Are Some Banks Too Large To Fail? Myth and Reality

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That the world, or at least banking, as we know it today will end if we permit large banks to fail is one of the great popular beliefs in banking and a current favorite of many bank regulators. This belief may be called the too large to fail or TLTF myth. Similar myths also exist in nonbanking, for example, in industry with Chrysler, and in local government with New York City. Moreover, these myths are not limited to the United States.

TLTF is frequently used by bank regulators to 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. In using TLTF, the regulators play on the widespread public fears of the contagiousness of bank failures, that is, on fears that individual bank failures may ignite a domino or chain reaction that would tumble other "healthy" banks nationwide, other financial institutions, and possibly even nonfinancial institutions and the aggregate macroeconomy.

The failure of large banks is viewed particularly likely to cause spillover because of:

- 1. The large number of depositors;
- 2. The large number and dollar amounts of corresponding balances from other banks;
- 3. The presence of foreign deposits, and
- 4. The important role such banks play in the payments system.

The economic justification for TLTF has been clearly stated by bank regulators. At the time of the Continental Illinois National Bank crisis in 1984, Comptroller of the Currency Todd Conover testified that if:

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Continental had failed and been treated in a way in which depositors and creditors were not made whole, we could very well have seen a national, if not an international, financial crisis the dimensions of which were difficult to imagine. None of us wanted to find out.¹

In 1986, Irvine Sprague, who was a director of the FDIC at the time of the Continental Illinois rescue, wrote in his book *Bailout*:

The problem was there was no way to project how many other institutions would fail or how weakened the nation's entire banking system might become. . .Various scenarios were laid out, and they all signaled doomsday.²

More recently, FDIC Chairman William Seidman state that:

The bottom line [re TLTF]. . . is that nobody really knows what might happen if a major bank were allowed to default, and the opportunity to find out is not one likely to be appealing to those in authority or to the public.³

These statements suggest that the regulators did not know what would happen if a large bank fails and/or defaults; that they have done little, if anything, since the Continental crisis in 1984 to find out; and that they have acted in a way that reduced primarily their own risk exposure and that of their agency.

Because it may be too severe a standard to expect bank regulators to have a better understanding of the economics of the banking system than others, one might have been able to excuse this attitude in 1984, when nearly everyone, including most academics, subscribed to the "Chicken Little theory" of bank failures. But research since then has clearly shown that although theoretically possible, nationwide contagion is highly unlikely, particularly in today's environment with credible federal deposit insurance and a Federal Reserve that is wiser than the 1930's. Because the federal government guarantees the par value of deposits, deposits insurance discourages smaller deposit insurance does not discourage such a flight, the Fed can intervene to offset the resulting decline in aggregate bank reserves and money supply. Because it is impractical to conduct their financial operations with currency, larger depositors do not flee from bank deposits to currency but search for safe banks.

But despite this evidence, the regulatory agencies' policies towards TLTF have changed only moderately since 1984. It is almost as if they do not want to hear the recently developed "good" news. In the meantime, the

cost of their policies of permitting economically insolvent large institutions to continue in operation are now plainly evident:

- 1. Private market discipline is weakened and greater risk taking by other banks is encouraged, when they learn that the penalties for failure are not so severe. This has been a major contributor to the large dollar size of the current FSLIC crisis.
- 2. Smaller banks are discriminated against and put at a competitive disadvantage.

Bank Runs

Underlying most economic TLTF arguments is the fear of bank runs. Runs are viewed as the germs that spread contagion. Bank runs have two effects: one, on the individual banks experiencing the run themselves; and two, a potential effect on other banks and beyond. In a world with less than 100 percent deposit insurance, runs develop when a large number of depositors believe, rightly or wrongly, that their bank is economically insolvent and cannot repay all noninsured deposits in full and on time. These depositors subscribe to the reasonable hypothesis that is better to be safe than sorry.

For an individual bank, a run causes liquidity problems from hurried "fire-sale" losses. But theory and evidence both show that if the bank was solvent at the time the run started-the depositors were wrong-the run will not bring the bank down. That is, the liquidity problem will not expand into a solvency problem. Solvent banks experience little difficulty in obtaining sufficient liquidity through liquid asset sales or borrowing from other banks to meet deposit outflows.⁴ If the bank was economically insolvent to begin with-the depositors were right-the run will intensify the liquidity problem, and fire-sale losses are likely to be larger. However, the run was not the initial cause of the bank's problems. If the bank had been appropriately reorganized and recapitalized on a timely basis when it first became insolvent, depositors would know they would not suffer losses, and the run would have been unlikely. This conclusion is not new; it was reached in a study for the American Bankers Association in 1929 and was recently reconfirmed by a survey by Anna Schwartz for the American Enterprise Institute.⁵

The implications of a run on an individual bank for other banks depend on what the running depositors do. They have three options:

1. If the depositors perceive other banks in their market areas to be safe, they will shift their funds to those banks. This represents a *direct deposit*. (This would include deposit transfers to overseas

banks. In such shifts, the foreign bank becomes the owner of the deposit at the domestic bank.)

- 2. If the running depositors do not perceive other safe banks in their market areas, they are likely to purchase safe nonbank securities, such as Treasury securities. This represents a *flight to quality*. Now the question becomes, what do the sellers of the securities do with the proceeds? It is likely that the sellers perceive some safe banks in their market areas, because otherwise they would have been unlikely to sell the securities. This scenario represents an *indirect redeposit*.
- 3. If neither the running depositors nor the sellers of the Treasury securities perceive any bank in the country to be safe they will not redeposit the funds in other banks. Rather, they will hold currency outside the banks. This represents a *flight to currency*.

In both of the first two scenarios, there is little serious economic damage. Reserves and deposits are not lost to the banking system as a whole, but merely redistributed within the system. There is no decline in the money supply, nor are there universal liquidity problems. The liquidity strains of those banks losing deposits are offset by the liquidity surpluses of those banks gaining deposits. Some depositor and borrower dislocation may occur and uncertainty will increase. In addition, in the case of a flight to foreign currencies and banks overseas, a restructuring of exchange rates, will occur and, in the case of a flight to quality, a restructuring of relative interest rates will occur as prices on safe Treasury securities are bid up relative to those on risky bank deposits. The last two scenarios may adversely affect the terms of trade, dampen private investment activity, and cause abrupt changes in relative asset and goods prices. But, as there is no collapse of the money supply, nationwide bank insolvencies or a significant downturn in national business activity, which are the primary underlying fears from a bank run and the primary justification for special protection for large banks, will not occur. Runs on banks may spill-over on banks that the public views as being beset by the same problems, such as regional contagion, e.g., Texas in recent years. But this contagion is no different than that which occurs when any visible business firm fails or with any important frightening event, such as an act of terrorism or a "Tylenol" scare.

The third type of bank run lies behind the public fear of bank runs and has the most far-reaching effect. Because currency can only reach the public from the banks, the currency outflow will reduce bank reserves in the aggregate and thus also the money supply. Under fractional reserve banking, a loss of reserves ignites a multiple contraction process that affects healthy as well as insolvent banks. The attempts of all banks simultaneously to meet their deposit outflows increases the amount of securities for sale, fire-sale losses, and the likelihood of the banks' liquidity problems expanding into solvency problems. The feared spill-over effect becomes a reality. The run on an individual bank is transformed into a run on the banking system as a whole and may topple nonfinancial firms and the macroeconomy as well. It is this scenario that makes bank failures uniquely different from the failure of other business firms.

But U.S. history shows that a flight to currency is rare.⁶ Bank failures and bank runs have not been very closely correlated. Although bank failure have been relatively frequent throughout much of pre-1929 U.S. history, runs on individual banks were not. Indeed, runs on individual banks were negligible even during the prolonged period of frequent bank failures in the 1920s, when bank failures averaged more than 600 annually. Moreover, the Comptroller of the Currency attributed few of the failures of national banks in this period to runs.⁷ In part, the lack of runs in this period may be attributed both to the relatively small size of the failed banks and to the maintenance of reserves and money supply by the Federal Reserve⁸.

Almost all bank runs have led to either direct or indirect redeposits. Before the establishment of the Federal Reserve in 1913, private markets operated reasonably successfully to reduce the probability of a type-one or type-two bank run from developing into a type-three run. However, the cost was not zero. At times, the process involved temporary suspensions of convertibility and the issuance of "private" money in the form of clearinghouse certificates.⁹ But this cost was substantially lower than that of a type-three run or, in retrospect lower than the policies used by the regulatory agencies today to prevent such a situation. (The SLA crises in Ohio and Maryland in the early 1980s were the worst of all scenarios. There was no private market at work and no credible government insurance).¹⁰

Only in 1893 and 1929-33, were flights to currency and nationwide contagion likely to have occurred. But even in these periods it is not clear that the bank runs were the cause of the concurrent depressions, rather than vice-versa. Indeed, recent evidence suggests that the runs were as likely to have been symptoms of the problems in the macroeconomy as originators of these problems.¹¹ For example, Canada experienced approximately the same percent declines in aggregate economic activity between 1929 and 1933 as did the United States—GNP declined by about 40 percent, prices by some 25 percent, and M1 by some 30 percent. But there was no banking crisis in Canada. There were no runs either on individual banks or on the banking system. The currency to money ratio increased only moderately, compared to the U.S., where it more then doubled. Thus, in Canada, bank runs could not have been a contributor to the macroeconomic difficulties.

The recent experience of savings and loan associations in Texas also points to the high unlikelihood of national contagion and of spill-over beyond

institutions perceived to be in the same boat. Texas SLAs, as well as the industry as a whole, have experienced an outflow of deposits from mid-1988 through mid-1989. In large measure, the outflows reflected the sharp rise in short-term interest rates, including those offered by money market funds. Most SLAs did not match these rates on their deposits and voluntarily permitted the consequent disintermediation. But economically such disintermediation does not represent a run.

At the same time, increasing publicity about FSLIC's increasing problem and the increasing insolvency of Texas SLAs increased uncertainty among some depositors and some undoubtedly withdrew their deposits. But these funds were redeposited at perceived solvent SLAs in other states, money market funds, or FDIC insured commercial banks. They represented type-one runs-direct redeposits. There has been no evidence whatsoever that these depositors held their withdrawals in currency. Because of the paucity of information about the financial condition of financial institutions and the natural tendency in times of uncertainty to avoid contact with activities that may be similarly tainted (e.g., all airlines are effected by a major skyjacking and all bottles of over-the-counter drugs are suspect after a container poisoning scare), depositors may have avoided redepositing at healthy SLAs in Texas. More recently, the problems at large commercial banks in Texas, e.g., First Republic and MCorp, have resulted in flights to large banks elsewhere. This behavior represented a flight to safety, but not a flight to currency. Although not good for healthy SLAs and banks in the "contaminated" area, such a flight does not topple healthy banks in other areas or destabilize the financial system as a whole.

Yet, in this instance, regulators have failed to distinguish both between disintermediation and runs and between contagious and noncontagious runs. Instead, they have publicized the Texas outflows as contagious runs, at least partially, to build public support for the administration's SLA rescue proposal. For example, Chairman Seidman has argued that

While depositor discipline may theoretically be desirable, placing depositors at greater risk has not proven to be useful in practice. The problem is that depositor discipline sometimes works too well-taking the form of bank runs, which pose a threat to the stability of the financial system.¹²

Besides reflecting an implicit reversal from an earlier FDIC position that market discipline was relatively ineffective, Seidman provides no evidence that runs resulting from private market discipline pose any threat to financial stability.

Indeed, it is not private market discipline that appears to cause the worst runs, but federal deposit insurance. No bank or association has lost sufficient deposits in recent years to shrink from, say, 2 billion to 20 million in a few months. But a number of SLAs have grown by this magnitude in a not much longer time span. Federal deposit insurance has caused more frequent and greater runs *to* bad banks, which offered higher deposit rates, than private market discipline has caused runs *from* bad banks.¹³

Moreover, even before federal deposit insurance, banking in the United States was not as unstable as frequently described. Between the end of the Civil War and the end of World War I, the annual bank failure rate was lower than the failure rate among nonbank firms, although the variance was greater. In addition, losses to depositors at failed banks were averaged less than 0.2 percent of total bank deposits, annually. Moreover, even losses to depositors at failed banks averaged less than losses suffered by bond holders in defaults of nonfinancial firms.¹⁴ Bank runs did not generally lead to bank failures and bank failures did not generally lead to bank the the economy they served weakened. In this regard they are no different from grocery stores, automobile dealerships, movie theaters, or any other business firms.

Resolving Large Bank Failures

Primarily because few large banks appeared threatened with failure before the Continental Illinois National Bank crisis in 1984 the regulators gave considerably more thought to procedures for resolving small- and medium-size bank failures than large bank failures. The United States National Bank of San Diego and the Franklin National Bank in the mid-1970s were the only large bank exceptions and neither were money center banks. From 1984 through the Continental crisis in mid-1983, the FDIC experimented with imposing pro-rata losses, or "haircuts", on uninsured depositors at insolvent banks. This was done both through modified payoffs, in which the insured deposits and the non-haircut portion of the uninsured deposits are assumed by an acquiring bank in a purchase and assumption (P&A) transaction, and through liquidation, such as in the case of the Penn Square (Oklahoma) bank. But the FDIC backed away from these policies in the Continental crisis because of fear and uncertainty from at least three sources:

- 1. Large bank size.
 - a. Large potential dollar losses.
 - b. Long resolution time.
- 2. Large number and dollar volume of interbank balances with potential large losses to a large number of banks. Over 2,000 banks had correspondent balances and/or Fed funds loans with the Continental and 200 of these had balances that were greater than one-

half of their net worth.

3. Substantial foreign deposits.

But none of these were legitimate fears.

- 1. Large bank size
 - a. The Continental Bank was not totaled. Depositor losses were estimated at the time to be about 2 or 4 cents on the dollar. Indeed, then-FDIC Chairman William Isaacs even denied that the bank was insolvent. Currently, losses are estimated to be near 5 cents per dollar.
 - b. The FDIC had authority to use longer resolution time under conservatorship and deposit insurance national bank provisions.
- 2. Even if the losses had been as high as 10 percent, twice the largest estimate, no correspondent bank would have suffered losses greater than its capital and only two would have suffered losses greater than 50 percent of their capital.¹⁵
- 3. Similar to deposit transfers by domestic depositors, transfers by foreign depositors even to overseas banks do not change either total reserves or deposits in the U.S. banking system. Unless the withdrawals are in currency, which is highly unlikely for large deposits the reserves are shifted among domestic banks, although foreign banks may now own some of the deposits at these banks. If the funds are transferred to overseas banks in local currencies, exchange rates are likely to be affected.

In other words, the bank regulatory agencies did not thoroughly think through the consequences of all available options.

In practice, TLTF is not the issue anymore. The FDIC has modified its large bank nonliquidation failure resolution policies three times since the Continental rescue to progressively increase the number of creditors whose funds are risk.¹⁶

- 1. In 1984, the FDIC followed three policies with respect to the Continental:
 - a. TLTFL-too large to fail legally, although the bank is economically insolvent,
 - b. TLTILUBC too large to impose losses on uninsured depositors and other creditors of failed banks; and
 - c. TLTILBHOC too large to impose losses on creditors of in-

solvent bank holding companies.

In sum, this amounted to a policy of too large to fail legally and impose losses on all uninsured creditors, or TLTFLILAUC

- 2. In 1986, the FDIC permitted the First Oklahoma Corporation to default on its debt when its subsidiary First National Bank of Oklahoma City became insolvent. However, it neither permitted the bank to fail legally nor imposed losses on uninsured depositors and creditors of the bank. A similar policy was followed in 1987 for the First City National Bank of Houston and First City Corporation. The remaining policy may be described as too large to fail legally and impose losses on all uninsured bank creditors or TLTFLILAUBC.
- 3. In 1988, the FDIC both declared the First Republic National Bank of Dallas to have failed legally as well as being economically insolvent and imposed losses on creditors of its parent holding company, First Republic Corporation. The remaining policy was too large to impose losses on all uninsured bank creditors, or TLTILAUBC.
- 4. In 1989, the FDIC imposed pro-rata losses on fed funds sales and the uninsured portion of interbank deposits of solvent MCorp subsidiary banks at other insolvent MCorp (Texas) subsidiary banks. Indeed, these losses drove some of the former banks into insolvency. Because similar losses were not imposed on other uninsured creditors at these banks, the FDIC's action is being challenged in the courts. Special authority for the FDIC to impose such haircuts on interbank deposits of affiliated banks was explicitly authorized in the recent Financial Institutions Reform, Recovery, and Enforcement Act (FIRREA) of 1989.

Thus, only a policy of too large to impose losses on most uninsured bank creditors, or TLTILMUBC remains Importantly, no spill-over or other adverse effects occurred when the other three safeguards were removed one at a time, despite predications of such consequences.

Resolution procedures for large-bank failures do differ from small-bank failures, but primarily because their large size makes them more complex and lengthens the time required to develop optimal solutions. In the Competitive Equality Banking Act of 1987, Congress specifically provided the FDIC with more time in which to resolve large bank failures by authorizing the establishment of FDIC operated "bridge" banks for up to two years, later extended to three years by the Financial Institutions Reform, Recovery, and Enforcement Act (FIRREA) of 1989. The FDIC can apply its market-tested modified payoff technology. The FDIC encountered no significant problems with it at smaller banks, and should not encounter any

such problems at larger banks. At the close of business on the day the FDIC assumes control of the bank, it estimates the economic loss or negative net worth and pro-rates it among insured and noninsured deposits.¹⁷ A loss estimate has already been made by necessity when the FDIC decided to take control of the bank. The FDIC assumes the loss on insured deposits and charnges the loss on uninsured deposits to the appropriate depositors. This haircut is deducted from the uninsured deposits. Overnight (or, more frequently, over a weekend), the bank is sold, merged, or rechartered as a bridge bank. At the opening of business the next day, insured depositors have full use of all their deposits and uninsured depositors have full use of the non-haircut portion of their deposits. There is no interruption in business.

Immediate estimates of the negative net worth of a bank and, therefore, of the loss allocated to uninsured depositors, are likely to differ from the actual loss, which can only be determined much later. What if the FDIC's preliminary estimates are incorrect? In both its modified payoff and liquidation resolutions, the FDIC pays out additional funds through time to reimburse the uninsured depositors if its original estimate of loss was greater than the later determined actual loss and absorbs all additional losses if its original estimate turns out to have been to optimistic. The FDIC's recent treatment of the MCorp and later of Texas American (Dallas) intersubsidiary bank deposits appears to have followed this procedure

To minimize possible disruption from a sudden change in ground rules, this process could be phased in over time, say, a maximum haircut of 1 percent in the first year of operation, 3 percent the second year, 5 percent the third year, and no limit the fourth and following years. Such a policy was floated in the mid-1980s by some officials of the American Bankers Association, which represents those who may be expected to have the most to lose.¹⁸ More recently, this proposal was revived by some bankers. Interestingly enough, when first proposed, it was rejected most strongly by the bank regulators. More recently, the American Bankers Association has published a reform program that argues that:

The single most important goal of deposit insurance reform should be to require investors on uninsured deposits to share in the risk of failure of the institutions to which they commit their funds.¹⁹

The report rejects 100 percent deposit protection as unacceptable and recommends that marked discipline be enhanced. When a bank's equity capital falls to zero, the bank should be declared insolvent, uninsured depositors and creditors be assessed a loss equal to the average loss the FDIC has experienced in recent years, and the bank be re-opened the next business day as part of another bank or as a bridge bank.²⁰ Abandonment of TLTF was also recently recommended by the members of the New York Clearing House Association, who are among the country's very largest banks.²¹ This suggests that TLTF is as much a political as an economic issue.

Resolution of large bank failures by modified payoff technology will significantly increase private market discipline by uninsured depositors and creditors. Contrary to the belief of Seidman and many other bank regulators, such discipline works well and in a stabilizing fashion by encouraging banks to increase their capital and reduce the risk exposure of their portfolios.²² It did so before the FDIC and should operate even more efficiently now, because information about individual banks is quicker and cheaper to obtain than earlier. The threat of a run is a powerful force in inducing banks to err on the side of conservatism. Seidman appears to confuse the ex-ante incentives of banks under market-discipline and no-marketdiscipline scenarios.²³

Under the first scenario, bankers will already have acted to reduce the probability of a run on their banks by maintaining higher capital-to-asset ratios and incurring less risk exposure in their asset-liability portfolio mix. As discussed earlier, in this setting, runs are unlikely to topple banks. Under the second scenario, bankers will be less prepared as they have less at stake. In the absence of federal deposit insurance, runs are more likely to occur and bankers will be less able to prevent a bank failure when they do occur. This point has been recognized as far back as Walter Bagehot, more then 100 years ago.²⁴ Any change in regimes that may increase the likelihood of runs in the short-run needs to be phased-in slowly to give bankers sufficient time both to revise their operating strategies and to achieve their new equilibrium positions.

Of course, the threat of runs on and failures of all banks can be reduced further by adopting a program for more timely and mandatory regulatory intervention and recapitalization before a bank's economic net worth turns negative. This has been proposed by the author and George Benston, the Shadow Financial Regulatory Committee, and, in measure, recently adopted by the Federal Home Loan Bank Board.²⁵

In sum, a cost-benefit analysis of "too large to fail," even in its current less extreme form of "too large to impose losses on most uninsured bank creditors," clearly indicates that the cost of perpetuating the myth that this policy is necessary to preserve the world as we know it today is too great. This truth was recently recognized by none less than William Issac, who as Chairman of the FDIC during the Continental Illinois Bank crisis led the forces in favor of making everyone whole and defended his actions vigorously for many years. Recently, however, he recanted and admitted that:

With the benefit of five-years' hindsight, I am beginning to believe that Carter [Golembe] may be right [in arguing against my action]. Many (though not all) of the larger banks about which I was concerned have failed anyway and have almost certainly lost the FDIC more money than if they had failed earlier. And there can be no doubt that the thrift industry ran up far greater losses over the ensuing five years than would have been the case had we been forced to deal with the problems in 1984²⁶

Unless accompanied by a major breakdown in Federal Reserve policy, bank failures, even of large banks, do not lead to bank runs on noncontaminated banks and bank runs do not lead to the failure of economically solvent banks. Public policy makers should start tomorrow to remove the last vestiges of TLTF and impose pro-rata haircuts on uninsured depositors and creditors at even the largest economically insolvent bank, just as policy makers now do at all insolvent bank holding companies, regardless of size. Too large to fail should be left to college basketball coaches and college presidents to fight over!

Footnotes

¹ C. Todd Conover, Testimony in the U.S. Congress, Subcommittee on Financial Institutions Supervision, Regulation, and Insurance, Committee on Banking, Finance and Urban Affairs, *Inquiry into Continental Illinois Corporation and Continental Illinois National Bank: Hearings*, 98th Cong., 2nd Sess., September 18-19 and October 4, 1984, pp. 287-88.

² Irvine H. Sprague, *Bailout*, New York: Basic Books, 1986, p. 155.

³ L. William Seidman, "Remarks Before Garn Institute Deposit Insurance Forum," Washington, D.C.: Federal Deposit Insurance Corporation, November 14, 1988, p. 9. Basically the same statement was made in Seidman's remarks, "Too Big' – Revisited," before The Annual Southeastern Banking Law Conference, February 16, 1990.

⁴ George G. Kaufman, "The Truth About Bank Runs" in C. England and T. Huerras, eds., *The Financial Services Revolution: Policy Directions for the Future*, Boston: Kluwer, 1988, pp. 9-40; George G. Kaufman, "Bank Runs: Causes, Benefits and Costs," *Cato Journal*, Winter 1988, pp. 559-587; and George J. Benston et al., *Perspectives on Safe and Sound Banking*, Cambridge, MA: MIT Press, 1986.

⁵ George G. Kaufman, "Banking Risk in Historical Perspective," *Proceedings of a Conference on Bank Structure and Competition*, Chicago: Federal Reserve Bank of Chicago, 1986, pp. 231-49; and Anna J. Schwartz, "Financial Stability and the Federal Safety Net" in W. Haraf and R. Kushmeider, eds., *Restructuring Banking and Financial Services in America*, Washington, D.C.: American Enterprise Institute, 1988, pp. 34-62.

⁶ The history of bank failures is analyzed in Benston et al, Chapter 2.

⁷ Anna J. Schwartz, pp. 34, 55-56.

⁸ Milton Friedman and Anna J. Schwartz, *A Monetary History of the United States*, 1867-1960 (Princeton, N.J.: Princeton University Press, 1971), pp. 353-357.

⁹ Gary Gorton, "Clearinghouses and the Origin of Central Banking in the United States," *Journal of Economic History*, June 1985, pp. 227-83; and Richard H. Timberlake, Jr., "The Central Banking Rule of Clearinghouse Association," *Journal of Money, Credit and Banking*, February 1984, pp. 1-15.

¹⁰ Edward J. Kane, *The S&L Insurance Mess: How Did It Happen?* Washington, D.C.: Urban Institute, 1989; and Edward J. Kane, "How Incentive-Incompatible Deposit Insurance Funds Fail," Prochnow Report No. PR-014, Madison, Wisconsin: The Prochnow Educational Foundation, 1988.

¹¹ Gary Gorton, "Banking Panics and Business Cycles," Oxford Economic Papers, December 1988, pp. 751-81; and Phillip Cagan, Determinants and Effects of Changes in the Stock of Money, 1875-1960; New York: Columbia University Press, 1965.

¹² L. William Seidman, "Deposit Insurance For the Nineties-Remarks Before The National Press Club," Washington, D.C.: Federal Deposit Insurance Corporation, November 30, 1988, p. 9. See also the account of the FDIC's takeover of the Broadview Savings Bank (Ohio) in Kathleen Day, "Under New Manage-

ment - The Federal Deposit Insurance Corporation," Washington Post National Weekly Edition, May 1-7, 1989, pp. 20-21.

¹³ See, for example, Paul Duke, Jr., "How Texas S&L Grew Into A Lending Giant and Lost \$1.4 billion," *Wall Street Journal*, April 27, 1989, pp. A1, A10.

¹⁴ George G. Kaufman, "Banking Risk in Historical Perspective".

¹⁵ Continental Illinois National Bank Failure and its Potential Impact on Correspondent Banks, Staff Report to Subcommittee on Financial Institutions, Supervision, Regulation, and Insurance, Committee on Banking, Finance, and Urban Affairs, October 6, 1984, pp. 16-18; and George G. Kaufman, "Implications of Large Bank Problems and Insolvencies for the Banking System and Economic Policy," Staff Memoranda, 85-3; Chicago, Federal Reserve Bank of Chicago, March 1985.

¹⁶ Few large insolvent banks, similar to any other large insolvent firm, are liquidated and depositors paid off. The FDIC will resort to such a policy only if it is unable to quantify the bank's assets and the contingencies are sufficiently undeterminable to make a sale too costly. Since 1934, the FDIC has liquidated only two reasonably large banks, the Penn Square Bank (Oklahoma) in 1982 and the Guradian Bank (New York) in 1989. Both banks had under \$0.5 billion in deposits. Tax considerations played a part in the FDIC's decisions in some cases.

¹⁷ A description of the modified payoff procedure appears in Federal Deposit Insurance Corporation, *Deposit Insurance in a Changing Environment*, Washington, D.C.: Federal Deposit Insurance Corporation, 1983, pp. III-4-6; and Jonathan R. Macey and Geoffrey P. Miller, "Bank Failures, Risk Monitoring, and the Market for Bank Control," *Columbia Law Review*, October 1988, pp. 1153-1226.

¹⁸ P.Michael Laub, "Benefits of a Deposit Insurance System with Modified Payoffs," Washington, D.C.: American Bankers Association, February 28, 1986 (unpublished).

¹⁹ American Bankers Association, Federal Deposit Insurance: A Program for Reform, Washington, D.C., March 1990, p. 7.

²⁰ American Bankers Association, pp. 15-17.

²¹ Jed Horowitz, "Banks in New York Clearing House Vote to Oppose 'Too Big to Fail' Credo", *American Banker*, January 26, 1990, pp. 1,13.

²² George J. Benston, et al., and George G. Kaufman, "Banking Risk in Historical Perspective".

²³ George G. Kaufman, "Bank Runs: Causes, Benefits and Costs."

²⁴ Thomas M. Humphrey, "Lender of Last Resort: The Concept in History," *Economic Review*, Federal Reserve Bank of Richmond, March/April 1989, pp. 8-16.

²⁵ Federal Home Loan Bank Board, "Required Capital Levels for Insured Institutions: Regulatory Intervention," (Advance Notice of Proposed Rulemaking.) No. 88-1565, December 30, 1988. In April 1989, the Federal Home Loan Bank Board assumed control of three associations that were solvent by Regulatory Accounting Principles (RAP) but not by Generally Accepted Accounting Principles (GAAP)—Gibraltar Savings of Beverly Hills, CA; Gibraltar Savings of Bellevue, Wash; and Lincoln Savings and Loan, Irvine, CA. See also George S.

Benston and George G. Kaufman, *Rise and Solvency Regulation of Depository Institutions: Past Policies and Current Options*, New York: Salomon Brothers Center for the Study of Financial Institutions, New York University, 1988; and Shadow Financial Regulatory Committee, "An Outline of a Program for Deposit Insurance and Regulatory Reform," *Policy Statement No. 41*, February 13, 1989.

²⁶ William M. Isaac, "Deposit Insurance Reform: Banking's Top Priority," *The Golembe Reports* (Washington, D.C.: CHG Consulting), June 1989, p. 5. Recently, it appeared that Seidman had also had a change of mind. The *Wall Street Journal* quoted him during the demise of Drexel Burnham as saying:

If the market floats through all this, then we have greater stability than we had hoped... If this goes through, they may say the too-big-to-fail doctrine is gone for everyone. It could have that kind of influence.

(Allan Murray and Kevin G. Salwen, "Fed SEC Officials Decided Hands-Off Policy Was Best", *Wall Street Journal*, February 14, 1990, p. A6.) But he denied making this remark the next day in an interview with the *American Banker*. (Robert M. Garsson, "Regulators Not Likely To Treat A Big Bank Failure Same Way," *American Banker*, February 15, 1990, pp. 1, 7.)

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