FDIC

REFORM OF DEPOSIT INSURANCE
A REPORT TO THE FDIC

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PART I: THE DESIGN OF DEPOSIT INSURANCE: BASIC PRINCIPLES

When a system has been in place for a very long time, and has been successful, as is undoubtedly the case with federal deposit insurance in the United States, it is all too easy to lose sight of the basic principles that guide it--or should guide it. So before evaluating specific options for reforming deposit insurance, it is wise to begin with the basics: Why does the government provide deposit insurance? What is it trying to accomplish, and what basic principles should therefore guide its design?

Our answer can be stated quite briefly: The U.S. government is in the deposit insurance (henceforth, DI) business mainly to enhance macroeconomic and financial stability. But, in so doing, it should distort market incentives--other than the incentive to run on banks--as little as possible. DI contributes to stability principally by mitigating or preventing bank runs. As a side benefit, effective deposit insurance also protects small depositors from loss if their banks fail. But we would argue that protecting the small depositor is an incidental benefit, not the main social purpose of DI. After all, citizens face many risks from which their government does not feel obligated to protect them.

Let us now elaborate on these points in the form of seven principles that, we would argue, should guide any redesign of the deposit insurance system.

Principle 1: Deposit insurance should enhance macroeconomic and financial stability.

We begin with what is clearly the most important principle: First and foremost, DI should enhance, not reduce, macroeconomic and financial stability. That, after all, is the principal rationale for government involvement in the DI business in the first place. While this point may seem so obvious that it need not even be stated, the FDIC Options Paper points out (as we will note below) that the current implementation of the designated reserve ratio (DRR) may actually be procyclical.

History demonstrates the importance of this principle. Since the advent of federal deposit insurance in 1934, bank failures have become much less frequent, widespread banking panics have disappeared, and the U.S. macroeconomy has been more stable. There is no doubt some reverse causation here: A more stable economy has spawned a less volatile financial system, which led to fewer bank failures. But surely some of the causation has run from deposit insurance to greater macroeconomic stability. Thus, we would argue that the provision of deposit insurance creates a beneficial macroeconomic externality: The financial system and the macroeconomy are less volatile because of the existence of (virtually) universal deposit insurance.

Principle 2: Deposit insurance should prevent most bank runs

Slightly more specifically, DI is supposed to enhance stability by reducing the incidence and severity of bank runs, thereby (virtually) eliminating the banking and financial panics that occurred periodically prior to 1934. This goal actually comes in two parts. First, by guaranteeing depositors that they will not suffer losses even if their bank fails, DI reduces the incentive for a rational (insured) depositor to run on his or her bank [1]. Second, the existence of DI should reduce contagion. If a comprehensive system of DI is in place, you have little reason to run on your own bank even if you learn that your neighbor's bank has failed [2].

In principle, the sharp reduction in bank runs brought about by DI should reduce systemic risk. In practice, it appears to have done so. Even the rash of bank failures in the 1980s and early 1990s did not precipitate many bank runs. Banks failed because they were insolvent, not because they abruptly became illiquid in the midst of panicky runs.

Principle 3: Deposit insurance should be designed to minimize microeconomic distortions (other than the incentive to run).

Insurance can distort incentives, especially when it is not properly priced. In this context, it is important to remember that every insurance scheme creates some sort of "moral hazard." That is inevitable, and it is not by itself sufficient reason to declare the insurance dysfunctional or even inappropriate. But the DI system should be designed to minimize excessive risk taking, that is, additional risk taking induced by DI itself. Similarly, we do not want the DI system to favor one type of bank over another, nor one type of bank deposit over another, nor one type of risk-taking behavior over another. Instead, the DI system should be as neutral as possible. We want bankers, depositors, and borrowers to respond to market signals with minimal interference from the DI system.

This seemingly unexceptionable principle is, however, sometimes honored in the breach--as the Options Paper points out. For example, maintaining separate BIF and SAIF funds may favor one type of banking institution over another. As another example, DI premiums may distort risk taking if they do not accurately reflect risks.

Principle 4: A publicly-funded deposit insurance system should neither subsidize nor tax the banking system.

Deposit insurance is, in our view, best viewed as a cost of doing business--much like fire and theft insurance. As the Options Paper notes, the FDIC has been guided since its inception by the principle that this business should be conducted, insofar as possible, on a breakeven business. The government should neither tax the industry by charging too much for DI, nor subsidize it by charging too little. FDICIA certainly enforces this traditional view in a very strong way.

However, there is a valid reason--listed above under Principle 1--why the government might want to sell deposit insurance even at a net loss, rather than leave the activity in the private

sector. Specifically, we noted that there is a macroeconomic externality: The fact that Bank X has deposit insurance makes the economy less risky for Business Y. Positive externalities like that generally create a prima facie case for government subsidy [3]. Hence the case for Principle 4 is hardly airtight. For purposes of this paper, we will accept it as a working principle (see Principle 7 below), but we note that the externality can conceivably justify a subsidy.

Principle 5: Deposit insurance system should minimize the risk to the taxpayer.

In a publicly-run DI system, the government's general fund--that is to say, the taxpayer--tacitly serves as the ultimate reinsurer. So, for example, the taxpayer was presented with a multi-billion-dollar bill when FSLIC was overwhelmed by claims during the S&L; debacle. FDICIA changed all this-in principle, and probably also in practice--by requiring ex post assessments on the banks to recapitalize the insurance fund whenever it falls below 1.25% of deposits. On the surface, it appears that taxpayers should never be liable for insurance losses.

However, there remains the (remote) possibility of a tremendously adverse shock that not only overwhelms the insurance funds (which, together, now have about $40 billion), but also leaves the economy and the banking system so weak that it becomes unwise to burden the banks too heavily--the proverbial "100-year flood." So, in reality, the taxpayer probably bears some small residual risk. Indeed, it is not obvious to us that reducing the taxpayers' potential exposure all the way to zero is the appropriate goal of policy. In many other spheres (natural disasters, health, etc.), it is taken as axiomatic that the government will serve as the ultimate backstop. Furthermore, reducing taxpayer exposure to zero de facto (as opposed to de jure) is probably unrealistic in any case. As the present electricity crisis in California illustrates, if the problem is big enough, the taxpayer is ultimately on the hook. Finally, as we noted earlier, the macroeconomic externality can justify some taxpayer exposure in extreme cases.

Having said all this, we nonetheless accept the principle that the taxpayer should bear only minimal risk. For the most part, the risks inherent in banking should be borne by those who voluntarily enter into banking transactions.

Principle 6: Deposit insurance should relieve small depositors of the burden of monitoring their banks.

Some free-market economists have argued against government provision of DI on the grounds that depositors should monitor their banks and withdraw funds from unsafe institutions. They will do this job well, it is argued, if their own money is at stake.

Except for some extremely large and sophisticated players, we strongly disagree. First, information on the safety and soundness of banks has at least one key attribute of a public good: Its use by one depositor does not limit its use by others, so there is a case for public provision of monitoring services [4]. Second, effectively monitoring a bank requires financial, regulatory, and legal expertise that most individuals and businesses lack. Third, and related,

there are probably large economies of scale in the bank-monitoring business. The learning and set-up costs of monitoring one or two banks are way out of proportion to the benefits [5]. Fourth, some of the critical information needed to perform this task is proprietary, and thus available only to supervisory authorities, not to private market participants--some of whom may actually be competitors of the bank in question [6]. For all these reasons, we believe it is inappropriate for the government to insist that depositors assume the responsibility for monitoring their own banks. An effective scheme of government-provided deposit insurance relieves small depositors of this burden [7].

A key policy question here is, of course, "How small is small?" At present, account balances over $100,000 are not insured, and thus carry the responsibility for monitoring-at least in principle. Is that too high or too low a place to draw the line? We will return to this question later.

Principle 7: If it ain't broke, don't fix it.

Before delving into the details, we hasten to add one final, noneconomic principle. Economics is a mainly ahistorical discipline, but real societies and systems of government are not. History matters. Thus, we believe there is a crucial difference between designing an institution de novo and redesigning one that has been in operation for a long time--and has thereby become both familiar and trusted. While the status quo might not be entirely optimal in an economic sense, as long as it is operating well, the burden of proof should be on those who advocate radical change.

Deposit insurance is, in our minds, a prime example of such an institution. If we were establishing federal DI from scratch today, we might well design a different system from the one Congress established in 1934. In particular, it might well have a bigger role for private insurance. But, apart from the S&L; debacle in the 1980s, it is hard to see where and how federal deposit insurance has failed. And we would argue that even that one prominent "failure" had more to do with inadequate supervision and regulation of S&Ls; than with the existence (or even the terms) of the FSLIC [8]. Depositors all over America are accustomed to seeing the reassuring FDIC sign that guarantees them that their bank deposits are safe. Given the overwhelming importance of confidence in any banking system, this fact is not irrelevant; and it should not be tampered with lightly.

So we view the task at hand as redesigning and "tuning up" an old system that has performed well for over 65 years, but may need some improvement around the edges. In contrast with, e.g., Calomiris' (1998) view that FDIC insurance may be "the single most destabilizing influence in the financial system," we see no evidence that the system is so "broke" that it needs to be replaced by something entirely new and different. Our thinking is more in line with that of Thomas Hoenig (1998), president of the Federal Reserve Bank of Kansas City, who wondered about the wisdom of making depositors face risks that they do not now face [9]. That view strongly colors the recommendations in this paper.

PART II: PERCEIVED PROBLEMS WITH DEPOSIT INSURANCE TODAY

As we have said, we do not believe that the U.S. DI system requires wholesale change. Nonetheless, it does face a number of challenges. The three issues highlighted in the Options Paper are: 1) risk pricing problems that can distort incentives and increase moral hazard, 2) a potential procyclical bias that could undermine economic and financial stability, and 3) determining a fair deposit coverage level that protects unsophisticated depositors while at the same time limiting moral hazard.

Risk Pricing Problems

Virtually all economists would agree that any insurance should be priced as accurately as possible to reflect expected losses. The further marginal pricing deviates from expected marginal costs, the greater the chance that moral hazard problems will crop up and the more likely it is that managers will make sub-optimal business decisions. Unfortunately, the current DI system, which is supposed to feature risk-based pricing for individual institutions, is prevented from doing so by the way it treats the designated reserve ratio (DRR) for the insurance funds. Specifically, because the DRRs for both the BIF and the SAIF have been exceeded for several years now, over 90 percent of all financial institutions pay essentially nothing for deposit insurance. That, of course, means that premiums are not based on risk and therefore are not playing the role they should in reducing moral hazard and giving proper pricing signals to the marketplace.

This fundamental problem has led to a number of market distortions. For example, a large bank with hundreds of billions of dollars of deposits and extremely complex risks may pay the same number of dollars (zero!) for insurance as a small community bank. Even banks in different risk categories (the top two CAMELS categories, say) may pay the same for insurance. When DI premiums are effectively zero for most institutions, the incentive for bank managers to improve their operations and, in particular, to worry about the risks they take on, are dulled. In a dynamic marketplace where some new financial institutions are being created, some are growing rapidly, and others are shrinking, such undifferentiated premiums can lead both to moral hazard and to problems of unfairness. For example, newer and faster growing institutions benefit at the expense of older and slower growing firms. Many banks are getting a free ride from the DI system, something that creates the wrong incentives.

A related problem is that the current DI system may not be fully exploiting all available information in determining the riskiness and hence, the insurance premiums, of individual institutions. Academic research suggests, for example, that the market prices of subordinated debt issued by large banks contain information about risk that could be usefully brought to bear in determining a fair insurance premium [10].

In addition to these pricing problems, the current system appears not to have dealt definitively with the "too big to fail" issue. Although the FDICIA of 1991 significantly tightened restrictions on bailouts for such institutions, it seems likely that the largest institutions still get extra benefits in the form of potential payouts for uninsured depositors, etc. A related issue is whether deposit insurance for some institutions might help to subsidize non-deposit banking activities. Again, economic theory would suggest that giving institutions extra protection without a cost may cause them to engage in riskier behaviors than they otherwise would.

Avoiding a Procyclical Bias

We have emphasized that the most important goal of DI should be to enhance macroeconomic and financial stability. The current system, however, always strives to maintain a DI fund equal to 1.25 percent of deposits; hence, it stops collecting significant insurance premiums once that target DRR has been attained. Instead, if losses stemming from bank failures drag the funds below the 1.25% DRR, the FDIC now imposes an ex post settling up mechanism that could cause banks to pay high premiums during periods of financial distress. This design feature of the current DI system could cost financial institutions billions of dollars in extra premiums and raise the cost of deposit gathering during business cycle downturns. Procyclical payments like that could provoke a retrenchment in credit extension, and therefore slow down economic activity. at exactly the wrong times. This raises the question of whether a more flexible system-perhaps one that allowed considerable deviations from the system's targeted reserve ratio based on a long-run expected loss formula--might be less procyclical and therefore have superior operating characteristics.

A Fair Coverage Limit

The third main problem confronting the current DI system is determining a deposit coverage limit that is fair and transparent, protects small depositors, allows for sound personal financial planning, and yet does not exacerbate moral hazard risks. Choosing such a coverage limit obviously represents a tradeoff among competing goals.

One key issue is that the coverage limit in the current system is not indexed, which appears to be at variance with practices in a variety of other government programs that benefit citizens. Indeed, if Social Security payments, Medicare benefits, and personal tax exemptions are all indexed for inflation because doing so is perceived as both fair and efficient, would it not also make sense for the coverage limit on deposits to be indexed?

On another matter, the current system suffers on the transparency/economic efficiency front because of the allowance of multiple registrations for coverage. There seems to be a strong *a priori* case for simplification.

PART III: AN APPROACH TO REFORM: OUTLINE

Having outlined both the principles that should influence the design of deposit insurance (in Part I), and the perceived problems with the current system (in Part II), we proceed now to sketch the broad contours of a comprehensive approach to DI reform, leaving the details to Part IV.

Three main issues are dealt with in the Options Paper:

1. the nature and operation of the insurance fund, e.g., whether a "user fee" or "mutual" model applies.
2. the pricing of deposit insurance; in particular, how to make premiums sensitive to risk.
3. whether the coverage limit, which is now $100,000, should be changed.

But before we delve into these design issues, we must first address a more basic question.

Is there a case for wholesale privatization?

A number of authors have suggested replacing FDIC insurance, in whole or in part, by private deposit insurance [11]. In principle, there is a case for privatization--as we acknowledged in Part I--even though the history of private deposit insurance is hardly an auspicious one. Most other forms of business (and personal) insurance are, after all, provided by private, for-profit companies [12]. If there is an intellectual case for public provision of deposit insurance, it must rest on a belief that the deposit insurance industry is a natural monopoly, on a perceived need for universal coverage, or on an externality--as we argued in Part I. (The externality might justify the need for universal coverage.)

While there is certainly reason to expect economies of scale in the provision of insurance [13], including deposit insurance, we see no reason to believe that these economies are so large and so long-lasting as to lead to a natural monopoly. The property and casualty insurance industry, for example, does not appear to be naturally monopolized--even though it insures against some very large risks (e.g., earthquakes and hurricanes). Nor does any other type of insurance that we know of.

The desire to prevent contagious runs might rationalize a legal requirement that banks carry deposit insurance. But universality does not imply a need for nationalization. For example, state governments require drivers to carry automobile liability insurance, but they leave provision of the insurance to private enterprise. Similarly, one could imagine the federal government mandating DI coverage but not selling the product itself [14].

So we are left with the externality argument. As we stated in Part I, we believe this argument is valid: Deposit insurance probably makes the whole economy more stable, thereby conferring benefits on those who do not pay for the insurance. But externalities are typically "corrected" by appropriate taxes or subsidies, not by government takeovers of externality-generating industries. Why should the deposit insurance business be so different? Historically, the answer is clear: A variety of private deposit insurance schemes were tried, but failed miserably. In theory, however, it is not obvious that private insurance could not be made to work in the more sophisticated financial world in which we live today. Should we try it again?

We are inclined to answer no, for the reason given in Part I--the "if it ain't broke, don't fix it" principle. But if elements of privatization are to be incorporated into the DI system, it seems to us that they should be the *opposite* of the suggestion that the FDIC be forced to purchase reinsurance in the private market. Private insurance companies ought to be capable of handling the risks posed by the failure of any one of thousands of small banks. But there is reason to worry about the safety and soundness of the insurance companies themselves in the event of the "100-year flood," that is, the big macro shock that brings hundreds of banks (or perhaps just a few giant banks) to the brink of failure. We see more virtue in a system in which private insurance companies sell deposit insurance to individual banks at market prices, and the FDIC serves as the ultimate reinsurer, than we do in the opposite system. In fact, this points to another reason for letting the government, rather than private companies, provide deposit insurance: It has deeper pockets than any private insurer.

On the presumption that there is no compelling case for wholesale privatization, so that the FDIC--a government agency--will remain at the core of the DI system, we now turn to the three main issues raised in the Options Paper.

The Insurance Model

The Options Paper draws a sharp distinction between the "user fee" and "mutual" models of deposit insurance. But we see the two conceptions as complementary. In particular, we firmly believe that the FDIC should be conceived of as *selling* an insurance product to the banks, and it ought to charge actuarially fair premiums for that service. In that sense, FDIC premiums are properly thought of as *user fees*. In particular, there should always be a positive cost of insuring each marginal dollar of insured deposits.

On the other hand, the DI "market" in the United States is a synthetic, not an actual, one. If a private monopolist sets its prices too high, entry by new competitors will erode its monopoly profits. But this will not happen if the FDIC sets its premiums too high. Instead, assets will build up within the insurance fund, as has happened in recent years. And, if the FDIC sets premiums too low, exit is not an option. Instead, the flow of claims will gradually deplete the fund. If, as we suggested in Part I, the DI system should be designed to neither tax nor subsidize the banking system in the long run, then the FDIC should strive to operate on a

approximate breakeven basis--which certainly implies elements of a *mutual-insurance* arrangement.

The user-fee and mutual models can be reconciled by allowing for a two-way flow of revenue between the FDIC and the banks. The FDIC should, in our view, always charge some positive (if small) marginal cost for the insurance it provides. That's the user-fee element. But if, as in recent years, these premiums lead to "excess profits"--that is, to an unnecessary buildup of the fund, the FDIC should rebate monies back to the banks in proportion to past premiums paid [15]. That's the mutual element.

We would not go so far, however, as to acknowledge that banks have an explicit claim on FDIC revenues--a claim that might, for example, be valued as an asset on the banks' balance sheets. The FDIC is not a mutual insurance company owned by the banks; rather, it "belongs" to the taxpayers. So, for example, if Congress were to decide that more coverage is needed (e.g., a higher coverage limit than $100,000), and that a larger insurance fund is therefore appropriate, rebates to banks should be cut--even though they may have "overpaid" for insurance in the past.

Risk-Based Premiums

We believe that virtually all economists would accept the principle that the premiums banks pay should reflect the expected costs they impose on the insurance fund. This is an elementary efficiency condition. But as the Shadow Financial Regulatory Committee points out, these expected costs were substantially reduced by FDICIA--especially by the prompt corrective action (PCA) provisions, which mandate regulatory intervention well in advance of insolvency [16]. Ideally, if PCA operates properly, the FDIC should never suffer a loss--except, say, in cases of fraud. So marginal costs are arguably near zero.

We suspect that breakeven premiums in the future probably will be lower than they have been in the past because of PCA. But we would not take the argument all the way to (almost) zero premiums. First, perfection is not achievable in bank supervision (nor in anything else). Even the best supervisors will occasionally err, and some of these errors will allow sick banks to get even sicker. Second, circumstances occasionally change rapidly. So, in certain rare instances, a bank might slip from being well-capitalized to being insolvent very quickly. Third, and most important, those occasional large, adverse macro shocks that we have spoken about may damage the balance sheets of many banks all at once, rendering some of them insolvent or nearly so before any "corrective action" can be taken. After all, many loans that are "good" in prosperous times have a way of turning "bad" during a slump.

Even if future losses to the FDIC are caused mainly by adverse macro shocks, which are in no sense the fault of the banks, it remains true that banks differ in the degree of risk they impose on the FDIC. Banks with stronger balance sheets (e.g., banks with more capital or safer assets) are more likely to survive even an acute macro shock, and hence are less likely to cause a loss

to the FDIC. Weaker banks pose greater risks to the fund. So we believe that risk-based premiums--in particular, premiums designed to reflect expected loss--are still appropriate in the post-PCA world. However, the appropriate premiums for low-risk banks may be very low indeed.

Coverage Limits

Earlier, we advanced a slightly unconventional principle: that small depositors should not be expected to monitor the safety and soundness of their banks [17]. Instead, their deposits should be 100% insured, and the bank supervisory agencies should take on the responsibility for monitoring. But what constitutes a "small" deposit, that is, what should the coverage limit for FDIC insurance be?

The current limit was pulled out of thin air in 1980, and thus has no particular claim to optimality--then or now. Many observers have argued that the $100,000 limit was excessive when it was set in 1980, and some would say it still is. But the real value of the $100,000 limit has been roughly halved by inflation since 1980 and, as the Options Paper points out, it is no longer so far out of line with its average since the late 1960s [18]. (It was out of line in 1980.) We are no better able than others to decide on the optimal level of coverage. But we offer five observations.

First, comparisons of the $100,000 coverage limit with, say, the median account balance or financial net worth of the median household are beside the point. We are not talking about medians here, but maximums. Does anyone seriously believe that the upper 50% of account holders should be responsible for monitoring their banks? To us, the critical issue here is where to draw the line separating "large" depositors, who are expected to monitor the safety and soundness of their banks, from "small" depositors, who are not. From this perspective, comparing the $100,000 limit to, say, the median account balance is irrelevant.

Second, given the large accumulations of financial wealth that have occurred in recent years, $100,000 is no longer such a huge amount of money--even though it is much bigger than the median account. For example, at an interest rate of 6%, a $2000 annual deposit into an IRA will accumulate to almost $110,000 after 25 years. Many risk-averse people might want to keep that much or more in an insured bank account. And it is not clear what social purpose is served by forcing such people to spread their accounts over multiple institutions.

Third, it seems quite unreasonable to expect even a depositor with more than $100,000 (but less than, say, millions) to keep close tabs on the financial condition of her bank. Most ordinary people and small business owners have better things to do with their time, and would not be very effective bank supervisors in any case.

Fourth, because the current deposit insurance laws permit separate insurance coverage for each right and capacity in which an individual holds an account, they make a mockery of the

$100,000 limit. The Options Paper (footnote 19, page 37) points out that a family of four could conceivably keep as much as $2 million in insured accounts in a single institution. There is a strong case, we believe, for imposing the insurance limit on the individual depositor, not on the account. For accounts with multiple owners, the imputed insurance would be prorated equally among them.

Fifth, wherever the limit is set initially, we believe it should be adjusted over time to reflect the growth of nominal income or wealth, not just the increase in the price level.

As we will explain in greater detail in Part IV below, this reasoning leads us to recommend:

   a. increasing the $100,000 coverage limit, perhaps substantially;
   b. then indexing it; and
   c. legal simplification that applies the limit to all the accounts held (in whole or in part) by a single individual in a single institution, not to each right and capacity separately.

In summary, we envision a "tuned up" deposit insurance system in which banks pay premiums that are based on risk and are (virtually) never zero, banks receive rebates based on past premiums when the fund is flush with money, and the coverage limit is raised but simplified to avoid proliferation of accounts. We proceed now to the details.

PART IV: TOWARD REDESIGN OF DEPOSIT INSURANCE: DETAILS

1. The insurance fund and average premiums

We have outlined our main views about how the DI system should be structured in Part III: There should always be positive premiums on each marginal dollar of insured deposits. Premiums should be actuarially fair and neither undercharge nor overcharge banks over time. The system should give financial institutions the right microeconomic incentives for their business planning. It also would have a backward-looking feature to prevent the DI fund from accumulating an excessive balance over time. Rebates based upon historical "excess contributions" could help to achieve this and would represent a settling up for past imbalances. Such a system would represent a blend of the traditional "user fee" and "mutual" models.

To these main goals, we would add a couple of additional ones. Most obviously, the DI system should have enough money to cover losses when it is needed. Also, the DI system should not be procyclical or, at the very least, its procyclical features should be minimized. One way to achieve this objective would be to make premiums more "sticky," so that they do not have to be jacked up dramatically during periods of distress, which could cause banking activity to slow down during business cycle downturns. The Options Paper (page 22-23) notes that the

current system seems to score particularly poorly on this last criterion because it requires a rapid *expost* settling up after a bad experience pushes the fund balance too low. In essence, the current system has become too close to operating on the pay-as-you-go principle.

These design requirements lead to four main questions. First, how should the premiums be determined? Second, what would be the right designated reserve ratio (DRR) for the DI fund? (For example, should it be designed so as never to require a government transfer?) Third, how should premiums be adjusted over time in the wake of actual loss experience? (In particular, how could the adjustment mechanism be changed to minimize the procyclicality of the system? Should it have "hard" targets or "soft" targets for the DRR?) Fourth, how would the abovementioned rebate system work?

We recognize from the outset that tradeoffs are involved in the design of any insurance system--or in any public policy arrangement, for that matter. In this case, most of the tradeoffs have to do with the level of security that the system is designed to deliver.

If the system must produce 100% safety with zero probability of government assistance, then a very large DRR will be required. But such a large fund would be very expensive for financial institutions. For that reason, it could well be sub-optimal in terms of its effect on the credit supply capacity of the banking system as a whole, leading to too many sterile funds piling up in a government account rather than remaining in bank capital--where they would be available to support lending. If the public is willing to accept the possibility of a backstop reinsurance role for the general fund, it is possible to get by with a substantially smaller DI fund. Likewise, if it is deemed important to have a rapid adjustment mechanism that keeps the DI fund balance close to the DRR, the system might be judged to be safer from the standpoint of risk to the taxpayer. But it would be riskier from a business-cycle perspective because of the procyclical element it would add to the costs of the banking system.

Essentially, making a judgment on the target size of the DI fund, and on how rapidly it should return to this target after suffering unusual losses, is tantamount to trading off possible risks to the taxpayer against (a) an excessively large buildup of sterile funds and (b) the amplitude of the banking sector's swings over the business cycle. In this regard, we have already revealed our biases. We believe the government *should* help out in rare circumstances, say in the event of a "100-year flood." We justify this degree of intervention by the macroeconomic externalities described in Part I.

How should average premiums be determined?

The Options Paper (page 22ff) lays out the main frameworks that could be used for determining the aggregate level of premiums that the DI system would charge. Premiums could be based on historical experience, on a moving average approach, or on analytical approaches. Regarding the first of these, we were struck by one interesting fact: that the average cost of expenses and losses at the FDIC over the entire 1934-1999 period was 8.5

basis points, or almost exactly the 8.33 basis point standard average premium that the fund has charged over most of its history. The past may not be irrelevant!

Nonetheless, the chief advantage of the analytical approach is that it is arguably more forward looking and can look at relevant financial, supervisory, and market information. As one example of the analytical approach, the Options Paper describes the simulation exercises of Oliver, Wyman and Company, in which loss modeling of individual financial institutions was weighted up to estimate the aggregate exposure of the DI system [19]. This analysis estimated, on a preliminary basis, that the average expected loss for the system would be about 5 basis points. An even lower number might be justified going forward, on the grounds that PCA has substantially changed the way regulators interact with financial institutions since the early 1990s.

At the end of the day, it will be virtually impossible to pin down the correct average premium with precision. For this reason, the DI system needs a feedback mechanism to adjust the average premium up or down in line with loss experience--as we advocate with the rebating mechanism. It is not vital (and is impossible, anyway) to get the average premium exactly right at first. As long as it is set approximately correctly, it should send (roughly) the proper signals to the market; and it can be fine tuned later.

We believe that triangulating with different methods that either verify or contradict one another usually provides the best overall approach to public policy decisions [20]. For this reason, we recommend that the FDIC commission additional analytical simulation exercises of the type just described, and that the results of these analytical estimates be averaged with the average loss experience over a long historical period of time to set the overall rate. Our presumption is that such an exercise will lead to an average aggregate premium for the system somewhere in the range of 4-8 basis points. Since we have a slight bias in favor of safety and stickiness in premiums, we would recommend starting the new system a bit higher than the best point estimate--especially since the rebate system will make sure that any excess funds get returned to the banking system.

What is the right size for the DI fund?

As just indicated, we would choose a designated reserve ratio (DRR) based on a blend of historical analysis and modern analytical research. We were impressed with the analysis described in Attachment F-3 of the Options Paper (pages 78-81), which describes the application of Robert Merton's "minimum optimal fund size" (MOFS) analysis to the deposit insurance system. This analysis is based on the present discounted value of expected losses to the FDIC in perpetuity. In perusing the simulation results in Table F-3.1 (page 78), we were struck by the fact that, assuming 2 percent annual deposit growth, a 5 basis-point premium, and a 6 percent risk-free rate of return, this analysis suggests an optimal fund size of 1.28 percent of deposits--about the same as the current legal DRR [21].

In addition, the current DRR has worked well for the past decade, although obviously it has yet to be stress-tested by the kind of adverse experience of the late 1980s and early 1990s. It is interesting to note, however, that the decline of the DI fund over that decade, the worst in U.S. postwar history, was about 1.75 basis points of deposits-- suggesting that, if lessons have been learned, and if FDICIA and PCA really will reduce losses, a DRR lower than 1.25 might be sufficient to handle expected future downturns.

We were also attracted to the idea, presented in the Options Paper (page 29), of targeting the DI fund to have the rough equivalent of a Standard & Poor's AAA bond rating-that is, having an annual probability of default of about 0.01 percent. It certainly seems reasonable to us that the government could pick up a residual risk of one in 10,000. Further simulation analysis of the type reported in Attachment F-3 to approximate different levels of risk would appear to be fruitful, and we would strongly suggest that this receive attention in the FDIC's research plans. We suspect that, at the end of the day, the analytical work will corroborate that the current DRR of 1.25 is a reasonable initial target.

How should premiums be adjusted over time?

We have stated that it would be advisable to make premiums relatively sticky so as to help banks plan their operations better and to reduce procyclicality [22]. The current system is charging essentially zero premiums. But if the fund balance were to drop below the DRR of 1.25, premiums would suddenly jump to 23 basis points. This discontinuity appears to be potentially disruptive to the financial industry and wholly unnecessary.

For exactly these sorts of reasons, we strongly believe that the DI system should use a "soft target" rather than a "hard target" as the fund adjusts to changed loss experiences over time. More specifically, we believe there should be a buffer zone so that the first deviations in the fund's balance away from the DRR should not require any premium adjustments. We feel that further Monte Carlo-type studies of the type reported in Attachment F-3 of the Options Paper can suggest good options for policymakers. For example, one of the tests reported that the hypothetical operation of a system with (a) a 15 basis point ceiling and 4 basis point floor on insurance premiums and (b) no premium adjustments at all until the fund is at least 21 basis point away from the DRR found that the DI fund could have maintained a positive balance every year from 1980 to 1999 with no annual change in premiums of more than 11 basis points [23].

Again, we suggest that these sorts of analytical calculations be blended with judgments about adjustment rules that seem to have worked in the past. As an example, we think there may be much to recommend a system in which the DRR is, say, 1.25, but where the first 15-25 basis points of change (positive or negative) in the fund's balance is tolerated without any change in premiums. Premiums would be adjusted only if the balance moved outside this range of tolerance--say, 1.1 to 1.4 or 1.0 to 1.5. If the fund were to build up reserves beyond the upper bound, the system would then begin to rebate funds back to the financial

institutions. If the balance were to drop below the lower bound, a temporary surcharge on rates would kick in. As before, simulation analysis should be useful in suggesting rules that could reduce the volatility in premiums (hence making the system less procyclical) without materially increasing the odds of fund insolvency. Every 3-5 years, the overall performance of the DI fund could be reviewed, and the DRR could be adjusted upward or downward.

How should the rebates work?

Rebating any "excess profits" is a key requirement if the DI system is to charge positive premiums on all deposits at all times--and yet not grow enormously during long stretches of good years. Under the combined "user fee-mutual" model that we envision, premiums would probably be priced a bit above actuarially fair levels, but rebates would provide the outlet that prevents the system from accumulating excess funds. Using one of the examples mentioned above, funds could be returned to the financial institutions if the DI fund balance exceeded, say, 1.4. This raises an obvious question: What rules should be used to determine who would get money back? Would it be based on prior payments into the fund? On the deposit base?

We agree with the Options Paper that the most sensible rule is to base rebates on premiums paid into the system in earlier years--certainly not in the year in question. But the issue is complicated by time lags. If, for example, the system experienced serious problems, and it took many years to rebuild the fund to the point where rebates could be paid, some of the banks that paid the premiums might have ceased operations before any rebates were received. Other banks might have started business and therefore made, say, only one year's worth of contributions before rebates started. And so on.

In the current context--in which negligible premiums have been collected since 1997--there is a particularly acute need for a transition rule. For example, suppose it was decided that the "permanent" rebate formula would base rebates in year t on premiums paid in years t-1, t-2, and t-3. Most banks (and all highly rated banks) have paid zero premiums for several years now. So should they all receive no rebates? Should the initial rebates therefore go only to the least-sound banks--the ones that have been paying positive premiums? We think not. But we are also pretty sure that any transition rule will be criticized as "unfair" by some institutions. That is probably inevitable.

Economists have no special ability to decide what is fair and what is unfair. Perhaps the only principle on which the FDIC should stand is that rebates do not represent a formal "claim" that the financial institutions have on the FDIC, but rather a type of end-of-year dividend granted when the fund has had string of good years. From the point of view of economic efficiency, as opposed to fairness, the important point is that each new dollar of insured deposits brings with it some fee for insurance--even if rebates offset most or all of this cost for a given institution.

2. The assessment and treatment of risk

Under the current deposit insurance system's *modus operandi*, almost all banks pay the same premium rate: zero. It is painfully obvious that such an arrangement woefully fails to differentiate among banks according to risk, thereby both exacerbating moral hazard and violating one of the legislative mandates of FDICIA. This extreme mispricing of risk was, of course, unintended; it arose as consequence of targeting a fixed designated reserve ratio (1.25% of deposits) in a strong economy in which bank failures became virtually nonexistent. We have just advocated a "soft target" system to replace rigid targeting of the DRR, mainly on the grounds that it would make DI premiums less procyclical. But since that same system would also reinstate positive insurance premiums for all banks, it opens up the possibility of reestablishing a premium structure that reflects the differential risks that stronger versus weaker banks impose on the FDIC. That should definitely be done, in our view.

In principle, the schedule of risk-based DI premiums should be crafted to reflect expected loss, which is a *forward-looking* concept. In practice, the idea would probably have to be implemented by looking *backward*--at historical experience. A method of dividing banks into "risk classes"--not necessarily the same ones as previously used--would have to be settled upon. For example, premiums might be based on the five-category CAMELS rating. (More on this just below.) Then, a schedule of DI premiums reflecting the greater risks of insuring the deposits of lower-rated banks would have to be designed. If this premium schedule were based entirely on historical loss experience, the differences between highly-rated and poorly-rated banks could be quite large.

Let us use CAMELS ratings once again as an example. Chart 1 in the Options Paper (page 12) suggests an approximate tripling rule: The DI premium should roughly triple each time a bank is downgraded to the next lower category [24]. But CAMELS ratings are just one example; there are other ways to assess the risk of insuring individual banks. For example, one common suggestion is to look at the spreads (over Treasuries, say) of banks' subordinated debentures [25]. Indeed, while we think it would be a mistake to rely exclusively on market information in appraising risk to the FDIC-and, in fact, it would be impossible for thousands of small banks-market prices can be a valuable supplement to supervisory and other information.

Rating banks by risk

The Options Paper contains a thorough discussion of various ways to distinguish among banks by risk-drawing a distinction between "options relying on supervisory evaluations" (pages 12-14) and "options relying on objective factors" (pages 14-20). The latter includes market information as a subset. We are more attracted to what the Options Paper calls "hybrid approaches" (page 20), which combine elements of each.

Supervisory information is invaluable; indeed, it is a major source of the regulatory agencies' comparative advantage in monitoring banks. We find it hard to imagine a risk-scoring system that would ignore a bank's CAMELS rating-or at least components thereof, since much of the information that goes into that rating is directly relevant to the probability that the bank might one day impose a loss on the FDIC. However, the actuarial risk to the FDIC is a very specific concern, and the CAMELS system was designed for broader purposes. So, at minimum, some reweighting of the six CAMELS components would be called for [26]. In addition, as the Options Paper points out, supervisory ratings may not be revised frequently enough. So there is a *prima facie* case for supplementing supervisory information with "objective" data that are available at higher frequency.

The Canada Deposit Insurance Corporation's risk-scoring system may provide a good starting point for designing such a hybrid system. It assigns each bank a numerical score based on 12 criteria or factors [27]; it overlaps considerably with the CAMELS rating (e.g., capital adequacy and asset quality); and it merges both quantitative and qualitative information--with much of the latter coming from bank examinations. However, we believe that any new risk-scoring system designed for the FDIC should include the use of market data where available. The reason is simple: As we mentioned earlier, research has found that supervisory evaluations and market data each contain independent information that enhances the ability to forecast changes in a bank's condition [28].

What market information should regulators use? Many observers have pointed out that holders of subordinated debt are in more-or-less the same position as the FDIC: They share in the downside risk in the case of insolvency, but not in the upside if the bank it highly profitable. So, for those large banks that have subordinated debt outstanding (and traded) [29], the best market indicator would seem to be the interest rate on that debt--as mentioned earlier. Indeed, Berger, Davies, and Flannery (2000) find that bond prices correlate better with banking problems than do equity prices-just as one would expect on *a priori* grounds.

However, relatively few banks have chosen to issue subordinated debt [30]. So, in many cases, the best (or, indeed, the only) available market indicator might be the change in the price of the bank's common stock--presumably, measured against some benchmark of stocks in general. We see no reason for the FDIC to ignore the information contained in equity prices, as long as there is a reasonable amount of trading, even if (nonexistent) bond prices would be better. But, of course, many small banks do not have *any* securities--debt *or* equity--that are actively-traded in markets. For such institutions, there may be no realistic way to use market data to supplement supervisory information.

Two difficult issues

The preceding paragraph raises two serious (and related) questions over which reasonable people might disagree. First, should banks be *compelled* to issue subordinated debt--as proposed by Isaacs, the Shadow Financial Regulatory Committee, and many others? Second,

is it appropriate to subject large and small banks to different regulatory regimes--as just suggested? We take these up in turn.

Advocates of using interest rates on subordinated debt as a market-based regulatory tool typically propose that banks be *required* to issue such debt. Why make this a requirement? Presumably because market quotations offer the FDIC and other regulators the best information they can hope to acquire-especially when a bank may be encountering (actual or incipient) financial difficulties [31]--and that therefore the pricing of deposit insurance and other aspects of bank regulation will be more efficient (and perhaps even less intrusive) if all large banks have subordinated debt securities outstanding.

We grant the argument that sub-debt offers useful information. But there are also valid arguments on the other side, arguments to which proponents of mandatory sub-debt seem to give short shrift. For one thing, forcing the issuance of subordinated debt in places where the market "doesn't want it" may produce a collection of securities that rarely trade. Prices of thinly-traded assets do convey information--of a sort. But that information might be dubious, or misleading or, in the worse case, even subject to manipulation. So bond prices in inactive markets may not be as useful to regulators as proponents assume [32].

In addition, backers of the mandatory subordinated debt idea may be paying insufficient respect to a fundamental principle of market economics: freedom of enterprise. Our economic system is founded (among others things) on the presumption that managers should be allowed to make their own business decisions--except where an important social purpose is served by government interference. The operational word here is "important." *Some* social purpose can always be invoked to rationalize *any* interference with business decisions. So would-be regulators must jump over some kind of a hurdle. When we see that some large banks have chosen *not* to issue subordinated debt, we must presume that they have made those choices for a reason. Before the government forces these banks to alter their capital structures, it should be convinced that the improvement in bank regulation--and hence, presumably, in financial stability--is sufficient to justify the violation of freedom of enterprise. Perhaps it is. But the case must be made.

Frankly, we find this a very close call; but we lean mildly *against* compulsion. Where banks have voluntarily issued subordinated debt securities that are traded on markets--as most large institutions have, regulators should surely use that information. But we are loathe to join the chorus arguing that every large bank should be compelled to do so.

One reason is the point to which we have just alluded: In reality, the mandatory subordinated debt proposal can be applied only to rather large banking organizations [33]. This observation raises a second question: Is it good public policy to regulate (or, in this case, to charge) small banks and large banks on different bases? One of the authors of this report (Blinder) was once a bank regulator, and he carried away from that experience a generic wariness of--though not an outright prohibition against--such differential regulation. One obvious problem is that

there will always be institutions at or near the border between "small" and "large [34]." If, for example, banks above $10 billion in assets are required to issue subordinated debt but smaller banks are not, what will happen when a cyclical boom brings, say, a $9.8 billion bank over the $10 billion threshold--perhaps temporarily? Or when sagging business pulls a $10.5 billion bank below the $10 billion mark? The intelligent application of administrative discretion can probably resolve such problems [35], but there is a much broader issue of fairness.

Economists almost always place much greater weight on efficiency and much smaller weight on equity or fairness--including the *perception* of fairness--than those who live in the political or public-policy worlds. We grant the point that treating large and small banks differently may--and in this case probably does--improve regulatory efficiency. But there is also a cost whenever one group of banks feels itself (or actually is!) disadvantaged relative to another. In the limit, this situation may lead the aggrieved parties to petition Congress for relief--which they may well get, and in ways that make the entire regulatory system less efficient.

We raise this point mainly as a caution--and as a principle to be kept in mind when designing the details of any two-tier system. In this particular context, however, we are comfortable endorsing the use of subordinated debt in assessing the riskiness of large banks--for three main reasons. First, the market information contained in bond prices will be only one among several factors used to determine DI premiums. For many of the banks with no sub-debt outstanding, stock market prices (rather than bond prices) will provide market information. Second, we are persuaded that the activities and balance sheets of large versus small banking organizations are sufficiently different that the efficiency gains from differential regulation probably outweigh any perception of unfairness (or actual unfairness). Third, and not insignificantly, Congress has already rendered a verdict on this issue. FDICIA explicitly authorizes different premium systems for small and large banks.

However, we are less comfortable with the notion of *requiring* that all banks above a certain size issue subordinated debt, as previously noted.

How much should insurance premiums differ?

The devil always lurks in the details. While it is hard to argue with the principle that riskier institutions should pay higher premiums (and this is prescribed by law, anyway), the important question in practice will be: How much higher? Experience says that the answer is probably: very much higher.

In the Canadian system, for example, there are four risk categories and premiums rise in the ratio 1:2:4:8 as banks move into higher risk classes [36]. Thus, for example, if the safest banks pay 3 basis points, the riskiest banks will pay 24. The FDIC has estimated that a Canadian-type system for the United States would place 41.5% of insured institutions in the lowest premium

category and another 41.5% in the next-lowest. Only 3.5% would fall in the highest premium category [37].

We think this scoring may be too lenient. As mentioned earlier, looking at historical loss experience by banks with different CAMELS (formerly CAMEL) ratings suggests something more like a tripling rule. So, for example, if CAMELS-1 banks were to pay 1 basis point, CAMELS-5 banks should pay 81 basis points--which is probably prohibitive. However, there are practically no CAMELS-5 banks [38], so it is perhaps more relevant to look at the premium that would be charged to a CAMELS-4 bank: 27 basis points. Clearly, a premium schedule that looks like 1:3:9:27 penalizes risky banks (and rewards safe ones) much more than the Canadian system, with its, say, 3:6:12:24 schedule.

The principle of expected loss pricing argues for ratios closer to 1:3:9:27 than to 1:2:4:8, with perhaps special handling for CAMELS-5 banks. (They get much special handling anyway!) But whatever ratios are adopted initially, this issue should probably be revisited from time to time--perhaps once every 5-10 years--to reflect new information on FDIC loss experience. Similarly, the whole structure of rates would move up and down over time under a "soft target" system, as the balance in the insurance fund falls and rises. So, for example, the rate structure might be 1, 3, 9, and 27 basis points when the reserve ratio is "high," but 2, 6, 18, and 54 basis points when the reserve ratio is "low."

In any case, these are just examples. The actual premium ratios will, of course, depend on how the risk classes are defined-and they may not be based on CAMELS ratings.

Using the market to assess risk to the FDIC

Relative to many other proposals for FDIC reform, it may seem that the system we have just advocated makes relatively little use of the capital markets to price risk. These more radical alternatives include: privatizing deposit insurance in whole or in part, perhaps with a backup role for the FDIC as reinsurer; Ely's (1998) cross-guarantee proposal; and requiring the FDIC to purchase reinsurance in the private market. That may be so, but there are reasons. We are concerned that private insurers may have different interests than the government (e.g., profit rather than macroeconomic stability). We worry that private insurance schemes may not survive the proverbial 100-year flood (and the history of private deposit insurance does not allay our fears). And, as we noted in Part I, we are not convinced that the current system is fundamentally "broke" and therefore in need of a complete overhaul.

That said, there are more benign (and less radical) ways to make use of the capital markets' ability to appraise the risks facing the FDIC. We are, for example, somewhat attracted to the ingenious suggestion of Wall (1997) that the FDIC issue capital notes, the interest on which would be suspended if the insurance fund were forced to borrow from the Treasury and terminated if the fund fell to zero (thus requiring a Congressional appropriation). If an active market in these notes could be created [39], price fluctuations in this market (relative to

Treasuries, say) would provide a readily-visible, market-based indicator of the risk to the deposit insurance fund.

We would not, however, recommend establishing any mechanical links between the prices of FDIC capital notes and changes in the parameters of the DI system (e.g., the premiums). Rather, we envision these notes as playing a kind of public "oversight" role. Fundamentally, the default probability embedded in the prices of FDIC notes would provide a market-based cross-check on the FDIC's own assessment of the health of the DI system--a cross-check that should provide useful information to the FDIC, to the Congressional banking committees, and to the public.

3. Coverage limits

The $100,000 limit on deposit insurance coverage has now been in effect for more than 20 years. While the banks are anxious to increase it substantially, many economists seem to oppose the idea--as does the U.S. Treasury. Frankly, we are a bit baffled by the strength of this opposition. It is presumably based on fear of moral hazard. And it has surely been colored by the widespread view that the increase from $40,000 to $100,000 in 1980 was unjustified at the time and contributed to the savings and loan debacle. Both of these are probably true. But society does not typically enforce tight upper limits on coverage that leave some of the losses on, e.g., fire insurance or automobile liability insurance uncovered, despite moral hazards in each case [40].

The concern with letting depositors carry too much insurance presumably stems from fears of rampant moral hazard, which are in turn tied to perceived mispricing of DI. But if the DI premiums were set to reflect expected losses, as we have recommended, most objections based on moral hazard and/or unwarranted subsidies should evaporate [41]. In a world of properly-priced deposit insurance, it seems more appropriate to ask the opposite question: Why have *any* coverage limits at all?

The answer presumably inheres in the idea that the government should enlist the assistance of depositors in the job of appraising and monitoring the riskiness of their banks. In Part I, we offered as one of our basic principles the notion that "small" depositors should not be asked to take on this task. And in Part III we suggested a rather liberal placement of the dividing line between "small" and "large" depositors--probably above $100,000. While we can divine no sound theoretical basis for picking any particular number for the coverage limit, the principle can probably rationalize a limit several times greater than the current $100,000. But on grounds of institutional conservatism ("If it ain't broke, don't fix it.), we would recommend going slowly. A prudent first step might be to raise the limit to $125,000 or $150,000, and to couple this increase with the three additional proposals discussed just below: simplification, indexing, and optional excess coverage.

How much would raising the coverage limit add to total insured deposits? A recent study by Flannery (2000) for the American Bankers Association estimated that an increase all the way to $200,000 would bring an additional 8.3% of the current deposit base under the FDIC umbrella immediately, and that the broadened coverage would subsequently boost insured deposits by an additional 4-13%. If the upper limit of Flannery's estimated range were reached, that would reduce the current BIF-SAIF balance to only 1.11% of deposits, thereby more than eliminating the current surplus. However, under the "soft target" proposal for the DRR that we have offered here, lowering the reserve ratio by this much would not trigger any increase in premiums. Furthermore, since marginal premium rates are always positive, higher revenues would automatically accrue to the fund as insured deposits increased. And, finally, Flannery's estimate is based on raising the coverage limit to $200,000; a smaller increase would, of course, have a smaller effect on reserve ratios.

Simplification

Where public policy is concerned, we believe that simplicity is a virtue in its own right. Intelligible and straightforward laws and regulations are likely to elicit greater public understanding, respect, and compliance than obscure, labyrinthine ones. Unfortunately, administration of the current coverage limit on deposit insurance of $100,000 *per account* is far from simple because there are only very minimal limits on the number of insured accounts that an individual may maintain in a single institution. By opening accounts under different "rights and capacities," a person can proliferate the number of accounts that carry $100,000 of insurance. For example, John and Jane Doe can have individual accounts, a joint account, and a variety of other accounts jointly owned by one of them and one of their children. Trust accounts, IRAs, and Keogh accounts open up yet more possibilities.

Our proposed simplification would be to redefine the coverage limit to apply *per institution*, *per person*. To be concrete, if the selected coverage limit were $150,000, then John Doe, Jane Doe, and each of their children would each be entitled to, at most, $150,000 worth of insurance. There would be no additional allowances for IRAs, Keogh accounts, trust accounts, or, say, accounts owned jointly by John Doe and his daughter, Mary. An account held, for example, in the names "John and Mary Doe" would be construed as being 50% owned by John and 50% owned by Mary.

In principle, it would be even better to establish an even higher coverage limit but to apply it to *all* the accounts held under a specific Social Security number, no matter how many banks were involved. Thus, for example, with an overall coverage limit of $300,000, John Doe might have $100,000 of insured deposits in Bank One and $200,000 in Bank Two. Or he might prefer to hold $300,000 of insured deposits in BankThree. But he could not have $300,000 of insured deposits in each of several banks.

In practice, however, the informational burdens of doing so seem very great. It could require, for example, reporting of individual account balances to the FDIC. The FDIC's (1993) report to

Congress on this issue was extremely critical of the idea of trying to track customers across different banks--on the grounds that the costs would be large, the benefits small, and the dangers to privacy worrisome. We are not convinced that the computer or privacy problems (though real) are as severe as the 1993 report suggests. After all, the IRS receives reports from every bank on the interest earned on every account (but not on the account balance)--and these data are, of course, organized by Social Security number [42]. However, the benefits of tracking accounts across banks are probably quite small. Consider a hypothetical depositor with $199,000 on deposit in each of two banks under a $200,000 overall coverage limit. He would presumably be fully covered in the event that *either* bank failed. The overall per-person limit would become a binding constraint only if *both* banks failed at once.

Indexing

As we indicated in Part III, we take it as axiomatic that the coverage limit, wherever it is set initially, should be indexed. But to what? Most discussions of this issue focus exclusively on indexing to the *price level*, which is the way indexing is normally done. However, indexing only for inflation strikes us as too narrow in this context. After all, society grows richer through time in real terms as well. And we would expect the distribution of bank-account balances to shift to the right for both reasons.

One sensible conceptual baseline case, it seems to us, would be to imagine a world in which (a) the wealth-income ratio is approximately constant and (b) people hold a fixed fraction of their wealth in bank accounts [43]. In such a world, the ratio of bank-account wealth to nominal income would be roughly constant, so indexing the coverage limit to some measure of nominal income--say, to nominal GDP per capita--would seem to make sense. Since nominal GDP per capita has nearly tripled since 1980, indexing the $100,000 limit in this way in 1980 would have raised it to nearly $300,000 by now; indexing the previous $40,000 limit would have taken it to almost $120,000. A conceptual variant would be to index the coverage limit to, say, mean or median wealth in the Federal Reserve's triennial Survey of Consumer Finances (SCF). That would lead to a vastly higher growth factor. SCF data go back to 1983 (not 1980), and the last survey was of 1998 (not 2000). But over those 15 years, median financial assets grew more than tenfold. (We do not support a $1 million coverage limit!)

But today's decision on the indexing formula should not be unduly influenced by what would have happened if that formula had been applied to the arbitrary (and perhaps excessive) $100,000 limit established in 1980. We believe in applying indexing prospectively, not retrospectively. The two decisions--initial coverage and indexing formula--are logically distinct and should be separated.

Furthermore, simplicity and, we might add, comprehensibility by consumers argue against literal indexing on, say, an annual basis. If, for example, per capita nominal GDP rises 4.8% and the initial coverage limit is $150,000, we would not advocate raising the limit to $157,200 (4.8% larger than $150,000). Instead, the indexing formula should create a step function with

increments that consumers can remember--say, $25,000. For example, the table below indicates what might happen with an initial coverage limit of $150,000 and $25,000 step increments.

Year	Growth rate of per capita income	Indexed coverage amount	Actual coverage amount
1	4.8%	$157,200	$150,000
2	3.8%	$163,174	$150,000
3	3.0%	$168,069	$150,000
4	6.8%	$179,497	$175,000
5	5.1%	$188,652	$175,000
6	6.1%	$200,160	$200,000

Optional Excess Coverage

Finally, we come to a neglected aspect of deposit insurance. If some banks want to insure account balances larger than the coverage limit, and are willing to pay for the privilege, we see no public-policy reason to deny them this ability. If this extra insurance is priced to reflect expected losses, it should not create an untoward degree of moral hazard. And it would provide an additional security blanket for depositors who crave one.

Such optional excess insurance might be purchased from private insurance companies--as apparently happens now on a small scale [44] --or from the FDIC. We see no reason to discourage private coverage. But since the few private companies that now sell deposit insurance generally limit their coverage to a small amount *per bank*, we suspect that the FDIC might have to be the provider if this "market" were to grow large. The FDIC would presumably want to set the premiums for optional excess insurance *above* the bank's standard premium in order to reflect the social costs of the (presumed) reduction in monitoring by the bank's (now insured) large depositors.

4. Other Issues

Merging the BIF and the SAIF

We agree with the analysis in Attachment A of the Options Paper (pages 53-55) that suggests that there are numerous advantages from merging the Bank Insurance Fund (BIF) and the Savings Association Insurance Fund (SAIF) as soon as possible. The fundamental reason why

this makes sense is among the most obvious principles of insurance theory: The bigger the insurance pool, the more likely it is that actuarial calculations hold, so the pool is better able to handle risks. This theoretical result has been corroborated by FDIC research, which has demonstrated that a combined fund would have a lower probability of insolvency than either fund separately [45]. Even a fairly simple presentation of deposit share data seems to support this argument. As noted in Attachment A (page 53), the share of SAIF-insured deposits held by the three largest thrifts in March 2000 was 15%, while the share of BIF-insured deposits held by its three largest financial institutions was 14%. But if the funds were merged, the three largest overall institutions would account for just 12.7% of deposits.

A second important reason why a merger should take place is that there has been an increased blurring of the lines among different types of financial institutions, making banks and thrifts more alike over time. Government policies and programs should treat like organizations alike, and administrative simplicity should be promoted wherever possible. Another advantage of merging the two funds would that it would simplify business for the 800-plus institutions that hold both BIF- and SAIF-insured deposits. Currently these deposits must be tracked and assessed separately, which represents an inefficiency that could be reduced.

Furthermore, the timing is now propitious. Both funds are currently healthy, with balances over their mandated DRRs, and the proportional sizes of the two funds are roughly equal. As of March 31, 2000, the reserve ratio of the BIF was 1.35 percent and the ratio of the SAIF was 1.44 percent. A joint fund would have a ratio of 1.38, representing only a slight dilution of the SAIF fund. This gap is about as small as it is likely to be.

Given that the FDIC has examined the mechanics of merging the funds and has found no significant obstacles or expenses in such a merger, we would recommend that it be undertaken as soon as possible-before market conditions worsen or the gap between the two funds widens, which would lead to cries that one side was subsidizing the other.

Too Big to Fail

While we recognize the problem that arises when allegedly "uninsured" deposits are implicitly insured, we are less enamored than some of the idea of imposing an additional DI premium on banks that are so large that they are deemed "too big to fail" (TBTF). One reason for this skepticism is that we believe it is inadvisable to place particular banks *explicitly* under the TBTF umbrella. Doing so not only ends the incentive for uninsured depositors in those banks to keep a watchful eye over management, it also gives the banks labeled as TBTF an unfair competitive advantage in raising funds. This is one place, we believe, where constructive ambiguity has its virtues. Yes, it can be argued that most sophisticated depositors have a pretty good idea of which banks are considered too big to fail. But "having a pretty good idea" is at least a step away from having an official government label. It leaves at least some room for doubt.

Should the FDIC Pursue a More Flexible Investment Policy?

The FDIC's current investment policy is to invest 100% of DI funds in U.S. Treasury securities. Through arrangements with the Treasury's Bureau of Public Debt, the funds are invested in an evenly distributed ladder with maturities up to 12 years. The advantages of moving to a more flexible investment policy are well known from modern portfolio theory: a more diversified portfolio can deliver both lower risk and a higher return than a portfolio that is not diversified. In this case, the FDIC's portfolio is presumably at or close to a "corner" where risk in minimized. A movement away from that corner can presumably deliver extra return with minimal additional risk.

However, there are some clear potential disadvantages in a less restrictive investment policy for a government agency like the FDIC. Government agencies cannot be seen as "playing games" with peoples' money. If they do, they can lose not only money but also public confidence [46]. Furthermore, on rare occasions it is important for the FDIC to be able to sell off a portion of its portfolio in a short period of time to line up cash for a possible payout. If the FDIC were an active seller in the public markets, there might be a risk that traders would suspect that it was acquiring cash for a large payout, guess which institutions were at risk, and cause the markets to "pile on" those institutions--thereby causing them to fail when they otherwise might not. Our instincts are that the FDIC is such an important symbol of consumer protection that it should continue to invest in the safest, most liquid assets available-that is, U.S. Treasuries through the Bureau of Public Debt.

Having said that, however, the FDIC--like the Social Security system--will face a problem down the road when (and if) Treasury debt disappears. It is not too early for the FDIC to start thinking about how it will invest the funds in the event that Treasury debt is no longer available.

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1. The incentive to run is not entirely eliminated because depositors of a failed institution may still suffer transactions costs, including an enforced waiting period.

2. The statement obviously applies only to insured deposits; holders of (uninsured) jumbo certificates of deposit may still have an incentive to run.

3. The government could, of course, subsidize the private provision of deposit insurance rather than provide the insurance itself. We will have more to say on this subject later.

4. Of course, most information has this property, so this cannot be the sole argument for delegating monitoring to the government.

5. In principle, private organizations might sell these services to depositors. In practice, earning a return on the business of monitoring thousands of small banks might prove difficult.

6.   The importance of proprietary information is one main reason why the authorities cannot just release the supervisory information they have to the market. It is also a major reason why private deposit insurance systems have failed in the past.

7.   But so would a system in which a group of private insurance companies provided the DI and monitored the banks. More on this below.

8.   However, the $100,000 coverage limit may well have been set too high in 1980; it probably contributed to the debacle that followed.

9.   As Hoenig (1998) put it (page 31), "I do not see a public mandate for reducing safety net coverageï¿½ [furthermore] it is unlikely that a reduced safety net would be credible--people would still expect bailouts in some situations."

10. See DeYoung, Flannery, Lang, and Sorescu (forthcoming).

11. See Ely (1998) for a detailed discussion of one such proposal.

12. Federal flood insurance is a prominent exception.

13. For example, insurance relies on the law of large numbers.

14. There would presumably have to be regulations requiring that private companies cover every bank, just as state automobile insurance plans often provide for assigned risk pools so that even high-risk drivers are covered.

15. The length and nature of the "look-back" period is one of the serious details that need to be addressed. The important thing is that rebates be based on past premiums, not current ones.

16. See Shadow Financial Regulatory Committee, Statement No. 165, December 4, 2000.

17. This principle will seem "slightly unconventional" only to economists. Most ordinary people, we imagine, will find it quite natural.

18. See Chart 5 on page 36.

19. See pages 25-27. The risk facing the DI fund is modeled as a "portfolio" of individual bank credit risks. It represents a cumulative loss distribution. Such methods, though not without their problems, are similar to what is now considered "best practice" in bank regulation. For example, the new Bank for International Settlements capital rules try to set capital in relation to a model of bank's risk profile.

20. For those who would recommend ignoring historical experience and relying solely on analytical models, we note that this was exactly the error of judgment made by Long-Term Capital Management, which led to the firm's near bankruptcy in September 1998. LTCM's analysis was based on allegedly forward-looking financial risk assessment models. But its historical data sets reportedly only went back seven years.
According to Lowenstein (2000), if LTCM had only extended its data sets back 10 years, to encompass the stock market crash of 1987, it would have found risk experiences even worse than those that sunk the firm.

21. The MOFS values range widely depending upon assumptions about deposit growth and the premium-from effectively zero to nearly 14. With the assumption of moderate deposit growth and a middle of the road premium, say between 4 and 8 basis points, the MOFS values are mostly in the range of 1.0 to 1.75 percent of deposits.

22. One study by Shaffer (1997) cited by the Options Paper suggests that stable premiums could lower the banking industry's cost of capital by $1-4 billion per year-the equivalent of a premium reduction of 3-13 basis points. Even if that estimate is high, the direction of the effect, based upon financial theory, is certainly as Shaffer suggests.

23. More accurately, in 300 Monte Carlo simulations with these assumptions, the fund balance never went negative in any year from 1980 to 1999.

24. Specifically, the five-year bank failure rates for CAMELS ratings 1, 2, 3, 4, and 5 were respectively 0.7%, 1.8%, 5.1%, 16.2%, and 49.7%. These numbers roughly triple as you move down from one class to the next.

25. The idea seems to have been first proposed by William Isaacs when he was chairman of the FDIC. See Hanc (1999), page 18. It has been advocated by many people since then.

26. An econometric study relating CAMEL(S) components to subsequent failure rates could be used to provide guidance on the appropriate weights.

27. These include: capital adequacy, return on assets, volatility, efficiency, asset quality, asset concentration, adherence to regulatory standards, and bank examiners' ratings.

28. See the summary of evidence in Flannery (1998). For more recent evidence, see Berger, Davies, and Flannery (2000) and DeYoung, Flannery, and Sorescu (forthcoming).

29. This is an important qualifier that is often forgotten. See the discussion below.

30. But the issuers include most of the big banks, so this tiny minority of banking institutions accounts for more than 50% of insured deposits. (See the Options Paper, page 17.)

31. This last point is emphasized by the Shadow Financial Regulatory Committee in their Statement No. 168, February 2001.

32. Proposals that would limit the requirement to the very largest banks would presumably minimize this problem.

33. There is the further, subtle distinction that the debt may be of the parent holding company, not of the bank per se. The Shadow Committee argues for the latter.

34. Not to mention subsidiary questions such as: How would one treat small banks that are parts of large holding companies?

35. For example, phase-in rules could allow banks that cross the threshold into "large bank" status a grace

period before they were required to float subordinated debt securities.

36. See Table B-1.3 in the Options Paper, page 56.

37. See Table B-2.1 in the Options Paper, page 57.

38. Only 9 at the end of 1999, according to the Options Paper, Table B-2.1.

39. Once again, this should not be taken for granted. Attempts at establishing new securities markets sometimes fail for lack of investor interest, or for other reasons. If the FDIC notes were not actively traded, their role in "price discovery" would be limited.

40. By contrast, there are often lower limits on these types of insurance. However, some types of insurance, e.g., life insurance, may have upper limits on coverage.

41. We say "most" because any insurance policy entails a moral hazard.

42. Accounts without Social Security numbers are a problem in any case.

43. In reality, the share of wealth held in bank accounts has been falling, but the wealth-income ratio has been rising.

44. See the discussion in the Options Paper, page 48.

45. See Oshinsky (1999).

46. The Orange County California investment debacle is an extreme case in point; it illustrates how public trust can be destroyed by a bad investment policy. There are also many international examples in which risky or irresponsible investment policies caused humiliation for the government and a crisis of confidence.

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