Market Discipline as a Regulator of Bank Risk

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The collapse of the savings and loan industry and the failure of large numbers of commercial banks in the 1980s have generated a reexamination of bank regulation in the United States and a new banking act. Despite this increased attention, no consensus about how to reform the banking system has emerged. Instead, proposals range from eliminating deposit insurance and relying solely on market discipline to expanding deposit insurance and relying solely on bank regulators.

The banking reformers generally fall into one of two groups. The first believes the best way to correct the problem of banks taking on too much risk is to provide regulators with the right tools. Most in this group question the use of market discipline because they have little confidence that depositors can adequately monitor banks and they are concerned that runs on individual banks could easily turn into system-wide banking panics. The second group believes that market discipline is the best way to regulate banks. These reformers argue that market forces are far better than regulators at assessing and pricing bank risk and that the benefits of market discipline outweigh the costs associated with bank runs and banking panics.

The evidence, in my view, supports those in the pro-market group, although it does not support unfettered competition. On the one hand, history suggests that banking can be a very unstable industry and that this instability has had far-reaching effects on the rest of the economy.

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On the other hand, history shows that exclusive reliance on the regulatory approach can be costly and that market discipline can help regulate banks. A strong case exists for coinsurance as an effective way of introducing market discipline. Although coinsurance can be set up in a variety of ways, the system referred to here is one in which depositors are insured on a fixed percentage of their deposits. (For example, 80 percent of deposits in an account are insured, 20 percent uninsured.) Depositors thus have an incentive to monitor their banks; although a large part of their deposits is protected if their bank fails, some funds are at risk.

This paper begins with a review of the history of instability in banking and shows how federal deposit insurance ended this instability. While deposit insurance solved the instability problem in deposit banking, it created an incentive problem that recent experience suggests has been very costly. In the next-to-last section of the paper, an argument is made for some market discipline by examining depositor behavior prior to deposit insurance; arguments are then presented for coinsurance as a credible way to introduce that market discipline.

Banking Panics Eliminated . . .

Governments do not often find successful solutions to economic problems. Until recently, the deposit insurance system seemed to be one of the few exceptions. The problem was instability in banking: too many bank failures and costly banking panics. The government solution was federal deposit insurance, a program originally designed to protect small savers and to reduce the likelihood of banking panics.

Banking's Volatile Past

Instability in banking has a long history in the United States. Well before 1933, when Congress decided to provide federal deposit insurance, bank failures and subsequent losses to noteholders and depositors were common features in U.S. banking.

The most infamous period was known as the *Free Banking Era*, which began in 1837, shortly after the Second Bank of the United States lost its charter and began closing its branches around the country. The void was filled by a new type of bank charter that was permitted under free banking laws. Michigan was the first state to pass a law that allowed anyone to open a bank if that person met certain minimum requirements, one being that the notes of the bank had to be backed by state or federal bonds as specified in the law. By 1863, a majority of states had passed free banking laws, and hundreds of new banks were formed across the country. Many were short-lived and failed to pay off their

depositors in full. While experience varied among the states, with those in the West having the most bank failures, problems occurred in most of the free banking states.

Among the states studied by Rolnick and Weber (1983, 1988), Minnesota's experience appears to be one of the worst. Shortly after becoming a state in 1858, Minnesota passed a free banking law. Within a few months, the state had 16 new banks. By the summer of 1859, however, 11 of those banks had closed and nine had failed to pay off noteholders in full. In five cases, noteholders received less than 25 cents on the dollar.

Looking at the four states in the Rolnick-Weber sample, we can see that banking problems were not confined to Minnesota. The number of free banks chartered between 1838 and 1863 in New York, Wisconsin, Indiana, and Minnesota totaled 709. Of these, 339 closed within a few years after they had opened (some within a few months), and 104 of the 339 failed to pay their noteholders in full.

Neither the passage of the National Banking Act in 1863 nor the establishment of the Federal Reserve System in 1913 ended these problems. In fact, in some ways the problems grew worse. Banking panics associated with contractions in economic activity became a regular and disturbing feature of the U.S. economy.

The National Banking Act was an attempt by Congress to create a uniform national currency and a more stable banking environment than the state-run banking system. The areas regulated by the act included branching, capital and reserves, types of loans, and amounts lent to any single borrower. The act also provided for annual bank examinations that were generally regarded as more stringent than state bank examinations.

The act eventually succeeded in creating a uniform currency, but it failed to achieve the banking stability it was designed to create. While the number of bank failures was relatively modest over these years, in eight different years as many as 100 banks failed. And while systemwide banking problems had existed before 1863, they became more frequent during the national banking period (from 1863 to 1913).

According to Sprague (1910), major banking panics occurred throughout the national banking period. He identifies five panics, in the years 1873, 1884, 1890, 1893, and 1907. He claims that each originated with the failure of one or more large financial institutions in New York City, each occurred in the autumn, and each was associated with a large decline in real economic activity (Chari 1989). In three of these panics (1873, 1893, and 1907) suspension of convertibility of bank deposits into cash was widespread. Sprague describes the 1907 panic as the longest and most severe. Other historians have noted that it was the catalyst that led to the creation of the Federal Reserve System.

Recent studies of banking panics during the national banking

period find less evidence of systemwide problems than is reported by Sprague, but all find evidence of some general loss of confidence in the banking system. Sprague is somewhat vague about the definition of a banking panic: He suggests that you know it when you see it. Benston, Eisenbeis, Horvitz, Kane, and Kaufman (1986) give a more precise definition: A *banking panic* is a period of widespread bank runs and failures that is accompanied by a decline in total bank deposits and a net currency outflow from the banking system. Using this definition, they identify only three such occurrences during the national banking period (1878, 1893, and 1908) corresponding to only two of the periods Sprague identifies. Dwyer and Gilbert (1989), defining a panic as a period when banks suspend payments, also identify only three episodes (1873, 1893, and 1907), corresponding to three of the periods Sprague identifies.

Differences also arise between the work of Sprague and these more recent studies on the impact of banking panics on economic activity. Benston and his colleagues (1986, p. 59) argue that it was somewhat weaker than Sprague suggests. They find that the rate of bank failures between 1875 and 1920 was only modestly correlated with the rate of business failures, with an index of industrial production, and with an index of common stock prices. Dwyer and Gilbert (1989, pp. 53–54) find that the panics during the national banking period resulted, on average, in relatively small losses to depositors at failed banks and that the losses declined over time.

The debate on the effects of banking panics, however, is far from over. A very recent macroeconometric study of the impact of bank failures on economic activity during the national banking period (Grossman 1993) shows that bank failures had a substantial negative impact on aggregate economic activity. In addition, many think the banking problems of the 1920s and 1930s contributed to the Great Depression (Friedman and Schwartz 1963, Ch. 7; Bernanke 1983). The Federal Reserve System did not end banking instability; if anything, the problems got worse and the impact on economic activity appeared to be even greater. After the Fed was established in 1913, the United States experienced a large number of bank failures. In the 1920s, the United States lost roughly 6,000 of its 30,000 banks. Between 1930 and 1933, in the worst financial panic in U.S. history, it lost another 9,000 banks as real economic activity fell by one-third.

Deposit Insurance's Stabilizing Effect

The banking crisis of the early 1930s led Congress to establish a federal deposit insurance system. Deposit insurance was not a new idea. To the contrary, Congress had debated deposit insurance for roughly 50 years. But it took three separate banking panics between 1930 and 1933

to convince Congress that more than the Federal Reserve System was required to end the instability in banking.

Consequently, to build depositor confidence and help prevent panics, Congress established the Federal Deposit Insurance Corporation (FDIC). On January 1, 1934, the FDIC began insuring deposits up to $2,500 in banks that had chosen to become members of this new government corporation. Over the years, the fraction of total deposits that was insured gradually increased as more depositors chose insured commercial banks and as the maximum deposit coverage was increased. Today, the FDIC insures deposits up to $100,000 per account, and this insurance covers over 75 percent of all commercial bank deposits.

Federal deposit insurance brought stability to banking and an end to banking panics. It is difficult to say how many bank failures are acceptable, but the average annual number was relatively small until the 1980s. In the first five years of the deposit insurance system (1934 to 1939) commercial bank failures averaged just over 50 a year. Over the next five years, the average declined to 17, and after that, it did not get above 11 until 1982.[1] The history of the savings and loan (S&L) industry has been similar. It was not until after 1982 that more than just a handful of S&L failures occurred each year.[2]

Even when failures of both commercial banks and S&Ls increased sharply after 1982, the United States experienced only a few bank runs and no systemwide banking panic (Bentson and others 1986, Ch. 2). However, a price was paid for this success. The deposit insurance system, originally intended to protect only the small saver, was extended to protect virtually all bank depositors.

While some debate continues as to exactly when the full insurance coverage policy was adopted, all agree that it was well in place after regulators rescued the Continental Illinois Bank in the spring of 1984. Considered one of the premier banks in the country at the beginning of the 1980s, Continental took large losses on its energy loans. In the spring of 1984, a modern-day run on the bank took place when many of the uninsured depositors tried to electronically remove their funds from Continental. Fearing that the run on Continental could spill over to other troubled banks, the bank regulators stepped in and announced that all deposits would be protected by the FDIC. The run was halted, and a possible banking panic was averted. The bailout of Continental soon became known as an application of "too-big-to-fail": the policy that

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[1] Source: Federal Deposit Insurance Corporation.

[2] Problems with both commercial banks and S&Ls developed in the high-inflation, high-interest-rate environment of the 1970s and early 1980s, but they did not result in a significant increase in bank failures.

asserts that some large U.S. banks must be given preferential treatment to prevent them from going bankrupt.

The price of stopping the run on Continental turned out to be larger than one of extending protection to uninsured depositors at large banks. Smaller banks began to complain that they could not compete in the market for large deposits if depositors knew that uninsured accounts at large banks would be protected by the FDIC. So shortly after announcing the too-big-to-fail policy, regulators proclaimed that deposits at all banks would be protected. And so they were. Between 1985 and 1990, 99 percent of uninsured deposits at all failed banks were fully protected by the FDIC. In order to eliminate banking panics and to provide "a level playing field," regulators substantively changed the deposit insurance system from one that was intended only to protect small depositors to one that protects all depositors.

. . . *But Moral Hazard Introduced*

That insurance on 100 percent of deposits would work, in the sense of eliminating bank runs and banking panics, is rather obvious. A less obvious point is that while it corrects one problem inherent in deposit banking, it introduces another inherent in deposit insurance itself. Economic theory suggests a disconcerting side effect of deposit insurance: Profit-maximizing banks will take on the riskiest portfolio possible (Kareken and Wallace 1978; Kareken 1983). And recent experiences with both S&Ls and commercial banks have provided much support for this theory.

Most insurance has a costly side effect known in the insurance literature as *moral hazard*. Consider the following description of this problem (Boyd and Rolnick 1989, p. 4):

> People who are insured against a particular risk have an incentive to change their behavior. Consider the owners of a factory who purchase fire insurance. Prior to this purchase, they would have to bear the entire cost of a conflagration. Once insured, though, a great part of the cost will be borne by the insurance company. For a fixed annual fee the owners' concern about such a loss is significantly alleviated, which is the obvious benefit of insurance. Consequently, the insurance company should expect the insured to take more risks than they would have without the insurance. The insured can now afford to be a little less cautious about the disposing of flammable materials such as old paint cans or chemical containers. If the insurance company hopes to remain in business, it must take account of such behavioral changes when pricing and administering policies.

Federal deposit insurance suffers from the same problem of creating the wrong incentives. In fact, theory suggests it may suffer from an

extreme form of moral hazard. Depositors, once insured, have no reason to worry about the riskiness of their bank's portfolio. And riskier banks, therefore, do not have to pay higher rates to their depositors. Assuming that riskier portfolios yield higher returns than safer portfolios and that bank owners are risk neutral, or can readily diversify risk, we can show that banks will take on the riskiest portfolio possible.

To illustrate how deposit insurance distorts a bank's behavior toward risk, consider the hypothetical example of a Mr. Smith who, with $200,000 in cash, opens a new bank. We will assume Mr. Smith meets all the requirements to get a national bank charter from the Office of the Comptroller of the Currency, becomes a member of the FDIC, and opens the Smith National Bank with $100,000 in cash. At this point, Mr. Smith's and his bank's balance sheets look as follows:

Smith National Bank

Reserves	$100,000		
		Equity	$100,000

Mr. Smith's Balance Sheet

Cash	$100,000		
Bank Stock	$100,000		
		Net Worth	$200,000

Assume Mr. Smith offers a deposit rate somewhat above that of his competitors—say, 10 percent—and as a result attracts $900,000 in deposits. The balance sheet of Smith National Bank now becomes

Smith National Bank

Reserves	$1,000,000	Deposits	$900,000
		Equity	$100,000

while Mr. Smith's balance sheet remains unchanged.

Of course, leaving the bank's funds idle is no way to run a bank. To put this money to work, Mr. Smith heads to Las Vegas, finds the nearest casino with a roulette wheel, and bets the bank's $1,000,000 on black. To hedge his investment, Mr. Smith bets $100,000 of his own money on red. The balance sheets now become

Smith National Bank

A bet on black	$1,000,000	Deposits	$900,000
		Equity	$100,000

Mr. Smith's Balance Sheet

A bet on red	$100,000		
Bank Stock	$100,000		
		Net Worth	$200,000

From the bank's point of view the investment is risky, but for Mr. Smith the overall strategy has a very high expected return and is perfectly safe. (This example assumes only two possible outcomes: red or black.) Consider the financial result if the roulette wheel turns up the color red. Mr. Smith's bank goes bankrupt, the bank's assets are lost, and the bank stock is worthless. Depositors, however, are protected by the FDIC. Even the interest on the deposits is insured by the FDIC. And Mr. Smith has not lost any money because he had a perfect hedge. Since his own money was bet on red, his net worth is still $200,000.

Now consider the equally likely outcome that the roulette wheel turns up the color black. On the one hand, Mr. Smith loses his bet and $100,000 of his own money. On the other hand, the new balance sheets show Mr. Smith's net worth is up by a factor of more than five.

Smith National Bank

Cash from bet on black, less $90,000 in interest payments	$1,910,000	Deposits	$900,000
		Equity	$1,010,000

Mr. Smith's Balance Sheet

A bet on red	$0		
Bank Stock	$1,010,000		
		Net Worth	$1,010,000

The point here is that 100 percent deposit insurance creates an incentive for bank owners to take on much more risk than they would otherwise. Under the assumption that owners can perfectly hedge bank risk (or, equivalently, that owners are risk neutral because their bank

stock is only a small percentage of their wealth), banks will take on the riskiest portfolio possible. The effect is essentially heads the banker wins, tails the taxpayers lose; depositors are indifferent because they receive the same return regardless of the outcome.

Some might argue that this is an extreme example, because bankers probably would not be allowed to bet their funds in Las Vegas. But I submit that some of the loans and direct investments that banks are permitted to make are at least as risky as Mr. Smith's portfolio strategy. Others might argue that while the owners of banks may have an incentive to bet the bank, the managers of banks do not. Managers value job security, they are risk averse, and they cannot hedge their risk so readily. Hence bank management will be an important force countervailing the incentive effects of moral hazard. This is not certain. If bank owners want bank management to take risky portfolios, they can easily provide their managers with the proper incentives to take on that risk—high salaries, performance bonuses, and generous severance packages.

Regardless of how extreme these assumptions are, most would agree that a theory should be ultimately judged on how well it confronts the data. Based on this criterion, the theory underlying the effects of moral hazard does quite well.

The most overwhelming evidence supporting this theory has been provided by the behavior of the S&L industry. With the passage of the Monetary Control Act of 1980 and the Garn–St Germain Act of 1982, virtually all deposits at S&Ls became insured and S&Ls were given carte blanche to invest in high-return, high-risk portfolios. And they did so with a vengeance. (In fact, some regulators at the time actually encouraged S&Ls to take risks, as if they needed such encouragement.) In less than six years, the S&L industry was in serious trouble. By 1988, close to one-half of all S&Ls were thought to be bankrupt or near-bankrupt; losses that eventually will be borne by taxpayers are now estimated at $200 billion in today's dollars.

The evidence supporting the effects of moral hazard is not confined to the S&L industry. Commercial banks also had their share of problems, once the policy of 100 percent deposit protection was in place. As noted earlier, prior to the 1980s, relatively few banks failed. During the 1980s, that record changed dramatically. In 1982 and 1983, 42 and 48 banks closed, respectively. Between 1984 and 1988, the average annual number of bank failures exceeded 144. By 1988, several of the largest banks in the United States were believed to be in at least some financial trouble. And by 1990, the FDIC was estimated to have a negative net worth of roughly $70 billion.[3]

A comparison to the Great Depression is useful to create some

[3] Source: Federal Deposit Insurance Corporation.

perspective on the size of this financial debacle. Consider that for the six-year period starting in 1930 and ending in 1935, the following losses occurred:

Losses to depositors of closed banks	$1.4 billion
Losses to owners of closed banks	1.3
Net loan charge-offs in operating banks	4.0
Total	$6.7 billion

Source: Federal Deposit Insurance Corporation (1940, p. 66).

After adjusting for inflation, the $6.7 billion total is less than 25 percent of the estimated cost of the S&L bailout. Based on per capita real loss, the $6.7 billion is still only one-half the loss of the S&L bailout.

A Solution

The history of banking under 100 percent deposit insurance yields two lessons. As argued above, one lesson is that moral hazard is more than just a theory. The other lesson is that despite a host of regulatory agencies and well-intentioned bank regulators, the regulatory system failed to contain the moral hazard induced by 100 percent deposit insurance. The $200 billion S&L taxpayer bailout and an insolvent FDIC are overwhelming evidence of that regulatory failure.

While ways may be found to improve the regulatory system, they are all likely to fail without the aid of market discipline. A problem with leaving the containment of moral hazard solely up to the regulatory system is that measuring risk is difficult. Moreover, even if regulators could somehow measure risk, they have no way of knowing how much risk is optimal. Consequently, either regulators will force banks to take too little risk (and the public will complain about a credit crunch) or they will allow banks to take too much risk (and taxpayers will face another large bailout).

Regulation Will Fail

To make these arguments about the regulatory reform approach to moral hazard more concrete, consider two specific reforms that are part of the Federal Deposit Insurance Corporation Improvement Act of 1991 (FDICIA). The first is to base capital requirements on risk. Under FDICIA, banks that hold riskier portfolios are required to hold more capital. This seems like a good idea, because a private insurance company would probably operate this way. But a private insurance company also has to make a profit and thus would assess risk accordingly. Without a genuine profit test, how are regulators to make these calculations? Even if they could assess the risk, how are they to set the

capital requirements to achieve the right amount of risk? They have no way of knowing the right amount of risk without a profit test. So the answer to these questions is, they cannot.

The early closure reform also raises some disturbing issues. *Early closure* means that banks will be closed before their net worth becomes negative. Again, this is a reform that appears sound. If banks could be closed early, they would have little incentive to take on a risky portfolio. Consider what early closure would mean for Mr. Smith's bank. Regulators would have to close the bank before the roulette wheel was spun; owners would not share in the winnings. (It is interesting to note that at this point, the bank would have a capital-to-asset ratio of 10 percent and a very high expected net worth.) The success of the early closure policy, however, is based on a questionable assumption: Regulators can monitor banks closely enough to close banks in time. This assumes not only that regulators have detailed and timely information, but also that the value of banking loans and investments changes in a smooth and continuous way. Generally speaking, the latter is not true because the value of bank loans can change very sharply over short periods of time. Moreover, unlike the roulette wheel bet, the market value of a bank loan is often difficult to assess. As a result, unless the regulators are virtually running the bank, a provision for early closure will not contain moral hazard.

Market Discipline Has Succeeded

Thus, relying solely on regulators either will fail to control moral hazard—and banks will take on too much risk—or will result in excessive regulation—and banks will take on too little risk. Some might argue that this is the best to be hoped for and that regulators must be relied on to manage this problem. This argument favors the regulatory approach because it assumes that the market (that is, depositors) cannot be relied on to discipline banks' behavior toward risk. Under this view, depositors are believed to be uninformed and hence unable to discipline banks. History, however, reveals a much different view of the uninsured depositor, one that shows that market discipline can be an effective regulator of bank risk.

Evidence from the free banking period (from 1837 to 1863) dispels the view that the public was ignorant of how banks invested funds. The liabilities of free banks were bank notes that, like checks today, served as a medium of exchange within the local area. Holders of free bank notes, like uninsured depositors, faced the risk that the value of a free bank's assets might not be sufficient to redeem its notes in lawful money. How informed any particular noteholder was, of course, is difficult to know. What is known is that information on individual banks and the riskiness of the investments and loans was readily available. In Minnesota's free banking years (from 1858 to 1863), for example, the

public was regularly informed by local newspapers about the quality of the bonds that Minnesota free banks used to back their notes.[4] Local newspapers also ran articles on each bank, including facts about the character of the bank officers and the nature of their nonbank businesses within the state. In most of the major cities in the United States, newspapers known as *bank note reporters* became very popular. These papers gave the most recent discounts for bank notes traded in the major money centers around the country. They also listed banks whose notes had been counterfeited, banks whose notes were no longer trading at par, and banks that had closed. Well before Congress decided the federal government should protect holders of bank liabilities, the private market found ways to inform the public and help them to assess the riskiness of bank liabilities.

Another example of private markets revealing information about the riskiness of banks can be found in the 1920s. A study of interest rates paid by state-chartered banks in New York City (Rolnick 1987) shows that banks with the riskier portfolios, other things equal, paid the higher deposit rates. The public did not have to be very sophisticated to distinguish between high-risk and low-risk banks; if depositors wanted relative safety, they just had to find the banks that offered the lower deposit rates. And, on average, they would have been correct: A greater percentage of the high-risk banks failed during the Great Depression. This is no different from the way the bond markets work today. The public can readily distinguish between a junk bond and a safe bond by its price; that is, higher-risk bonds sell at a lower price and at an expected higher rate of return than lower-risk bonds. And studies of financial markets consistently find a close positive correlation between risk and return.

The public's ability to discipline bank behavior toward risk goes beyond requiring risk-adjusted deposit rates. Given the nature of many deposit accounts, the public can withdraw funds from a bank on very short notice. While bank runs generally have a bad reputation in the banking literature, they surely act as powerful incentives to prevent banks from taking on too much risk.[5] Just knowing depositors have the ability to withdraw their funds on short notice creates an incentive for banks to invest in relatively safe and liquid assets. The question of how much risk a bank should incur (a question I would argue regulators cannot answer) is answered by the interaction between the bank's desire to make a profit and its depositors' willingness to trade safety for return.

Finally, evidence under the limited deposit insurance system in effect prior to the 1980s suggests that with at least some uninsured

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[4] Banks that backed their notes with railroad bonds were known in the press as the *railroad banks*. Pictures of railroads actually appeared on some of the notes of these banks.

[5] See Kaufman (1988) and Calomiris and Kahn (1991) for the exceptions.

depositors, banks were much safer than they were after Congress and regulators adopted 100 percent insurance. One has to be somewhat cautious about making this argument, though, because other factors may have caused this outcome. For example, the public may always have thought that big banks were too big to fail. Or regulations that had the effect of limiting bank competition and creating monopoly rents could also have served to constrain moral hazard (Keeley 1990).

The issue, then, is not whether the market can discipline bank behavior, for surely it can. The issue is how willing policymakers are to trade off one problem, moral hazard, for another, banking panics. Once the system moves credibly away from 100 percent deposit insurance coverage, it introduces the possibility of bank runs and therefore some probability of a banking panic. I have argued that the cost of moral hazard substantially exceeds the estimated direct costs of the banking problems in the 1930s. This is at least one argument in favor of introducing some market discipline. Another argument is that the Federal Reserve System is much better prepared today to contain banking panics than it was in the 1930s.

Ultimately, therefore, the issue turns into two questions: How should market discipline be introduced? How much of that discipline is optimal?

Coinsurance Is a Good Choice

The deposit insurance system can be reformed in several ways to reintroduce market discipline. A serious obstacle to effective reform, a dilemma known as *time inconsistency*, led Boyd and Rolnick (1989) to recommend coinsurance.[6]

I favor coinsurance over enforcement of the explicit insurance limits in place today because it is a more credible policy. The limited success of the commitment to have large depositors take large losses is symptomatic of the time inconsistency dilemma: A policy that is best for the long run may not be best for the short run and vice versa (Boyd and Rolnick 1989, p. 12):

> Consider the dilemma as it arises with deposit insurance. Once a bank is on the verge of failing, it often appears that the best policy is to protect all depositors, both insured and uninsured. The FDIC can protect all depositors by arranging the purchase and assumption of a troubled bank by a healthy one. For decades this approach was often used because it minimized the FDIC's cost of handling a failing bank. This was the low-cost method, at least partly because in a purchase and assumption transaction the charter value is

[6] See also Kydland and Prescott (1977).

captured by the FDIC. This approach (or publicly announcing that all depositors will be protected) has the additional advantage that actual or potential bank runs are halted, allowing the reorganization to proceed in an orderly manner.

While such policies may indeed minimize the cost of any particular bank closure, they do not necessarily represent the best long-run policy. That's because the uninsured depositors will learn over time that, whatever is the announced policy, their deposits are actually safe. When that happens, "uninsured depositors" no longer care about bank risk and market discipline is lost. Consequently, there are more bank failures than there would have been, had uninsured depositors not been protected.

Any attempt to reintroduce market discipline, therefore, must be *time consistent*. That is, a credible commitment must be made that uninsured depositors will not be protected by the FDIC or any other government agency, even uninsured depositors at large banks.

Coinsurance is a system in which depositors' coverage is some fixed percentage of their deposits. For example, depositors could be insured for up to 80 percent of their deposits. Then, if their bank should fail, depositors could lose up to 20 percent of their funds. Depositors would have a stake in how their bank invests its assets. To be competitive with banks that hold safe portfolios, banks that hold risky ones would have to offer their depositors a higher rate of return. Assuming depositors are risk averse, hold a nontrivial portion of their wealth in bank deposits, and cannot hedge this risk, coinsurance would help contain moral hazard. No longer would banks—representing the preferences of both owners and depositors—have an incentive to invest in the most risky portfolio.

With coinsurance, as opposed to the current $100,000 insured maximum, such a commitment can be made credible because the losses to any one depositor, including other banks, would be limited to some fraction of their deposits. Losses at failing large banks, for example, would be spread across all depositors, and any depositor's loss would be bounded by the coinsurance percentage. The probability of large bank failures causing widespread bank runs throughout the banking system would, therefore, be less than if all uninsured deposits beyond some fixed limit were at risk; thus, little rationale would remain for protecting uninsured depositors.

One last issue needs to be addressed. How much coinsurance is optimal? I do not pretend to know the answer to this question, but an advantage to using coinsurance to introduce market discipline is that it can be phased in. Regulators can observe the risk premium that develops in the market for bank deposits as the coinsured limit is decreased and pick the risk premium they judge to be appropriate against other market measures of risk.

Conclusion

The lessons from the financial debacle of the 1980s seem clear. The moral hazard problem created by 100 percent deposit insurance is not just a theory; it has had costly, real world consequences. Our policy of relying solely on regulators to manage this problem has been a mistake.

The arguments for introducing some market discipline are compelling. While this could be done in different ways, coinsurance is the way most likely to succeed.

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