (1987) page 233]

On Wednesday March 20, 1985 a bill passed by the Ohio legislature allowed ODGF members to reopen if they joined the FSLIC. The legislation also indemnifies the FSLIC for any losses incurred by ODGF members through July 1, 1987. After several attempts, the Ohio legislature on May 21 passes a $120 million Home State depositor bail out bill. On May 29, 1985 American Financial Corporation subsidiary Hunter S&L takes over Home State with a $21 million dollar bid, and Home State offices re-open under a new name on June 14, 1985. On September 26, 2000, Ohio announces that it has recovered $146 million (including interest charges) to offset the $120 million worth of payments in 1985 to Home State depositors.\(^{25}\) Of this amount, $4.5 million

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21 Warner’s son-in-law was general counsel for ESM.
22 The second author of this paper was a depositor with Home State at the time of the crisis. He withdrew his funds a day or two before Home State’s last day of business on March 8, 1985.
24 Cooperman et. al. (1992) find that less solvent, federally insured, banks and S&Ls in Ohio had to pay higher rates on CDs for the seven weeks following the ODGF crisis, also consistent with a separation equilibrium. Interestingly, DeGennaro and Thomson (1995) find that nationwide, shares of firms insured by the relatively weaker FSLIC outperformed shares of firms insured by the relatively stronger FDIC. This result is consistent with the hypothesis that the resolution of the Ohio crisis led market participants to believe that regulatory forbearance would be continued for the FSLIC fund and/or that implicit guarantees to depositors in weak insurance funds were more likely to be honored.
25 Columbus Dispatch (2000)
came from the bankruptcy settlement of Marvin L. Warner. Warner served two and one-half years in prison during 1991 through 1993 and died in April 2002.

The failure of the ODGF is, like Oklahoma, a classic example of the demise of an incentive-incompatible scheme. Premiums were not risk-based, there no limits on the amount of insurance per deposit, and no limits were placed on the rates paid on deposits. This enabled Warner to pursue his increasingly risky and illegal dealings with ESM, funding them by paying interest rates on deposits that averaged 125 basis points more than deposit rates at FSLIC institutions.26 Home State continued to attract deposits, including Governor Celeste’s campaign funds, and fellow members of the ODGF registered no complaints. This lack of complaints may seem puzzling until it is recognized that Home State was by far the largest member of the ODGF and was quite active in the administration of the fund. The chairman of Home State, David J. Schiebel, was secretary of the ODGF board. Of the 11 ODGF board members, five were officers of institutions that failed in the crisis. Thus, Home State and like-minded institutions were able to hijack the insurance fund. Quoting from Robert W. McAlister, interim S&L superintendent during the crisis

The division has been in a very weak position to deal with the persons it regulates. I think it has been subject to undue influence by the Marvin Warners of the world. It has been subject to undue influence by the Ohio Savings and Loan League. It is a classic example of regulators being subject to undue influence by the regulated. [Adams (1985) page 24]

Regulators and politicians also followed their incentives, doing their best to push the resolution of the Home State situation onto successors. The Securities and Exchange Commission first detected the unsound business practices of ESM in 1976, with examiners from the Ohio Division of Savings and Loan (ODSL, the ODGF regulator) becoming aware of ESM’s poor standing with the Federal Home Loan Bank Board in 1981. In 1982, an examiner with the ODSL characterized the Home State situation as a “veritable time-bomb” [Joint Select Committee on Savings and Loans (1986) page 21]. However, politically appointed heads of the ODSL never took action, preferring to negotiate agreements with Home State to reduce its exposure to ESM, agreements which were never honored. Despite the failure of politically appointed regulators and politicians to act in interest of Ohio taxpayers, twenty years after the fact the crisis is remembered in Ohio, at least by politicians involved in its resolution, as “democracy at its zenith.”27

IIIId. National Crises of the 1980s and early 1990s

The same forces that led to the demise of the state private insurance schemes were also felt with the national FDIC and FSLIC plans. The national plans were generally better capitalized than the state plans, which helped to delay the resolution of the problems that developed relative to the experiences of Mississippi, Nebraska, Ohio and Maryland. The difficulties encountered by the two federal systems during the 1980s and early 1990s have received enormous scrutiny. We present here only a brief account of the events, drawing on the excellent descriptions and analysis of Kane (1989), Barth (1991), National Commission on Financial Institution Reform, Recovery and Enforcement (NCFIRRE, 1993) and FDIC (1997).

Through the mid 1960s, S&Ls flourished as Congress’ agents for promoting home ownership. Paying no taxes and operating with no deposit rate ceilings, unlike banks, the S&L strategy of using short-term deposits to fund long-term fixed rate mortgage lending was a winner. However, the increase in interest rates that began in the mid-1960s, signaling the beginning of the great inflation, eroded both S&L profits and net worth. Profits fell as the difference between the interest rates earned on the existing portfolio of mortgages and the interest rate paid on new

26 Kane (1992)
deposits narrowed. The increase in interest rates also reduced the value of existing fixed rate mortgages on the asset-side of the S&L balance sheet, leading to a decline in net worth. The Interest Rate Adjustment Act of 1966, in an attempt to prevent S&Ls from competing with each other, imposed ceilings on deposit interest rates. These ceilings served only to drive depositors away from S&Ls in search of higher yields, leading to the “disintermediation” that gave rise to direct finance vehicles such as money market mutual funds.

The struggles of the S&Ls continued in the 1970s as nominal interest rates remained high and volatile. The struggle reached epic proportions in the 1979 when short-term interest rates jumped sharply when the appointment of Paul Volcker as Chairman gave the Federal Reserve new resolve to fight inflation. In 1980, S&Ls recorded losses of $4.6 billion and by 1982 13 percent of S&Ls were insolvent.

The early regulatory and statutory responses to the thrift crisis attempted to buy time, hoping that as interest rates returned to more normal levels that the industry would regain its health. This response is not surprising –both regulators and politicians have a strong incentive to push resolution into the future to avoid damaging their reputations. Moreover, the FSLIC fund was poorly capitalized, severely constraining any serious effort that regulators might have made to address the mounting thrift insolvencies.

The Depository Institutions Deregulation and Monetary Control Act (DIDMCA) passed in 1980 was the first major statutory response to the crisis. The legislation expanded the powers granted to S&Ls, allowing them to hold consumer paper, commercial loans and corporate debt and letting them, as well as banks, offer interest bearing checking accounts. S&Ls were also allowed to increase their holdings of acquisition, development and construction (ADC) loans. The act called for the phase-out of deposit interest rate ceilings by 1986. Perhaps most importantly, the capital requirement of 5 percent of deposits was replaced with a requirement to be set by the Federal Home Loan Bank Board (FHLBB) that had to fall in the range of three to six percent. By 1981, the FHLBB had lowered the capital requirement to three percent. In addition, the limit on deposit insurance coverage was raised from $40,000 to $100,000 per account (see Figure 4.) All of these changes were designed to improve the competitive position of S&Ls. However, the actual effect was to increase leverage, allow for riskier activities, make S&Ls easier to fund, and open the door to an expansion in the industry at a time when market forces called for a contraction.

The encouragement of thrift risk taking was heightened with passage of the Garn-St Germain Depository Institution Act of 1982 which effectively eliminated deposit rate ceilings, increased the allowable shares for non-residential lending in S&L assets, eliminated limits on loan-to-value ratios, and gave both the FDIC and FSLIC the ability to issue net worth certificates to paper over insolvencies.

At the same time, the FHLBB was following a policy of regulatory forbearance, allowing institutions to meet the capital requirement under the more liberal regulatory accounting principles (RAP) rather than the more stringent generally accepted accounting principles (GAAP). The deposit base for the capital requirement was calculated on a five-year moving average, meaning that a fast-growing institution would face a lower capital requirement. Moreover, S&Ls less than 20 years old faced yet a lower requirement. All of these changes created a dangerous situation.

It is difficult to overstate the destructive effect of the regulatory actions that weakened net worth standards in an environment in which S&Ls could expand their insured deposit liabilities at will. Of course, in the absence of deposit insurance, S&Ls would not have been able to attract deposits so readily. Thus, it was the provision of deposit insurance to institutions pursuing risky activities that was, and indeed still is, the root cause of the problem. There was virtually no cushion to protect the FSLIC against losses, and for many S&Ls there was strong incentive to take on risky ventures because they had little or nothing to lose and a lot potentially to gain. [NCFIRRE (1993) page 36]
Other regulatory changes only added fuel to the fire. Ownership requirements for S&Ls were also loosened, allowing for a single shareholder instead of the previous limit of at least 400 shareholders. Troubled institutions could sell “income capital certificates” to the FSLIC to bolster their assets under RAP accounting. “Goodwill mergers” were encouraged, under which an acquiring institution could carry as an asset the difference between the market value of the acquired firm’s assets and that firm’s liabilities. Under this policy, two troubled thrifts could merge and appear to have formed a healthy institution when nothing fundamental had changed. In order to attract new capital to the industry and avoid FSLIC payouts, the FHLBB encouraged thrifts organized as mutuals to convert to stock-holding corporations. Finally, the FHLBB eliminated the restriction on brokered deposits, making it easier for S&Ls to fund themselves. All of these changes moved S&Ls into new activities that had the potential for large profits. For example, a real estate developer could now purchase an existing S&L, or charter a new S&L, to fund acquisition of undeveloped real estate and construction of new homes and offices. If the developer were corrupt, new deposits could be used to increase the dividends paid to the shareholders (possible a single shareholder) and raise the salaries of the S&Ls management.

Though aware of the likely consequences, the Bank Board allowed members of an essentially bankrupt industry to grow rapidly, and to enter potentially risky areas in which they had little or no experience, and in which there was unusual potential for abuse and fraud. [NCFIRRE (1993) page 42]

Rather than closing insolvent thrifts, a policy of regulatory forbearance was put in place. Insolvent institutions were kept on life support, creating a class of “zombie” firms that had every incentive to take on high-risk, high-return strategies in an attempt to restore their health. These zombies pressured the healthy intermediaries by bidding up deposit rates and lowering returns in commercial ventures, a point emphasized by Kane (1989).

In the manner of a perfect storm, the problems of the thrift industry eventually also hit banks, and not just through zombie pressures on bank competitors. The passage of the Economic Recovery Tax Act of 1981 substantially reduced the depreciation life of real property and allowed passive investors to use real estate losses to offset income in other areas. These two changes dramatically increased the after-tax return on real estate investment. Real estate development boomed, attracting lending from both banks and thrifts. Much of this lending was concentrated in the Southwest, which was then hit by the decline in the real price of oil that began in 1982 and intensified in 1986. Moreover, the Tax Reform Act of 1986 eliminated the accelerated depreciation schedule and the loss provisions for passive real estate investors, creating a commercial real estate bust. Bank and thrift insolvencies and failures increased sharply. Pressure was greatest on the FSLIC, which was officially declared bankrupt by the General Accounting Office in 1987, but the solvency of the FDIC was also open to question.

By late 1983 it became clear that, despite a reduction in interest rates, new statutory and regulatory practices were called for to handle the looming crisis. In December 1983 the FHLBB raised the capital requirement to seven percent and in April 1984 the FHLBB and FDIC attempted to remove deposit insurance for brokered deposits although the courts struck down this action. Serious efforts to re-capitalize FSLIC began in 1985, but the Competitive Equality Banking Act did not become law until August 1987 and allowed for only a $10.8 billion re-capitalization, limited to no more than $3.8 billion in any 12-month period. At this time,

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28 See Kroszner and Strahan (1996) who stress, along with Peltzman (1970), that firms near insolvency will also have an incentive to increase capital distributions to shareholders.
30 See Kane (1985)
conservative, official estimates of the funds needed for re-capitalization were around $25 billion.\textsuperscript{31} Resolutions of failed thrifts picked up, but estimated resolution costs continued to mount. Final estimates from the GAO put the cost of resolving the S&L crisis at roughly $130 billion. To provide some perspective on this figure, that amount could be financed by a one-time $10 charge on every worker in the United States.

Full legislative resolution of the crisis began in February 1989 with the enactment of the Financial Institutions Reform Recovery and Enforcement Act (FIRREA). The act abolished the FHLBB and the FSLIC, creating the Office of Thrift Supervision in the Treasury to regulate thrifts and giving the FDIC responsibility for deposit insurance through the Bank Insurance Fund (BIF) and Savings Association Insurance Fund (SAIF). The Resolution Trust Corporation (RTC) was created to handle failed thrifts. Finally, borrowing authority for the FDIC was increased to $50 billion and the BIF and SAIF were mandated to eventually reach 1.25 percent of insured deposits.

Regulatory discretion was limited with the Federal Deposit Insurance Corporation Improvement Act (FDICIA) of 1991 that both laid out a series of prompt corrective actions that were to be taken by regulators as capital ratios of depository institutions declined and directed the FDIC to resolve failed banks in the least costly way to the deposit insurance fund. The motivation behind the least-cost resolution provisions was the failure of large banks such as Continental Illinois and Bank of New England during the 1980s in which all creditors had been bailed out to avoid ‘systemic’ disruptions.\textsuperscript{32} With regard to deposit insurance, the act mandated that risk-based premiums were to be put in place by 1994. The Omnibus Budget Reconciliation Act of 1993 established a national depositor preference system under which depositors and the FDIC have priority over non-depositor claims in the resolution of a failed financial intermediary.

The Depositors Insurance Funds Act of 1996 brought an official end to the crisis of the 1980s and early 1990s. It mandated a one-time assessment to bring the SAIF up to 1.25 percent of insured deposits and required that by the beginning of 1999 SAIF assessment rates be no lower than BIF rates. The Act also stipulated that banks judged to be well managed and capitalized would pay no insurance premiums so long as the funds reserves remained above 1.25 percent of insured deposits. Both the BIF and the SAIF reached the 1.25 percent threshold in 1996 bringing about a sharp reduction in insurance premiums as shown in Figure 5. In 2005, only 6 percent of banks were not judged to be well managed and capitalized, thus 94 percent of banks paid no insurance premiums.

IV. Current State of Reform and Outlook for Deposit Insurance

The U.S. experience with deposit insurance demonstrates the fragility of any scheme applied to undiversified financial intermediaries. Much of this fragility has been removed over the past decade or so, starting in 1994 with the Riegle-Neal Interstate Banking and Branching Efficiency Act. Reigle-Neal ended branching restrictions, allowing banks geographic diversification. The Gramm-Leach-Bliley Financial Services Modernization Act of 1999 repealed the Glass-Steagall separation of commercial and investment banking, allowing banks to diversify their product lines. These last two pieces of legislation encouraged continued consolidation in financial services. Regulator discretion has also been curtailed, most importantly in 1991 with the prompt corrective action regulations contained in FDICIA. The legislative

\textsuperscript{31} Barth (1991)

\textsuperscript{32} The Comptroller of the Currency announced publicly after Continental Illinois that some large banks were ‘too big to fail’. This public announcement was quickly seen as unwise, and the 1991 law attempted to correct market perceptions that some banks were too big to fail and thereby rein in excessive risk taking incentives.
changes combined with a very favorable economic environment left deposit insurance out of the headlines for at least a decade.

Most recently, rapid growth in bank deposits pushed the BIF down to near the 1.25 percent reserve threshold, potentially triggering assessments for even highly rated institutions. The prospect of assessments and a desire on the part of smaller banks to increase deposit insurance coverage, led to legislative action culminating in passage of the Federal Deposit Insurance Reform Act of 2005. The Act merged the BIF and SAIF into a new Deposit Insurance Fund (DIF), increased deposit insurance for retirement accounts to $250,000, provided for the adjustment of deposit insurance limits for inflation beginning in April 2010, and, perhaps most importantly, increased the FDIC’s flexibility in setting risk-based premiums. However, aggregate constraints remain, as the fund is capped and dividends must be paid to member institutions when the reserve ratio is above 1.35 percent.

Although the journey has been slow, and at times quite painful, bank regulation has come more than full circle since 1933. With no limits on branching and no wall separating commercial and investment banking, banking in the United States may enter a new era of stability similar to that enjoyed by Canada over the past century. In such an environment, and complemented by risk-rated premiums and prompt corrective action, deposit insurance is unlikely to be needed to protect the medium of exchange. It will continue to assuage the fears of small savers and as a result the intermediaries that serve this constituency will continue to support extensions of deposit insurance. This is evidenced by the advocacy of the Independent Community Bankers of America for increases in deposit insurance coverage. Constraints on regulatory forbearance make it unlikely that the moral hazard associated with deposit insurance will again manifest itself in a large crisis as in the 1980s. However, much will depend on the details of the FDIC’s implementation of its new flexibility in setting risk-based premiums and the ability of the FDIC to resist siren calls for increases in deposit insurance coverage beginning in 2010.

The historical narrative in this chapter highlights several important points. First, lack of diversification puts depository institutions at risk, and well-intentioned regulation can inadvertently heighten that risk. Second, the most recent historical research suggests that failures and panics brought about by the lack of diversification were most often separation equilibria that involved transfers from unhealthy to healthy banks rather than pooling equilibria that involved indiscriminate withdrawals from all banks. In one important case, a separating equilibrium was transformed into a pooling equilibrium when state regulators began to impose a rolling wave of bank holidays. Both of these points suggest that the adoption of deposit insurance is a second-best response that imposes costs of its own. The first-best response would be to directly address the lack of diversification. Third and finally, the costs of deposit insurance come through two main channels: increased risk-taking brought about by the moral hazard implicit in any insurance scheme, and excessive credit creation on the part of the insured institutions. All of these points are illustrated by the U.S. experience that provides an important lesson for policymakers in other countries who are weighing the costs and benefits of deposit insurance. Looking forward, the United States over the past decade has largely moved to the first-best response of addressing the lack of diversification, leaving a deposit insurance apparatus that probably does little to curtail banking panics but does provide important competitive benefits to small depository institutions.

33 Absent any congressional action, the FDIC would have begun charging BIF assessments in 2006
34 The Act is part of the Deficit Reduction Act of 2005 (S 1932) that was signed into law on February 8, 2006. Details on the legislation and the process leading to its adoption can be found in Dalton (2006) and Paletta and Blackwell (2006).
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An Illustrative History of Deposit Insurance in the United States

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Randall S. Kroszner and William R. Melick
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Percent of Insured Deposits


BIF  SAIF
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BIF

SAIF
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Figure 3

Figure 4

Figure 5
<table>
<thead>
<tr>
<th></th>
<th>Oklahoma</th>
<th>Kansas</th>
<th>South Dakota</th>
<th>Nebraska</th>
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<th>Mississippi</th>
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<td>March 6, 1909</td>
<td>March 1915&lt;sup&gt;1&lt;/sup&gt;</td>
<td>March 25, 1909</td>
<td>August 9, 1909</td>
<td>March 9, 1914</td>
<td>March 10, 1917</td>
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<td>Required Capital Ratio</td>
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<td>Deposits &lt; 15*(Capital and Surplus)</td>
<td>Investments &lt; 8*(Capital and Surplus)</td>
<td>Deposits Limited by size of Capital</td>
<td>Deposits &lt; 10*(Capital and Surplus)</td>
<td>Deposits &lt; 20*(Capital)</td>
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<td>2.0</td>
<td>1.1</td>
<td>1.4</td>
<td>5.0</td>
<td>0.3</td>
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</table>


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<sup>1</sup> Earlier legislation of March 9, 1909 never resulted in a system as it imposed a substantial membership fee and required a minimum of 100 banks.
Table 2
Failed State Deposit Insurance Plans of the late 1900s

<table>
<thead>
<tr>
<th></th>
<th>Mississippi</th>
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<th>Rhode Island</th>
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<td>S&amp;Ls</td>
<td>Industrial Banks, Cooperative Credit Corps.</td>
<td>S&amp;Ls</td>
<td>S&amp;Ls</td>
<td>Industrial Banks, Credit Unions, Banks and Trust Co.</td>
</tr>
<tr>
<td>Problem Members</td>
<td>Bankers Trust</td>
<td>Commonwealth</td>
<td>Home State</td>
<td>Old Court Community Merritt</td>
<td>Heritage RI Central</td>
</tr>
<tr>
<td>Problem Members as a % of Insured Deposits</td>
<td>45</td>
<td>20</td>
<td>19</td>
<td>28</td>
<td>16</td>
</tr>
<tr>
<td>Number Closed</td>
<td>34</td>
<td>3</td>
<td>70</td>
<td>102</td>
<td>45</td>
</tr>
<tr>
<td>Losses ($ millions)</td>
<td>35</td>
<td>33</td>
<td>150</td>
<td>350</td>
<td>290</td>
</tr>
<tr>
<td>Convictions or Guilty Pleas</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>