A Guide to Deposit Insurance Reform

By Antoine Martin

Deposit insurance was introduced in the United States during the Great Depression primarily to promote financial stability. Stability is enhanced because deposit insurance reduces the likelihood of a bank run. During its first four decades, deposit insurance appeared to work well as few banks failed. But in the 1980s, a wave of financial troubles in the banking and thrift industry exposed an unfortunate side of deposit insurance—moral hazard. In other words, deposit insurance encouraged undercapitalized depository institutions to take excessive risk.

The crisis in the 1980s was most acute for thrifts because they were functioning with very little capital. A large number of thrifts failed depleting the insurance fund and necessitating a taxpayer bailout. The bank insurance fund was severely reduced as a result of bank failures. Extensive reforms in 1991 were designed to prevent a recurrence of such problems. The Federal Deposit Insurance Corporation Improvement Act, or FDICIA, focuses on preventing moral hazard, which many observers claim was a major cause of the crisis.

Today's banking system is not in crisis. In fact, most banks are doing well. Still, both houses of Congress are debating new ways to reform deposit insurance. The view of many in the banking industry is that cur-

Antoine Martin is an economist at the Federal Reserve Bank of Kansas City. This article is on the bank's website at ***www.kc.frb.org****.*

rently deposit insurance has a number of flaws. For example, FDICIA was designed to introduce risk-based premiums for deposit insurance, but in practice most banks have not paid any premiums since 1996. Another problem is that, under the current system, premiums can swing sharply, which creates uncertainty for banks. Premium swings have become a concern recently as several factors have led the fund to shrink so that, for the first time in several years, most banks may have to pay premiums.

While there is wide agreement, at least in principle, on some of the above issues, other issues are more open to debate. One such issue concerns the amount of coverage, which has not changed in nominal terms since 1980 and which is half of what it was in 1980 in real terms. This situation leads some to believe that the amount of coverage should be increased to compensate, at least partly, for what has been lost to inflation. Those who believe that moral hazard is a big problem, however, oppose an increase in coverage, hoping that inflation will continue to erode the real value of the coverage and thus reduce moral hazard to a level they find acceptable.

This article provides a guide to key issues in the current deposit insurance debate. The first section gives a brief history of deposit insurance, exploring the roots of the problems that concern the industry today. The second section provides an overview of the current reform proposals as they relate to three issues: the size of the fund, the structure of insurance premiums and rebates, and insurance coverage.

I. DEPOSIT INSURANCE IN THE UNITED STATES

To understand the current reform proposals it is useful to know how deposit insurance works. The Federal Deposit Insurance Corporation (FDIC) provides a guarantee to depositors that they will not lose their funds up to a certain limit in case of bank failure. This assurance reduces the likelihood of bank runs. Unfortunately, deposit insurance can also lead to excessive risk taking by banks and thrifts, as happened in the 1980s. The current design of deposit insurance tries to balance the benefits of financial stability with the risks created by the moral hazard problem.

Deposit insurance promotes financial stability but can create moral hazard

Deposit insurance was designed to prevent banks runs, or panics. Bank runs arise when too many depositors decide to withdraw their funds at the same time. A bank cannot service all of its depositors at one time because it typically has very liquid liabilities, such as deposits—but illiquid assets, such as loans and mortgages. This liquidity imbalance is usually not a problem, since large numbers of depositors rarely need to withdraw all their funds at the same time. But if too many depositors worry that their funds are not safe because other depositors are withdrawing their funds, the fear of panic becomes a self-fulfilling prophecy. The result is a bank run.

Economists call such situations coordination failures, because panics could be avoided if depositors were able to coordinate their actions. From the perspective of an individual depositor, withdrawing early is rational because the bank will be short of funds if it is run. Yet the bank can fail unnecessarily. It may have been able to service all depositors if they had been patient.

Deposit insurance offers depositors a guarantee that their insured funds are safe. This guarantee promotes financial stability because it takes away the fear of the panic, which is the root of bank runs. Unfortunately, this guarantee also promotes moral hazard. Moral hazard refers to excessive risk taking by individuals or institutions facing small potential losses and large potential gains. The owners of a bank with low capital have incentives to take high risks because they have little to lose when their investments fail and much to gain when they succeed. Indeed, limited liabilities mean that the most they can lose is their capital while all the profits accrue to them.[1]

Without deposit insurance depositors would have a strong incentive to monitor bank's behavior because their funds would be at risk. Depositors might ask riskier banks for higher interest rates, or they might move their funds from riskier banks to safer banks. Thus, absent deposit insurance, the risk taking behavior of banks can potentially be kept in check. By contrast, depositors whose funds are insured have no

stake in the financial health of their bank. In that way, deposit insurance weakens market discipline and may actually promote risk taking by an undercapitalized bank.

Two approaches to reduce the moral hazard problem are regulation and supervision. Regulators can use capital requirements to limit a bank's incentives to take risks. If banks hold more capital, owners have more to lose in case of failure. Supervisors monitor a bank's portfolio to assess its risk characteristics. These two approaches go hand in hand to minimize moral hazard. Information obtained through the supervision process is used by regulators for the purpose of enforcing capital requirements. A third approach is to charge premiums based on the risk imposed on the insurance fund. If risk could be measured adequately, risk-based premiums would discourage excessive risk taking.

A successful deposit insurance mechanism must balance the benefits of financial stability and the costs of moral hazard. Reforms to deposit insurance tried to mitigate moral hazard when it became an obvious problem in the 1980s. The reforms currently being debated are still trying to get the balance right.

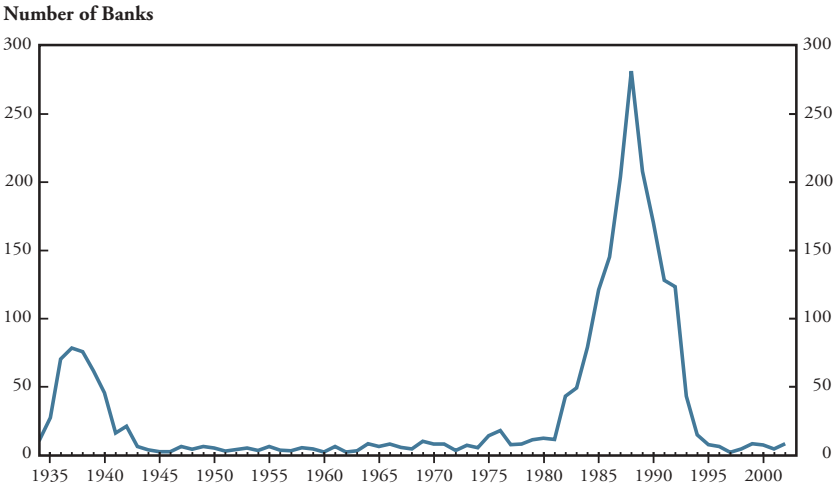
Deposit insurance from its origin to the 1980s crisis

Deposit insurance was adopted in 1933 in response to the many bank suspensions since the beginning of the Great Depression.[2] Whereas an average of about 600 banks were suspended every year from 1921 to 1929, that average climbed to over 2,250 from 1930 to 1934, with 4,000 suspensions in 1933 alone.

When deposit insurance became effective in 1934, it contributed to a substantial decrease in the number of bank failures. From 1934 to 1941 the number of bank failures handled by the newly created FDIC fell to 370, a little over 50 banks a year. In the 40 years from 1940 to 1979, on average only seven banks failed every year (Chart 1).

Until the 1980s, deposit insurance functioned very well. While there was no apparent need for major changes, deposit insurance underwent some modifications. One important change was an increase in the FDIC's use of purchase and assumption (P&A) transactions as a way of resolving banks.[3] As indicated in the FDIC's resolution handbook: "A P&A is a resolution transaction in which a healthy institution *purchases*

Chart 1
INSURED BANK FAILURES



Source: FDIC

some or all of the assets of a failed bank or thrift and *assumes* some or all of the liabilities, including all insured deposits." In the 1960s and 1970s most failing banks were resolved through P&A, implicitly extending coverage to uninsured deposits.

The statutory coverage level was also increased in nominal terms six times, from $2,500 in 1934 to $100,000 in 1980. In real terms, the coverage in 1980 was about three times as high as in 1934, but inflation since 1980 has eroded its value. It is currently a little less than half of what it was in 1980.

The number of bank and thrift failures increased dramatically in the early 1980s and remained high for about a decade. From 1983 to 1992, on average almost 150 banks and 120 thrifts closed every year, with 280 bank failures in 1988 and 327 thrift failures in 1989. Although there were many factors contributing to the failures, it is generally agreed that moral hazard played an important role.

If moral hazard is partly to blame for the 1980s crisis, why did it take over 45 years to manifest itself? Several factors exacerbated the problem: increased competition, high inflation, and ill-conceived deregulation.

Some analysts have argued that the rise of nonbank financial institutions, such as pension and mutual funds, increased the competition for individual investors' funds (Edwards; Sellon). This trend started as early as the second half of the 1950s. By making depository institutions compete for funds, the rise of nonblank financial institution could have contributed to the severity of the 1980s crisis.

In addition, high inflation in the 1970s pushed interest rates above the maximum rates that banks and thrifts were allowed to offer their depositors. Because banking regulation prevented interest rates on deposits from increasing, these institutions found it difficult to attract funds. To help thrifts compete for funds, regulatory reforms allowed thrifts to issue new types of instruments, and interest rate ceilings were gradually phased out.[4]

These changes, however, did not solve the problem. Thrifts were now paying higher interest rates to obtain funds than they were getting on their assets, which were almost exclusively one-family home mortgages. This profit squeeze drained capital from the industry. Also, the market value of the long-term assets held by thrifts dropped substantially in the 1980s when interest rates increased, leaving much of the industry insolvent on a market value basis.

Deregulation in the first half of the 1980s was intended to enable the thrift industry to recover on its own from these problems. Thrifts were authorized to make commercial real estate and commercial loans. Thus, institutions with virtually no capital were able to invest in risky ventures in which they had very little expertise. Taking such risks made sense for these owners who had little at stake. Moreover, depositors had no incentives to monitor these thrifts' behavior because the deposits used to make these investments were insured. Some have argued that the lack of adequate supervision meant that nothing was done to keep this risk taking behavior in check.

The thrift crisis became so severe that a taxpayer bailout was necessary. The cost to the taxpayers and the thrift industry was estimated to be over $150 billion. Most of the cost, $120 billion, was borne by the taxpayer (Curry and Shibut).

Banks fared better but were hit hard nonetheless. The banking industry was also suffering from increased competition for deposits. Competition between banks and thrifts increased with the introduction

of Negotiable Order of Withdrawal (NOW) accounts for thrifts.[5] Large brokerage firms also started to compete by offering money market mutual funds. These funds were extremely successful. From 1977 to 1981, NOW accounts grew from $5 billion to $78.5 billion, and money market mutual funds grew from $3.8 billion to $188 billion. In contrast, demand deposits at banks stayed essentially flat over the same period, falling from $247 billion to $243 billion.

Competition increased on the assets side of banks' balance sheets as well. Foreign commercial banks started to compete with domestic banks in the U.S. commercial loan market. Some large corporations began to raise funds directly from the commercial paper market rather than through banks. Finally, auto manufacturers and other nonfinancial firms expanded their activities in the market for consumer loans.

The increasing competition decreased the charter value of banks.[6] Declining charter value can make the moral hazard problem greater because owners have less at stake in their investment. Moral hazard appears to have become a greater problem in the 1980s because increasingly banks whose charter value was below average were more likely to take higher risk (Keeley).

Banks also suffered from a series of shocks in the 1980s. Small regional banks were hurt by bubbles in energy and agricultural land prices. Some large banks held significant amounts of debt from lesser developed countries in the early 1980s. These loans lost most of their values in 1982 as Mexico and about 40 other countries defaulted. Shocks such as these led to many bank failures. They also contributed to a decrease in bank capital, which set the stage for greater incentives to take risks.

The banking industry overall was not affected as much as thrifts, and taxpayers' funds were not needed to replenish the Bank Insurance Fund (BIF). The FDIC's estimate of its own cost from the banking crisis is about $30 billion. Nevertheless, the failure of a large number of banks and thrifts had several other costs that were harder to quantify. In particular, the cost of misdirected resources in banks and thrifts lending was probably much higher than FDIC and taxpayer losses.

The Federal Deposit Insurance Corporation Improvement Act

Congress passed FDICIA in 1991 in response to the crisis in the banking and thrift industry. FDICIA's three main goals were to recapitalize the insurance fund, enforce capital requirements more strictly, and introduce risk-based premiums.

Under FDICIA, the FDIC was required to recapitalize the BIF and the newly created Savings Association Insurance Fund (SAIF). Both funds introduced a minimum assessment rate of 23 basis points (23 cents for $100 of insured deposits) for all insured institutions. This rate was required to be in effect as long as the ratio of reserves to estimated insured deposits was below a designated reserve ratio (DRR) of 1.25 percent. Once the fund reached that threshold, the minimum assessment rate became $2,000. This minimum assessment rate was reduced to zero by Congress in 1996.

FDICIA introduced several measures to minimize the impact of bank failures on the insurance fund. The primary measures were prompt corrective action (PCA) and least-cost resolution (LCR). PCA provisions provide guidelines to limit the actions of banks with a low capital-to-assets ratio. Critically undercapitalized banks (banks with capital-to-assets ratios below 2 percent) can be considered insolvent and resolved. In principle, this provision should guarantee that the deposit insurance fund is never needed. In practice, however, it can be difficult to determine the value of certain assets, and this value can fluctuate. Consequently, banks cannot always be closed without cost to the fund. PCA also provides incentives for banks to hold enough capital and limits their ability to take excessive risk when they have little capital, precisely when they are most likely to take excessive risk.

LCR stipulates that failed banks should be resolved in the least expensive way from the perspective of the insurance fund. The objective of LCR is to limit the discretion of the FDIC in resolving banks through purchase and assumption transactions. Since resolutions through P&A transactions have often meant that the FDIC did absorb some or all of the losses of uninsured depositors, LCR has been a way of protecting tax-payers' money by limiting the cost of failure on the insurance fund.

The idea behind risk-based premiums is to make depository institutions pay for the risk they take. If insured institutions paid the same amount for insurance regardless of the risk they take, they would have an incentive to take on more risk. Indeed, riskier banks would receive a subsidy for using more "insurance services," in expected terms, than less risky banks. In theory, premiums that reflect the amount of risk being insured eliminate this incentive.

If the risk characteristics of the assets held by these institutions were perfectly observable, charging risked-based premiums would completely eliminate moral hazard. In practice, however, measuring risk is difficult. Consequently, the effectiveness of risk-based premiums could be limited.

The U.S. banking system since FDICIA

The recovery of the U.S. banking system in the early 1990s was remarkable. The number of bank failures declined from 280 in 1988, to 127 in 1991, 41 in 1993, and finally just five in 1996. This improvement was due not only to the better health of the existing banks, but also to the disappearance of many of the weakest institutions.

When compared with the banking sector, the recovery of the thrift industry was slower, and the improvement was due to a large extent to the disappearance of failed institutions. From 1989 to 1995, the number of institutions regulated by the Office of Thrift Supervision declined more than 50 percent (Benston and Kaufman).[7]

Both regulatory and economic factors contributed to the recovery. On the regulatory side, FDICIA helped resolve weak institutions and gave surviving institutions incentives to increase their capital ratios to avoid sanctions under PCA. A strengthening economy and low rates of inflation also helped banks and thrifts recover. The yield curve became steeper, which is favorable for depository institutions since they typically lend long term but pay short-term rates.

A consequence of the recovery was the rapid growth in the Bank Insurance Fund. The ratio of reserves to estimated insured deposits reached 1.25 percent in 1995 and the minimum assessment rate was dropped to zero in 1996. Since then, most banks have not paid insurance premiums.[8] Today, close to 95 percent of banks are exempt from paying premiums.

In 1995, the Savings Association Insurance Fund was still far from being recapitalized. Thrifts thus had to continue paying premiums while most banks did not. To prevent a shift from SAIF-insured deposits to BIF-insured deposits, a special assessment was made in 1996 to recapitalize the SAIF fund.[9]

Two types of bank and thrifts institutions have benefited disproportionately from no longer having to pay premiums—those whose insured deposits have grown faster than average and those that were created after 1996. New institutions receive all the benefits of deposit insurance without ever having paid premiums.

Recently, several factors have contributed to a decline in the ratio of reserves to estimated insured deposits. A number of bank failures have caused significant losses to the bank insurance fund. Several banks have had costly failures, implying losses for the fund estimated at 25 to 75 percent of the banks' assets (Kaufman). In 2001, Superior Bank FSB failed, costing the FDIC $500 million. Eight banks failed in 2002, twice as many as last year. Another factor is the substantial increase in 2001 of the reserves the FDIC keeps in anticipation of future failures. A third factor is the increase in insured deposits due to the conversion of Cash Management Accounts into deposit accounts by Merrill Lynch and other securities firms.

These factors have contributed to lowering the ratio of reserves to estimated insured deposits very close to 1.25 percent for the first time in several years. This could lead the FDIC to assess premiums on all banks again. These events have also brought attention to the fact that under FDICIA premiums can fluctuate widely and, risk being highest in bad times, premiums must be paid precisely when it is most difficult for banks to pay them.

FDICIA helped the banking sector get out of the very difficult situation it was in at the beginning of the 1990s. However, it has become apparent that some improvements can be made. The next section discusses the main reforms currently being proposed and how they are trying to improve on what FDICIA has already done.

II. KEY ISSUES IN DEPOSIT INSURANCE REFORM

Over the past several years, a number of deposit insurance reform proposals have been made. In 2000, the FDIC published an options paper laying out the main ideas. In 2001, economists Alan S. Blinder and Robert F. Wescott submitted a report on deposit insurance reform to the FDIC. Later that same year, the FDIC issued detailed recommendations for reform. Many elements of these documents were incorporated in legislation that passed the House in 2002 (H.R. 3717) and are expected to be debated by the Senate. While some of these issues are controversial, there is broad agreement on others. This article focuses on the heart of current discussions: What is the right size for the fund? How should premiums and rebates be set? What is the right coverage level and should it be indexed to inflation?

The size of the fund

Two issues concern the size of the fund.[10] First, what is the optimal size? Second, should the Bank Insurance Fund and the Savings Association Insurance Fund be merged?

The fund is basically an accounting device. Premiums paid by banks and thrifts to the FDIC are remitted to the U.S. Treasury. Hence, the fund keeps track of what has been paid in and, of course, what has been taken out. As long as the fund is not depleted, the banking sector as a whole has paid more to the FDIC than was paid to depositors.

But deposit insurance is not limited by the size of the fund. If the fund were to be depleted, general tax revenues would be used to pay depositors of failed banks, as happened with the thrift fund after the 1980s crisis. Thus, the size of the fund is a measure of the resources that the FDIC can access without relying on Congress to appropriate general tax revenues (Eisenbeis and Wall).

The fund increases with premiums paid and decreases when the assets of a failed bank cannot repay all of the bank's insured depositors. Also, the government debt that is held by the FDIC pays interest that accrues to the fund. Another source of fluctuation in the value of the

fund comes from the fact that this debt is marked to market. In other words, as the market value of the securities in the fund change, the measured value of the fund changes as well.

Two main benefits arise from having a high ratio of reserves to deposits in the fund. First, a high ratio protects the taxpayers' money. Second, the FDIC can resolve problem banks in a timely manner. There is evidence that during the 1980s crisis regulators were unable to deal properly with a number of insolvent thrifts because the thrift fund was depleted. These insolvent institutions were allowed to continue to operate and ended up taking excessive risks in an attempt to avoid bankruptcy. This behavior raised the final cost of resolving these institutions (FDIC 1997).

While maintaining an insurance fund large enough to handle emergencies is desirable, it is important not to maintain too large a fund. A large fund is more costly for banks and thrifts, which indirectly hurts depositors. Premiums affect insured institutions the same as a tax on deposits and thus alters banks' behavior. In particular, large premiums reduce the incentives to obtain funds through deposits. Some of these costs are ultimately paid by depositors and by borrowers, through an increase in the cost for banking services, a decrease in the quality of these services, a lower interest rate paid on deposited funds, or higher interest rates on loans. Also, financial institutions that do not obtain their funds through deposits do not have to pay premiums. Hence, the larger premiums needed to finance a larger fund affect the competitive balance between different types of financial institutions.[11]

In practice these costs and benefits are difficult to measure. For example, estimating the benefit of a larger fund to taxpayers requires knowing the probability that a fund of a given size will be depleted. There are no precise estimates of this probability. Similarly, it is hard to anticipate the behavior of institutions that cannot be closed in a timely manner because the fund is exhausted.

Despite the difficulty in estimating the correct size of the fund, there is wide agreement that the current Designated Reserve Ratio (DRR) is not too far off the mark. One recent study considered some simulations based on the idea of "minimum optimal fund size" proposed by Robert Merton (FDIC 2000). For reasonable values of annual deposit growth, premiums, and the risk-free rate, the study found a range of optimal

fund sizes which was close to the current DRR. Some analysts have noted that a DRR of 1.25 percent has worked well over the last ten years and, in the absence of compelling reasons to change that level, it might be wise not to deviate too far from the current DRR (Blinder and Wescott). For reasons that will be discussed below, some proposals have suggested that the fund should fluctuate within some bounds. These bounds are generally centered on, or close to, the current DRR.[12]

In addition to considering the size of the insurance fund, Congress is also considering a proposal to merge the funds for banks and thrifts. Important differences between these two types of institutions in the past have justified the existence of two separate funds. For example, until the early 1980s thrifts were limited to investments in a much narrower range of assets than banks. Deregulation has greatly reduced these differences. Today, over 800 institutions offer both BIF-insured and SAIF-insured accounts and more than 40 percent of SAIF-insured deposits are held by commercial banks.

A single fund could have been put in place when FDICIA was introduced. But such a change was impractical because the thrift industry was in a much more precarious situation than the banking industry. The cost of recapitalizing the SAIF was much bigger than for the BIF, and the move to a single fund would have represented a big subsidy to the thrift industry. Now that both the BIF and the SAIF have been recapitalized, a merger would be easier to implement. Currently the reserve ratio of the SAIF is somewhat higher than that of the BIF, but the difference, and thus the implied subsidy, is relatively small.

From an economic point of view, such a merger makes sense. A merger would spread the risk of default over a bigger pool of institutions, reducing the odds that the merged insurance fund might be exhausted. A combined fund would have a lower probability of insolvency than either of the funds separately (Oshinsky).

Another benefit from a merged fund would come from simplified administrative procedures. Currently, institutions that hold both BIF- and SAIF-insured deposits must keep track of these accounts separately, which is costly. Also, these accounts might be assessed differently, as BIF and SAIF premiums need not be the same. When this is the case, depository institutions have an incentive to spend resources arbitraging

the difference in assessment between the two funds. Although rational from the point of view of the depository institutions, such arbitrage is wasteful from the point of view of society.

The deposit insurance premium structure

Three issues concern the structure of the current system. First, premiums cannot play the incentive role they were designed to play under FDICIA because most banks do not currently pay premiums. Second, there is a fundamental conflict between setting the level of premiums and setting the size of the fund. To reach both targets jointly the system needs to be modified—for example, by including rebates. Third, the current system is procyclical. That is, premiums tend to be high when banks are doing poorly, exactly when it is most difficult for them to pay.

Premiums as an incentive to reduce risk. The objective of risk-based premiums is to reduce the moral hazard problem by making banks pay for the risk they impose on the insurance fund. FDICIA required the FDIC to introduce such premiums. The FDIC chose to separate institutions into nine different categories, or cells, depending on their capital ratio (groups 1, 2, and 3) and their supervisory subgroup (subgroups A, B, C). Cell 1A contains the highest-rated institutions, while cell 3C is formed of the worst-rated ones. Each cell can be assessed a different premium.

After the introduction of FDICIA, insured institutions were assessed between 23 and 31 cents per $100 of assessable deposits as long as the fund was below the DRR. The insurance fund grew much faster than anticipated, however, and the DRR was reached in 1995. Most banks were then charged the minimum allowable assessment which was $2,000. This minimum assessment was eliminated by Congress in 1996, and since then close to 95 percent of banks have paid no insurance premiums.

Industry analysts generally agree that risk-based premiums are desirable and that all banks should have to pay something for the benefits they receive from deposit insurance.[13] The proposed legislation would allow the FDIC to charge all banks a strictly positive premium regardless of capitalization of the fund.[14]

Premium level vs. fund size. If all banks paid positive premiums, it might be difficult to keep the fund from growing past its target, as the experience of the 1990s showed. Fundamentally, the problem is that the desired size of the fund may be incompatible with the desired level of the premiums. Choosing a given level of premiums induces a particular size for the fund, but there is no guarantee that the resulting size will be considered acceptable. Trying to set both the size of the fund and the premium is like trying to choose independently both the speed at which a given distance is to be traveled and the total time it takes to reach the destination. It cannot be done.

If one accepts that the size of the fund should be kept within a given range, then premiums can be chosen independently only if the system is modified.[15] There must be a way of refunding excess premiums when the fund reaches its limit. The FDIC is recommending that rebates be based on past contributions rather than on the current assessment base (FDIC 2001).

Rebates based on the current assessment base are not particularly desirable. This approach would reduce the cost of insurance and thus partly undo the incentives created by risk-based premiums. Instead, because past contributions are predetermined and thus cannot be modified, basing premiums on past contributions would preserve the incentive to avoid risk. Of course, forward-looking banks will realize that the cost of having to pay higher premiums today will be partially offset by higher rebates in the future. But the direct incentive effect of risk-based premiums is likely to be much bigger than the expected increase in rebates in the future, partly because a dollar is less valuable in the future than today. Additionally, future rebate amounts are uncertain as they would depend on the size of the fund, which can fluctuate unpredictably.

Also, basing rebates on past contributions helps make net premiums per deposits more similar across banks of different size. Banks with more insured deposits pay more gross premiums over time but also receive larger rebates, which will tend to equalize the net premiums across banks. Finally, designing rebates in that way would partly compensate banks that paid high premiums before 1996 compared to new banks that have been benefiting from free deposit insurance.[16]

There is, however, another way of setting rebates similar to the FDIC recommendation but that would distort incentives even less. Rebates could be based on past assessment bases, rather than on past contributions. Past contributions multiply the amount of deposit insured by the premiums so that if two banks insure the same amount of deposits but one bank is riskier that the other, the riskier bank will have larger future rebates. This has a negative impact on incentives. If, instead, rebates were based on the amount of past deposits insured, this negative incentive effect would disappear.

Procyclical premiums. Banks are naturally more likely to fail during a recession. When banks fail, the size of the insurance fund shrinks. To recapitalize the fund, assessment rates would have to rise. Thus, premiums are likely to be high at the end of a recession or early into a recovery, precisely when banks are least able to pay high premiums.

In the current system, the minimum assessment rate is zero when the ratio of reserves to deposits is above 1.25 percent. The rate jumps to 23 basis points if the ratio moves below that threshold and if the FDIC does not project that the fund will move back above the DRR within a year. With the minimum assessment rate moving from zero to 23 basis points, the current system is subject to wide swings in premiums.

One proposal to remedy both of these problems is to replace the DRR with a target range. The House bill proposes a lower bound of 1.15 percent and an upper bound of 1.4 percent. Higher premiums could be gradually assessed when the ratio of reserves to deposits moves toward the bottom of the range. When this ratio is close to or above the top of the range, rebates could increase to limit the growth of the fund. This would reduce the volatility of the premiums as they would be modified gradually. It would also delay the response to a decline in the size of the fund, making premiums less procyclical.

The coverage level

The House bill includes several items concerning the coverage level for institutions. The general coverage level would rise from $100,000 to $130,000. The coverage level for retirement accounts would rise from $100,000 to $260,000. Public depositors, such as state and local governments, would have insurance of 80 percent of their funds up to $2

million. Finally, the coverage limit would be indexed to inflation. The issue of coverage has attracted the most attention and the most controversy. In particular, the increased level of coverage is opposed by a number of people, including influential senators, Federal Reserve Chairman Alan Greenspan, and the Treasury Department (Greenspan; Fisher).

The following discussion explains why the level of coverage must balance the benefits of financial stability with the moral hazard problem. It then examines how the coverage level can affect competition between small and large banks.

Financial stability vs. moral hazard. Choosing the appropriate level of coverage presents a challenge for policymakers to strike a balance between promoting financial stability and avoiding moral hazard. On the one hand, financial stability requires adequate coverage. On the other hand, a higher coverage level reduces the incentives depositors have to monitor the behavior of depository institutions. Reduced incentives for depositors can lead to moral hazard which, in turn, requires additional supervision and regulation if it is to be kept in check.

Discussions on finding the right balance typically focus on the nominal amount of coverage. But what really matters is the *real* level of coverage, defined as the nominal coverage level adjusted for inflation. As mentioned previously, nominal coverage today is $100,000 and was last increased from $40,000 in 1980. The real amount of coverage has declined significantly since 1980 and is now half of what it was then. In fact, one argument for increasing the nominal coverage is to offset this erosion in the real level which, while reducing the moral hazard problem, may have increased the risk of bank runs. It is important to bear in mind, however, that the change in coverage from $40,000 to $100,000 at that time constituted a large increase in the real coverage level, which may have contributed to the 1980s crisis.

Finding the amount of coverage to balance financial stability and moral hazard is difficult because there is no measure that clearly indicates the stability or fragility of the financial system. Similarly, the extent of the moral hazard problem cannot be measured precisely, so the costs of such an increase are hard to predict.

Today, as in 1980, wide disagreement remains about the right coverage level. The disagreement focuses mainly on the extent of the moral hazard problem. Those who think that it is a big problem

oppose any increase in the coverage level. They can point to the experience of the 1980s, as well as to other empirical evidence, in favor of their view. One study showed that moral hazard was a problem in the 1980s because the risk taking behavior of banks increased when their charter value decreased (Keeley). Cross-country evidence also suggests that moral hazard can be a problem. The results of a study that considered deposit insurance schemes in a variety of counties indicated that a higher coverage level tends to make banking crises more likely (Demirguç-Kunt and Detragiache).

Nevertheless, not all industry analysts agree that moral hazard is a critical issue. Some would argue that excessive risk taking should only be a problem for institutions that do not hold enough capital. According to this view, incentives to hold capital are provided by PCA provisions so that moral hazard is not a serious concern given the existing institutional setting. When deposit insurance was introduced in Canada, for example, risk taking by banks did not appear to increase (Gueyie and Lai).

These disagreements underscore the difficulty of determining with precision the appropriate coverage level. To compound the problem, it is also difficult to know how the desired level of real coverage will evolve over time. As mentioned above, financial stability depends on the real amount of coverage being sufficient to cover the demand for deposits by households. If this demand changes, so should the coverage—but knowing how the demand for deposits evolves is difficult to predict.

The demand for deposits might increase over time if household wealth rises. As people become richer they tend to consume more and also to increase their savings. Some of these savings are likely to end up in depository institutions. Consider an extreme example: In a world where the ratio of wealth to income is constant, and people hold a fixed share of their wealth in bank deposits, the ratio of nominal deposits to nominal income would be constant. As this economy grows in real terms, so would household demand for deposits, again in real terms. Thus, in this example, it might be desirable to increase the level of real coverage over time.

There is, however, evidence that the ratio of deposits to wealth is not constant. Deposits are only one of many assets in household portfolios, and there is no reason to assume that the shares of these assets

will hold constant as wealth grows. For example, life cycle effects are likely to play a role in how assets are allocated. Typically, older people hold a larger fraction of safe assets than younger people.

Also, over the second half of last century, the portfolio allocation of households changed a lot due to financial innovation. Historical patterns show that the share of deposits in financial assets held by households has declined significantly in the last 20 years. It is conceivable that this decline reflects some kind of constraint on households and that, if coverage limits were increased, the share of deposits would increase as well. More likely, it is due to the emergence of attractive close substitutes for deposits, higher returns on other financial assets, and improving access by households to these assets. These factors should reduce households' demand for deposits. If this effect is strong enough, the current real amount of coverage might be appropriate despite being much smaller than it was 20 years ago.

The difficulty in determining the appropriate coverage level has important implications for indexing. Setting a rule that automatically adjusts the coverage level makes sense if there is a good index that will keep the actual coverage level close to its desired level. Lacking such an index, a rule could be worse than discretionary changes.

One can point to at least two problems with the House bill's plan to index coverage to inflation. First, the initial coverage level chosen must be just right for indexing to have a chance to work. Since there is wide uncertainty about what this level should be, it will be difficult to find the right amount. Furthermore, the level will be very hard to change once it is decided upon.

Second, there is no reason to believe that inflation is the right index. In the above example of an economy where the ratio of nominal deposits to nominal income (nominal GDP) is constant, coverage limits should grow faster than inflation. Indeed, they should be indexed to nominal GDP. Under such a scheme, the $100,000 coverage limit of 1980 would need to rise to about $300,000 in 2002 (Blinder and Wescott). On the other hand, historical patterns suggest that the demand for deposits from households has declined, in which case the nominal coverage should not grow as fast as inflation. In fact, if the demand for deposits decreases a lot, it might be appropriate to reduce the amount of coverage, even in nominal terms.

Another idea behind coverage limits is that while it might be inefficient for small, unsophisticated depositors to monitor their banks, this can be done effectively by more sophisticated depositors. These sophisticated depositors provide some market discipline, which complements the role of supervisors. It is difficult, however, to establish what the right coverage limit might be to separate sophisticated from unsophisticated depositors, or how it might evolve over time.[17]

Competitive balance between large and small banks. From the perspective of economic theory, the principal argument for increasing coverage is the risk of a decrease in financial stability if the coverage becomes too small. Surprisingly, few if any of the proponents of such an increase seem to invoke this argument. Instead, the main argument for an increase in coverage has to do with redistribution among banks.

It is often argued that the very biggest banks are "too big to fail." In other words, funds in larger banks are safe even if they are not explicitly insured because the failure of such banks could have a severe impact on the financial system. Thus, very large banks may be benefiting from an implicit subsidy. The subsidy arises because, everything else being equal, a household that wants to deposit an amount larger than the coverage limit will prefer to put these funds in a bank that is perceived to be too big to fail. Higher coverage limits reduce the subsidy since it is less likely that a given household will want to deposit funds in excess of the higher limit. For these reasons, small banks tend to be in favor of an increase in the coverage level because they would benefit more than big banks.

FDICIA tried to reduce the size of the implicit subsidy. In particular, the least-cost resolution provisions limit the ability of the FDIC to bail out uninsured depositors. Since the introduction of FDICIA, uninsured depositors of failed banks have not been protected by the FDIC. Of course, one cannot guarantee that in the future the FDIC will not be confronted to a situation requiring such a bailout. Thus, some implicit subsidy likely remains, although it is probably smaller than it used to be.

Concerns about competitive balance between big and small banks are also used to defend two other features of the House bill: setting the coverage for retirement accounts at $260,000 and the coverage for municipal accounts at $2 million. The increased coverage for retirement accounts seems to have been motivated at least partly by the conse-

quences of the Enron debacle. These accounts can become large and exceed the current coverage limit. In such a case, for the reasons mentioned above, it might be more desirable to place retirement accounts in a depository institution that is perceived to be too big to fail.

The argument in favor of increased coverage for municipal deposits is somewhat different. Municipalities handle large amounts of funds, most of which are not insured, and thus generally require banks to pledge low-risk securities to cover the funds that are not protected by the FDIC.[18] It appears that some of the smaller banks find it difficult to hold enough of these low-risk securities to attract municipal funds. A higher coverage limit would help these institutions since municipalities would presumably lower the amount of low-risk securities needed as collateral.

Even if one believes that such measures are desirable on their own, they have consequences for moral hazard since they increase the amount of coverage and thus reduce incentives for monitoring. The argument for increasing the coverage of municipal funds provides an excellent illustration of how deposit insurance creates moral hazard.

If the coverage level for these deposits increases, municipalities would likely lower the amount of collateral they required. Low-risk securities would be replaced in a bank's portfolio by loans, or other riskier assets. This change would make a bank's portfolio riskier and the probability of failure higher. Hence, the decrease in incentives to monitor banks would lead to an increase in risk taking by these institutions.

Nevertheless, these measures seem to have only limited benefits for financial stability. In addition, higher coverage requires a larger fund, higher premiums, and more supervision and regulation, all of which are costly to both large and small banks. Moreover, even if small banks are at a disadvantage, changing the coverage levels might not be the best way of dealing with the problem (Vaughan and Wheeloch). If the competitive balance in the banking industry needs to be altered, there may be policies that can achieve that goal without the risk of increasing moral hazard.[19]

III. SUMMARY AND CONCLUSIONS

This article has provided a guide to the current debate over deposit insurance reform. Deposit insurance was introduced in the United States in 1933 to promote financial stability. It seemed a great success at first, as banks and thrifts experienced over 40 years of stable growth. Unfortunately, the crisis of the 1980s showed that deposit insurance has the unfortunate side effect of creating moral hazard—that is, it gives depository institutions incentives for excessive risk taking. As a response to the 1980s crisis, FDICIA tried to improve deposit insurance by limiting the moral hazard problem while preserving the benefits of financial stability. The reforms under discussion today try to improve the current system by trying to find a better balance between these costs and benefits.

Some of the issues are uncontroversial and fairly easy to implement. There is wide agreement that the BIF and the SAIF should be merged, and that premiums should be made less procyclical. Few people are opposed to the idea that the size of the fund should be kept within a given range and that rebates are needed to refund excess premiums when the fund reaches its limit.

Risk-based premiums are not controversial in principle, but their application is challenging. Many analysts believe that such premiums are a good idea, but because risk is hard to measure, designing such premiums could be difficult. Considerable controversy arises from the discussion about coverage limits and their indexation. Arguments are made in terms of economic efficiency and also in terms of competitive balance between large and small banks.

Lawmakers are currently debating the proposals for deposit insurance reform. They must weigh the benefits of deposit insurance—financial stability—against the cost of moral hazard. The magnitude of past problems in the banking system should remind us how important it is to find the right balance.

ENDNOTES

[1] In case of bankruptcy, the liability of bank owners is limited to their investment. In particular, their personal wealth may not be seized.

[2] Suspensions include failed banks as well as banks that suspended operations temporarily but resumed their activities when conditions became more favorable.

[3] There are several ways a bank can be resolved, which include purchase and assumption transactions, assisted mergers, among others. The bank can also be closed.

[4] Note that the significance of raising coverage limits on deposit insurance to $100,000 in 1980 was that CDs of $100,000 or more had no interest ceilings. This allowed brokers to offer fully insured thrift CDs at market rates.

[5] In 1972, two New England states permitted their mutual savings banks to offer NOW accounts. Other states followed suit. Banks gained NOW account authority in 1980 under the Monetary Control Act.

[6] The charter value of a bank is defined to be the difference between its market value and the net value of its assets. One way of estimating charter value is to compare a bank's book value with its market value, since charter value is included in the latter, but not the former. Studying the 25 largest bank holding companies from 1952 to 1987 shows that market value exceeded book value until the early 1970s, but then started to decrease (Boyd and Rolnick). By the end of the 1970s, book value had become greater than market value and remained greater through the end of the study period.

[7] Thrifts were also negatively affected by the growth of the secondary market in mortgage lending.

[8] Well-capitalized banks with CAMELS ratings of 1 and 2 do not pay premiums.

[9] Congress passed the Deposit Insurance Fund Act of 1996, which called for a special assessment on all deposits in the SAIF in order to fully recapitalize the fund. This assessment turned out to be set at 65.7 basis points.

[10] Strictly speaking, there are two funds, one for the banking industry and one for the thrift industry. However, the key economic issues concerning these funds are similar.

[11] In theory, the optimal size of the fund is reached when the marginal benefit and marginal cost to society of an additional dollar in the fund are equal. The marginal benefit of each additional dollar in the fund decreases because it becomes less and less likely that a crisis can exhaust the fund as it becomes larger. The marginal cost of each additional dollar in the fund probably increases as the behavior of depository institutions is distorted by the need to pay higher premiums.

[12] Some alternative views are expressed on this topic. Some analysts think that the DRR should be increased to at least 1.5 percent and that there should be no limits on the overall size of the fund (Thomas). Others think that the fund should simply be eliminated, since it is only an accounting device. Premiums could be set to reflect risks imposed on the fund and, the fund having disappeared, its size would implicitly not be limited (Feldman).

[13] While in principle risk-based premiums are very appealing, they raise many difficult questions. One big problem with such premiums is that they depend on appropriately measuring the risk of banks' portfolios, which is hard to do. If risks are not measured well, the premiums might not be set in the right way.

A separate point is that risk-based premiums are less effective if risk is not measured well. Some ways to improve the incentive effects of risk-based premiums have been suggested. For example, more elaborate price schedules, including state contingent payments, can help prevent moral hazard even when the risks taken by banks are difficult to assess (Prescott). However, such schemes do not appear to be considered by the FDIC.

It should also be noted that regulators already penalize bank risk taking through risk-based capital, PCA and other enforcement actions, early closures, and other similar measures. If such methods were fully effective, it is not clear that risk based premiums would be needed at all. If they are not effective—again because risk is hard to measure—then it is not obvious what benefits risk-based premiums will have.

[14] However, the highest premium for the best-rated institutions would not exceed one basis point as long as the ratio of reserves to estimated insured deposits exceeds 1.15 percent.

[15] Choosing a size for the fund is one way to limit the negative consequences that could arise if the premiums were set too high or too low. If the premiums were set too high, they would have to be reduced once the maximum size was reached, thus reducing the burden on depository institutions. If instead the premiums were set too low, the fund would fail to grow fast enough, sending a signal to policymakers that the financial system was not benefiting from the protection it needs.

[16] Note that limiting the differences between net premiums paid by different banks is not a concern from the point of view of efficiency. This issue is one of fairness. Economists do not have much to contribute on the subject, but is seems to be an important constraint on the design of a system that must be chosen through a democratic process.

[17] It seems sensible to assume that if the demand for deposits increases, it might also be desirable to increase coverage limits that protect unsophisticated depositors, while it might be desirable to decrease the limits in the opposite case.

[18] Note that individual depositors cannot have their funds backed.

[19] In principle, it would be possible for regulators to treat large banks differently from small banks. For example, it has been argued that larger banks should be required to hold some subordinated debt. Because such debt is not insured, this would provide a market-based signal of the riskiness of those banks. Imposing tighter regulations on large banks in such ways might reduce the implicit subsidy, while at the same time promoting prudent, rather than risky, behavior.

REFERENCES

Blinder, Alan S., and Robert F. Wescott. 2001. "Reform of Deposit Insurance: A Report to the FDIC," March.

Benston, George J., and George G. Kaufman. 1997. "FDICIA After Five Years," *Journal of Economic Perspectives,* vol. 11, no. 3, pp. 139-58.

Boyd, John H., and Arthur J. Rolnick. 1988. "A Case for Reforming Federal Deposit Insurance," *Annual Report,* Federal Reserve Bank of Minneapolis, pp. 3-16.

Curry, Timothy, and Lynn Shibut. 2000. "The Cost of the Savings and Loan Crisis: Truth and Consequences," *FDIC Banking Review,* vol. 13, no.2, pp. 26-35.

Demirguç-Kunt, Asli, and Enrica Detragiache. 2002. "Does Deposit Insurance Increase Banking System Stability? An Empirical Investigation," *Journal of Monetary Economics,* vol. 49, issue 7, pp. *1373-1406.*

Edwards, Franklin R. 1996. *The New Finance.* Washington: AEI press.

Eisenbeis, Robert A., and Larry D. Wall. 2002. "Reforming Deposit Insurance and FDICIA," *Economic Review,* Federal Reserve Bank of Atlanta, First Quarter, pp. 1-15.

Federal Deposit Insurance Corporation. 2002. "Resolution Handbook."

_____. 2001. "Keeping the Promise: Recommendations for Deposit Insurance Reform," April.

_____. 2000. "Options Paper," August.

_____. 1997. "History of the Eighties—Lessons for the Future," December.

Feldman, Ron. 1998. "When Should the FDIC Act Like a Private Insurance Company?" *The Region,* Federal Reserve Bank of Minneapolis, September.

Fisher, Peter. 2002. Testimony on "Federal Deposit Insurance Reform," U.S. Senate Committee on Banking, Housing and Urban Affairs.

Greenspan, Alan. 2002. Testimony on "Federal Deposit Insurance Reform," U.S. Senate Committee on Banking, Housing and Urban Affairs.

Gueyie, Jean-Pierre, and Van Son Lai. Forthcoming. "Bank Moral Hazard and the Introduction of Official Deposit Insurance in Canada," *International Review of Economics and Finance.*

Kaufman, George G. 2001. Hearing on "The Failure of Superior Bank, FSB, Hinsdale, Illinois," U.S. Senate Committee on Banking, Housing, and Urban Affairs.

Keeley, Michael C. 1990. "Deposit Insurance, Risk, and Market Power in Banking," *American Economic Review,* vol. 80, no. 5, pp. 1183-99.

Oshinsky, Robert. 1999. "Merging the BIF and the SAIF: Would a Merger Improve the Funds' Viability?" FDIC working paper series 99-4.

Prescott, Edward S. 2002. "Can Risk-Based Deposit Insurance Premiums Control Moral Hazard?" *Economic Quarterly,* Federal Reserve Bank of Richmond, Spring, pp. 87-100.

Sellon, Gordon H. 1992. "Changes in Financial Intermediation: The Role of Pension and Mutual Funds," *Economic Review,* Federal Reserve Bank of Kansas City, Third Quarter, pp. 53-70.

Thomas, Kenneth H. 2001. Testimony on "Bank Depositors' Recommendations for Deposit Insurance Reform," U.S. House of Representative Subcommittee on Financial Institutions and Consumer Credit.

Vaughan, Mark D., and David C. Wheeloch. 2002. "Deposit Insurance Reform: Is It Deja Vu All Over Again?" *The Regional Economist*, Federal Reserve Bank of St. Louis, October, pp. 5-9.