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FDIC-Sponsored Self-Insured Depositors: Using Insurance to Gain Market Discipline and Lower the Cost of Bank Funding

by

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ABSTRACT

Insured depositors have no reason to care how their banks perform or how safe they are. Only uninsured depositors have that incentive. This paper offers a plan to replace some insured deposits with uninsured deposits. The plan: the FDIC would guarantee loan contracts if the loan takers deposited the proceeds exclusively in uninsured deposits and backed those deposits with equity. This would ensure that the loan takers could share the likely costs if any of their depositories failed. The loans made under FDIC guarantee would only require interest at the risk-free rate. Thus the loan takers could offer the proceeds at lower rates than the rates paid on current deposits. Accordingly, funding by banks would shift to the new deposits, and since the new "self-insured" depositors would have equity at stake, they would have no choice but to duly monitor their banks and impose rate premiums based on each bank's indigenous risk. With these reforms, some very costly imperfections of current deposit insurance would be eliminated: the FDIC would now have in place a program that would dissuade banks from moral hazard and high risk and set the foundation for better disciplined, safer, and more cost-efficient banking.

JEL Classifications: G21, G22, G28

Key Words: Reforming FDIC insurance, moral hazard, market discipline, bank risk pricing, cost of funds to banks.

INTRODUCTION

Although deposit insurance protects depositors against loss, it also creates moral-hazard problems for the insurer. Moral hazard is the tendency of those with insurance to take less care and make less effort to avoid risks than they would if they had no insurance. Deposit insurance therefore allows banks that engage in riskier activities to obtain insured deposits at risk-free interest rates. Depositors agree to risk-free returns because all costs of bank failure fall on the insurer. Another aspect of moral hazard is that insurance often provides a motive for bank managers—especially when threatened with insolvency—to take on additional risks. Empirical studies show that moral hazard was a key contributor to the huge losses suffered when thrift institutions failed during the 1980s.[1]

Some observers believe that regulators can sufficiently contain the moral-hazard problem by increasing bank regulation and surveillance, offsetting moral hazard with financial penalties for excessive risk taking, requiring banks to hold more capital, and intervening sooner at failing banks to minimize losses. Others, however, have asked whether the moral-hazard malady may not in fact reflect the inherently destabilizing effect of deposit insurance protection—an effect that can be countered only if the protection itself is removed or drastically reduced. This paper looks at the problem and offers a solution in the context of the latter view.

There are two kinds of deposit protection—statutory and implicit. Statutory protection occurs when the Federal Deposit Insurance Corporation (FDIC) insures deposit balances up to a certain amount, currently $100,000. Implicit protection occurs when regulators resolve bank failures at no loss to any depositor, and when banks become insolvent but are not allowed to fail. The Federal Deposit Insurance Corporation Improvement Act of 1991 (FDICIA) attempted to limit this type of protection, basically by making it harder for regulators either to use failure-resolution policies that protect uninsured depositors or to invoke the too-big-to-fail argument that also shields uninsured depositors from loss.[2]

The argument for removing implicit deposit protection is that if depositors consistently suffer losses during failures, they will become sensitive to the actions taken by their depositories and will require premiums according to risk. Such an outcome would dull banks' incentives for undue risk taking because higher risk would translate into higher premiums for uninsured funds.

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[1] Brewer (1995); Kane (1989); McKenzie, Cole, and Brown (1992).

[2] To learn more about FDICIA and its effects, see Lemieux (1993) and Benston and Kaufman (1997).

This paper suggests a way to reduce deposit protection, not (as FDICIA did) by affecting the implicit protection for deposits over $100,000 but, instead, by affecting the statutory type of protection—that for deposits below $100,000. Specifically, this paper outlines a plan that would make it advantageous for banks to replace some of their insured deposits with totally uninsured deposits. The paper first compares the existing federal credit-flow chain with what the chain would be under the proposed plan; it then explains how the financial model for the proposed plan is the Federal Home Loan Bank system; defines the population from which self-insured depositors would be drawn; sets the parameters and criteria for conversion to self-insurance; calculates the amounts likely to be converted; and provides specifics on the benefits to be conveyed and the risks to be curtailed.

THE FEDERAL CREDIT-FLOW CHAIN, PRESENT SYSTEM COMPARED WITH PROPOSED SYSTEM

To understand more fully the problems and limitations of FDIC insurance and the ways this plan would address them, consider first the two types of federal credit-assistance—direct loans and loan guarantees. Both types are evident in the program for student loans: the government can offer a loan directly to a student, or it can guarantee a loan that another party (e.g., a bank) has made to the student. In terms of risk exposure, there is no difference between the two, for if a given lending is structured half as direct loan and half as loan guarantee and the student later defaults, the government will lose equally on each half. In terms of budgetary treatment by the government, however, the two types of assistance differ. Direct loan amounts must be counted as outlays in the U.S. budget and, as such, may create borrowing that adds to the national debt, whereas with loan guarantees only the estimated future losses enter the budget as outlays. Furthermore, there is a cost disparity between funds that the government provides and funds that it merely guarantees. When the government borrows funds to provide for direct loans or other outlays, it does so by using the central financing mechanism of the U.S. Treasury; that is, it raises funds in large amounts at a time, in highly liquid securities, and totally on a risk-free basis, thus ensuring that the needed funds are raised at the lowest cost possible. In contrast, when banking institutions raise funds to make guaranteed loans, they proceed by issuing types of debt obligations that vary in size, risk, and marketability. Often, raising the funds involves the use of branch offices. As a result, the cost of funds to institutions making guaranteed loans

is significantly higher than the government's cost of funds in making direct loans. For the borrower, this difference in cost of funds means lower costs under direct loans than under loan guarantees. To minimize the discrepancy, the government has instituted central financing mechanisms that copy the model of the Treasury for most loan-guarantee programs under its auspices. In the case of student loans, the central mechanism is the Student Loan Marketing Association (Sallie Mae). Through Sallie Mae, banks can raise funds for student loans more cheaply than through their own means—indeed, almost as cheaply as if they borrowed the funds from the Treasury at cost.

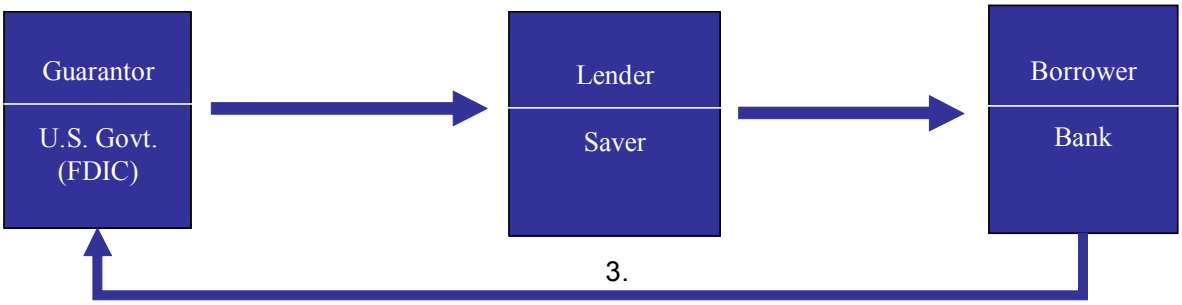
Federal deposit insurance is a loan guarantee program.[3] It guarantees that the money a depositor loans to the bank will be repaid by the insurance fund, up to the statutory limit, if the bank is unable to make payments. Deposit insurance therefore shares the traits of other loan guarantee programs: insured deposits are not outlays in the U.S. budget, nor do they bear on the national debt total; only the estimated future losses on those deposits are entered in the U.S. budget. And in terms of risk exposure, the government assumes as much risk by insuring deposits (loans) to banks as it would have if it had made the loans directly to banks out of its own funds. However, unlike other loan guarantee programs, deposit insurance has not devised a central financing mechanism to enable banks to raise funds more economically.

How the present system of federal deposit insurance works is depicted in panel A of figure 1. The government, via its agency, the FDIC, guarantees loans that savers (depositors) make to banks. Since government assumes all the default risk, the bank gets to borrow money at the risk-free interest rate. To compensate for the assumed risk, banks must pay assessment premiums sufficient to cover insurance losses and FDIC operating costs and to maintain the reserve fund at a mandated ratio. These are flat-rate premiums for all banks in a particular risk category, and may or may not match the underlying risk in a bank's activities. This means that some banks are overpaying for deposit insurance whereas others are underpaying.

[3] See Office of Management and Budget (1991).

Figure 1. Current Deposit Insurance System and Proposed Supplementary System

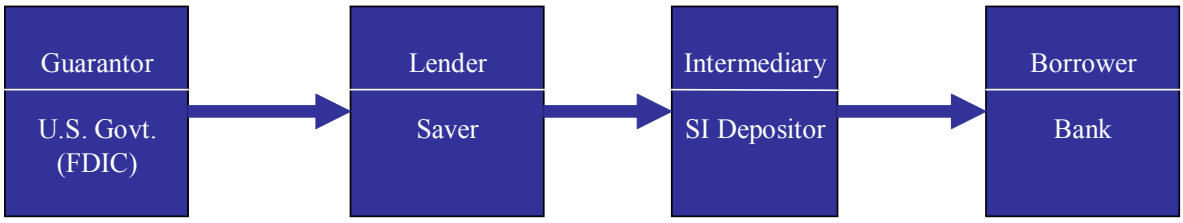
A. Current System



1. FDIC guarantees (assumes default risk for) the saver's loan to bank.
2. Saver lends to (deposits funds in) bank at the risk-free rate.
3. Bank pays the FDIC an assessment premium.

Shortcomings: Moral-hazard problems; small-deposit funding of banks.

B. Proposed System



1. FDIC guarantees (assumes default risk for) the saver's loan to SI depositor.
2. Saver lends to SI depositor at the risk-free rate.
3. SI depositor lends the bank the loan proceeds plus equity at own risk; charges bank own cost of funds plus a risk premium.

Advantages: Bank risk priced into bank's cost of funds; incentives for depositor discipline; less risk of loss for the government.

As noted above, a significant flaw in this system is the moral-hazard phenomenon. Moral hazard can emerge both because the insured depositors lack a motive for monitoring the safety and soundness of their depositories and because some bankers who are already benefiting from underpriced assessment premiums may decide to further exploit the advantage by taking on even more risk. Either way, increased risk ultimately means more bank failures and greater losses for the insurer.

To diminish the moral-hazard phenomenon, we propose a plan that is outlined in panel B of figure 1. This plan is not designed to replace the current system but to perform in tandem with it. The difference between this plan and the current system is the placing of an intermediary in the credit-flow chain, with the initial lender (the saver) serving as lender to the intermediary and the intermediary serving as lender to (depositor in) the bank. The FDIC would guarantee the saver's loan to the intermediary, to the effect that if the intermediary could not repay its debt, the FDIC would repay it. This guarantee would enable the intermediary to borrow at risk-free interest rates. But the guarantee would also dictate that the intermediary's deposit at the bank be statutorily defined outside the realm of FDIC insurance. This requirement means that the deposited funds would remain at the bank at the depositor's own risk. We call these depositors self-insured (SI) depositors. To ensure that SI depositors were able to meet the "own-risk" obligation, they would have to combine a certain amount of their own money with the money they borrowed, so that if the bank in which the package was deposited failed, it would be the depositor's money that was used up first to absorb losses, before loss spilled onto the guarantor of the borrowed portion. To remain viable, SI depositors would need to capture a return at least equal to their cost of borrowing plus a risk premium based on the risk profile of their bank.

To see how this would work, suppose that you have $80,000 and I have $40,000. Under the present system, if we each deposited our money in an account at an FDIC-member bank, both accounts would be insured and both of us would be entitled to compensation at the risk-free interest rate plus a premium based on the size of the accounts, given that larger accounts embody greater economies for the borrower.[4] On this basis, assume that, given the same time to maturity, the bank will pay 4.10 percent on your account and 4.00 percent on mine. In the

[4] There is widespread evidence that larger accounts attract higher rates. Banks routinely present this information in their lobbies, in newspapers, or on the Internet. Table 1 is an example of interest rates paid on certificates of deposit, as advertised in a bank's Web site on July 17, 2000.

proposed plan, however, we would have the option of lending to each other under the same guarantee that we now have at the bank. That is, if you loaned me your $80,000 and I agreed to certain conditions, the FDIC would guarantee that it would repay your loan if I could not repay it. It follows that, since the guarantee would be the same, you would be willing to lend me the money for the same interest rate you would lend it to the bank. The conditions to which I would have to agree would be (1) deposit the loan proceeds at an FDIC-member bank, and (2) do so at my own risk. To fulfill the second provision, I would be required to combine some of my own money with the loan proceeds and invest both parts in bank deposits. The FDIC would say how much of my money would be combined with the loan. If all $40,000 was needed, that would mean that I could finance a $120,000 deposit asset with one-third equity and two-thirds debt—a capital-to-assets ratio of 33.33 percent. Since SI accounts would not be eligible for FDIC coverage, all of the $120,000 would be subject to loss in case of default. Thus, if the bank with the money failed and depositors were subjected to a loss of, say, 10 cents per dollar of deposit, I would lose $12,000, all of which would be taken from equity. (In contrast, if $120,000 was deposited under current FDIC rules, the depositor's loss would be $2,000 and the FDIC's loss $10,000.) If the loss were 33.3 cents per dollar, the entire capital would be wiped out, although enough would still remain in my account to pay off the loan. But if the loss exceeded 33.3 cents—if it were, say, 35 cents—what would be left in my account would not be enough to pay the loan, and the FDIC would be called upon to make good on its guarantee and cover the deficit between the value of the loan ($80,000) and what remained in the account ($78,000). Still, the $2,000 loss would be much less than the $35,000 that the FDIC would have lost if the $120,000 account had been insured.

TABLE 1. RELATIONSHIP BETWEEN ACCOUNT SIZE AND INTEREST RATES ON CDs AS SHOWN IN A BANK'S WEBSITE

Account Size ($)

Maturity	1,000-9,999	10,000-24,999	25,000-49,999	50,000-74,999	75,000-99,999	100,000-249,999	250,000-499,999	500,000 or more
3-6 mo.	5.45%	5.50%	5.55%	5.60%	5.65%	5.70%	5.75%	5.80%
6-9 mo.	6.00	6.05	6.10	6.15	6.20	6.25	6.30	6.35
9-12 mo.	6.05	6.10	6.15	6.20	6.25	6.30	6.35	6.40
1-2 yr.	6.50	6.55	6.60	6.65	6.70	6.75	6.80	6.85
2-3 yr.	6.50	6.55	6.60	6.65	6.70	6.75	6.80	6.85
3-4 yr.	6.45	6.50	6.55	6.60	6.65	6.70	6.75	6.80
4-5 yr.	6.40	6.45	6.50	6.55	6.60	6.65	6.70	6.75
5-6 yr.	6.35	6.40	6.45	6.50	6.55	6.60	6.65	6.70

Source: http://www.pffbank.com/rates/rates.html.

Why would I want to undertake the loan under these conditions? If I put your money and mine as a sum in a single account, the bank would pay more on that account than it would on separate accounts. Assume that the bank would pay 4.15 percent on the larger account. I would then be able to increase my return both because I would earn more on my own money (4.15 percent instead of 4.00 percent) and because I would realize a positive spread between what I would pay you (4.10 percent) and what the bank would pay me (4.15 percent) on the money I had borrowed. Since I would be financing the deposit asset at the ratio of $2 of debt for each dollar of equity, the return to equity would be $1(0.0415) + 2(0.0415 – 0.0410) = 4.25$ percent, or 25 basis points more than I would have made if I had invested just my money alone.

Of course, the additional return would have to be weighed against the risk of loss that I, as an uninsured depositor, would incur if the bank failed. How much of a loss could I assume and still justify the borrowing? The equation for such loss (x) is $1(0.0415 – x) + 2(0.0415 – 0.0410 – x) = 0.040$. In this case $x = 0.00083$. This means that if I thought the likelihood of failure with a loss to depositors of less than 8.3 cents per $100 of deposit was small (less than 50

percent), becoming an SI depositor would make sense; otherwise, I would be better off being an FDIC-insured depositor at a 4.00 percent rate.

Suppose now that you, with $80,000, are the SI depositor and I, with $40,000, am the lender. Under the 33.33 percent capital-to-assets ratio, the $80,000 of equity could support $160,000 of guaranteed borrowing, for an SI deposit of $240,000. Assume that the bank paid 4.20 percent on this (larger) SI deposit. In borrowing the $160,000, you would have as one alternative the borrowing of $40,000 from me at a cost of 4.00 percent and the borrowing of $120,000 from another lender at a cost of 4.15 percent (thus bringing your average cost of borrowed funds to 4.11 percent). The return to equity then would be 1(0.0420) + 2(0.0420 – 0.0411) = 4.38 percent, or 28 basis points more than you would make as an insured depositor. The higher return would enable you to attain a higher break-even point between SI and insured deposits than was feasible in my case. Solving the equation 1(0.0420 – x) + 2(0.0420 – 0.0411 – x) = 0.0410 for x produces a value of 0.00093, meaning that the bank could fail with a loss to uninsured creditors of up to 9.3 cents per $100 of deposit (compared with 8.3 cents in my case) and you would realize the same net return you would have as an insured depositor. Since the likelihood of the bank's failing with a 9.3 cents loss is more remote than that of its failing with an 8.3 cents loss, you would be more apt to invest on a self-insured basis than I would be.

Consider now that after borrowing my $40,000 at a cost of 4.00 percent, you borrowed the rest in separate $40,000 blocks from three other lenders like me at the same cost. Under this option, return to equity would be 1(0.0420) + 2(0.0420 – 0.0400) = 4.60 percent, or 22 basis points higher than if you had borrowed the $120,000 in a lump sum. The higher return would raise the break-even point for SI deposits. Solving the equation 1(0.0420 – x) + 2(0.0420 – 0.0400 – x) = 0.0410 gives a value for x of 0.00167. You could now justify investing in SI funds even if you assumed a possibility of failure with a loss to depositors of up to 16.7 cents per $100 of deposit.[5]

THE FHLB SYSTEM AS A FINANCIAL MODEL

As discussed above, each SI depositor would be borrowing separately in order to raise the needed funds. In terms of earnings, smaller depositors would be at disadvantage to larger depositors because of the economies limitation. Another limitation that would be incurred under individual

[5] These examples also demonstrate how pricing according to risk would be arrived at.

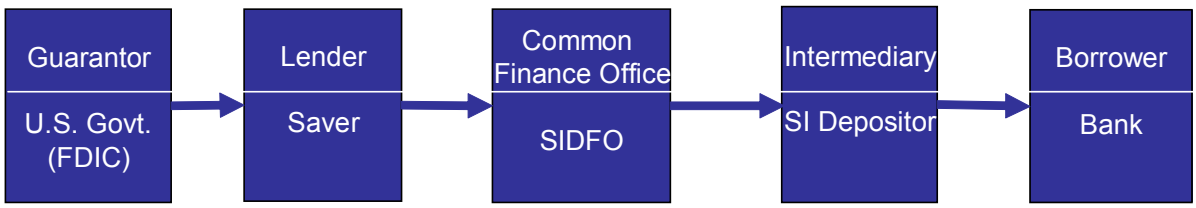
borrowing is that each SI account could remain self-insured only up to its capital, leaving the FDIC (as the guarantor of the SI depositors' lenders) responsible for losses in excess of that capital.

These problems could be overcome if each depositor borrowed the funds through a central financing facility rather than alone. Such a "Self-Insured Depositors' Financing Office" (SIDFO) would issue securities in amounts sufficient to meet the needs of all SI depositors (see panel A of figure 2). The FDIC would guarantee the lenders (the buyers of the securities) to SIDFO against default, and this guarantee would enable SIDFO to raise its funds at risk-free rates. The funds raised would serve as loans to SI depositors after they had posted the required capital. The SI depositors would use the proceeds (together with their capital) to buy certificates of deposit (CDs). The CDs could be in maturities as needed by the banks (3-month, 6-month, 1-year, etc.). This would tend to minimize SIDFO's interest-rate risk. SIDFO's lending rate to SI depositors would be based on three factors: SIDFO's own cost of borrowing, the expenses of operating SIDFO, and the costs during failures when the loss exceeded the SI depositors' equity. The last of those three factors would render SI accounts wholly self-insured.[6] The SI depositors' lending rate to a bank would include their cost of funds plus a perceived risk premium.

[6] For example, under a 10 percent capital ratio, an SI depositor would lose 100 percent of posted capital if the bank failed and depositors lost 10 cents on the dollar. If the loss exceeded 10 cents on the dollar, the excess would fall on future SI depositors through the higher SIDFO rate, instead of on the FDIC.

Figure 2. Comparison between Proposed System with a Common Financing Office [SIDFO] and the Federal Home Loan Bank System

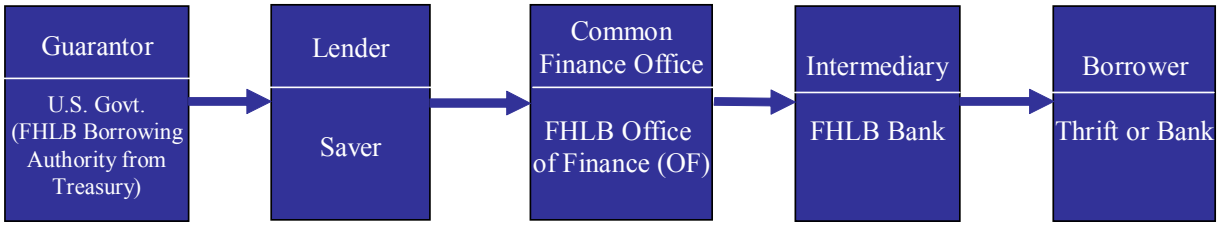
A. Proposed System



1. FDIC guarantees (assumes default risk for) the saver's loan to SIDFO.
2. Saver lends to (i.e., buys securities of) SIDFO at the risk-free rate.
3. SIDFO lends to SI depositor at cost (risk-free rate) plus own operating expenses and excess loss from insolvent SI depositors.
4. SI depositor lends to bank at own risk; charges bank own cost of funds plus a risk premium.

Additional advantages: Better system implementation; maximized funding efficiency (economies of scale) on both borrowing and lending sides; virtually no risk of loss for the government.

B. Federal Home Loan Bank (FHLB) System



1. Government implicitly guarantees the saver's loan to OF.
2. Saver lends to (i.e., buys securities of) OF at near risk-free rate.
3. OF lends (transfers funds) to Federal Home Loan Bank at cost (near risk-free rate).
4. FHLB makes secured (collateralized) loans to thrifts or banks; charges thrift or bank own cost of funds plus own operating costs, OF costs, and costs for FHLB regulator.

Disadvantages relative to SI system: No incentive for market discipline; risk premium not included in bank's or thrift's cost of funds; failure losses shifted to government (FDIC); more government infrastructure and regulation; higher cost of funds for thrifts and banks.

The financial model for the FDIC-sponsored SI-depositor system would be that of the Federal Home Loan Banks (FHLBs), which the SI system would parallel. Panel B of figure 2 is a chart of the FHLB system. In that system, the guarantee is effectuated through the government-sponsored enterprise (GSE) status of FHLBs, which allows them a $4.5 billion line of credit from the U.S. Treasury. The FHLB equivalent of SIDFO is the Office of Finance (OF). The OF sells (through a network of underwriters and discount dealers) and services consolidated obligations (bonds and discount notes) to fund the operations of all 12 FHLBs. The bonds and notes are the joint-and-several liabilities of all FHLBs: if any particular FHLB becomes insolvent, the remaining FHLBs have to pick up the insolvent Bank's obligations. This feature is similar to that in the SI system whereby future SI depositors would absorb the loss from an insolvent SI depositor. The counterparts of SI depositors are the FHLBs. Why, then, set up a new system when we have a similar one already in place? There are three reasons. First, although SI depositors and FHLBs would both hold loan assets of similar default risk, only the former could realize loss in a failure. FHLB loans (called advances) are collateralized—indeed, over collateralized—with the high quality of member assets, so that when a bank or thrift fails, no loss incurs on the advances. The loss is instead shifted to the member's deposit insurer. Hence, with no risk on loans, the FHLBs have no reason to conduct due diligence. Second, in pricing the advances to members, the FHLBs include the cost of borrowing through the OF and add to it their own operating costs, as well as the costs of the OF and those of their regulator (the Federal Housing Finance Board).[7] But the intrinsic risk of the member—the all-important factor in the moral-hazard issue—is not included in the price; indeed, at any given time all members are charged the same rate by their FHLBs. Finally, since the prospective SI depositors would already exist (see below), there would be no need to create new entities and to pass on the costs of operating and regulating them to banks.

THE POPULATION OF SELF-INSURED DEPOSITORS

Where would the SI depositors come from? Currently the usual sources of funds to banks, thrifts, and money market mutual funds (MMMFs) are certificates of deposit, checking accounts, and savings deposits. These sources are often referred to as retail sources because the funds come

[7] All FHLB statistics and references are from Federal Home Loan Bank System, *1999 Financial Report* (www.fhfb.gov).

directly from individuals, usually in small amounts through branch networks. Wholesale sources, in contrast—federal funds, jumbo CDs, brokered deposits, and FHLB advances—are raised in large amounts, mainly from other financial institutions. Where, in this environment, would the SI CDs fit?

SI CDs, because of their leveraged position, would not be suitable for the small savers. A household, for example, would not be likely to convert the family savings into an SI CD when, as suggested in note 6, a 10 percent failure loss would wipe out the entire savings. Instead, the institutions now handling large funds would be the parties most apt to invest in SI CDs. This group includes banks, thrifts, insurance companies, credit unions, and money market mutual funds. Such institutions are already involved in intermediation, borrowing in the financial markets and lending in the same markets after first setting aside a portion of the borrowed funds as capital. This process allows them to leverage up their capital and capture interest-rate spreads between borrowing and lending rates. As SI depositors, these institutions would likewise be leveraging their capital for the sake of rate spreads and would be taking risks like all intermediaries. For example, if an MMMF and an SI depositor both invested, under the same leverage ratio, the same amount of money in an uninsured debt of a certain bank and the bank later failed, both would stand to lose an equal amount of capital. The point is that by becoming an SI depositor, an MMMF would neither be entering a new business nor taking a risk to which it was not accustomed.

What benefit would these intermediaries secure as SI depositors that was not available to them already? The answer would be the option of raising funds at rates equal to SIDFO's cost of borrowing. No intermediary would be able to raise market funds as economically as SIDFO unless the intermediary was able to back its borrowings 100 percent with capital and was able to issue debt in as large quantities as SIDFO. The FDIC's guarantee to SIDFO's lenders would negate the need for 100 percent capital, making it possible for SIDFO to borrow at government-equivalent credit ratings. SIDFO would likely pass the quantity test because it would be raising funds for all SI intermediaries. Consequently, by becoming SI depositors and being able to raise funds from SIDFO at cost, the intermediaries could earn wider interest-rate spreads on their investments than they would as regular intermediaries raising funds under their own names.

Moreover, funds raised through SIDFO would likely be raised in larger blocks than funds borrowed under an intermediary's own name. Consider, for example, an MMMF that currently acquired a $1 million bank CD but, to finance it, had to use 10 separate accounts of

$100,000 each. As an SI depositor, given a 10 percent capital constraint, the MMMF could fund the purchase by combining just one of these accounts with $900,000 of borrowing from SIDFO, thus eliminating 9 of its accounts along with their associated service costs. This line of reasoning applies equally to banks: a bank now funding a $1 million loan through 10 separate deposit accounts could eliminate most or all of these accounts by just borrowing a big lump sum from a single SI depositor. Raising SI funds in the desired amount could follow the pattern used by the FHLB system. A bank could approach an SI intermediary for the desired amount of borrowing, and when the price was agreed upon, the intermediary would turn to SIDFO to finance the transaction. This process would not differ much from the way banks now raise advances from their Federal Home Loan Bank (except that in the case of SI funds, a bank could bargain with lenders all over the country instead of with just one district lender that charged the same regardless of borrower creditworthiness).

PARAMETERS AND CRITERIA FOR CONVERSION TO SELF-INSURANCE

To find out why and when banks and investors would find it advantageous to switch their status as depositors from FDIC-insured to self-insured, one must stipulate certain parameters ("why?") and recognize certain criteria ("when?"). The parameters for "why" would consist of the capital ratios on SI accounts, the lending rate of SIDFO, and the bank-failure risk to SI depositors. The criteria for "when" would be the SIDFO lending rate and the relationship between that rate and the rates paid on existing accounts.

Parameters for "Why?"

As just noted, the three parameters that would establish why a switch to SI status would be advantageous are capital requirement, the SIDFO lending rate, and the spread between that rate and the rates on existing accounts. For *capital requirement* we assume a ratio of 10 percent, which is equivalent to the current requirement by the regulators for well-capitalized banks. This ratio means that a depositor could borrow $9 of funds from SIDFO for each $1 of equity. The *SIDFO lending rate* would be based on the borrowing experience of the Office of Finance in the FHLB system. In 1998 the interest cost on $329.4 billion of average balances of FHLB consolidated obligations was 5.53 percent. After considering that SIDFO would likely be able to borrow somewhat cheaper than OF because the guarantee of SIDFO securities would be explicit (in contrast to the implicit

guarantee of the OF obligations) and after including 2 basis points for the costs of operating SIDFO (based on the OF experience), we stipulate the SIDFO lending rate at 5.50 percent. But since SI depositors would be uninsured, they would need to adjust their returns for *the risk of failure by the bank*. This risk would vary from bank to bank, but for all banks we assume it to be equal to the ratio of the FDIC's provision for losses to insured deposits. This ratio in 1998 was 0.02 percent.[8]

For illustration, consider a bank in which depositors currently earn 5.60 percent on CDs. After risk and taxes, these depositors should be at earnings parity not only with depositors in other banks but also with investors in other instruments, such as commercial paper, Treasury and GSE issues, and tax-exempt issues—otherwise they would not be where they are. Likewise for investors in the other instruments: they, too, could transfer to banks if they felt they would earn more there.

Suppose that one of these depositors switched to SI status. The depositor would then earn the CD rate of 5.60 percent on the $1 of equity and, on each of the $9 of borrowing from SIDFO, would benefit from the 10 basis point spread between the CD rate and SIDFO's lending rate of 5.50 percent. But the SI depositor would need to deduct for the cost of possible failure by the bank. Suppose that in this case the perceived cost was the same as the industry average of 2 basis points. Thus, the return (SIr) for the SI depositor would be $SIr = 1(0.0560 - 0.0002) + 9(0.0560 - 0.0550 - 0.0002) = 6.38$ percent. The depositor would now be netting 78 basis points more than previously.

Would the SI depositor be able to keep that 78 basis point benefit? Most likely not. The accrued extra return would place the depositor out of equilibrium with other (non-SI) depositors in the same bank, with depositors in other banks, and with depositors and investors outside the banks. These non-SI depositors would quickly realize that they, too, could increase returns by securing positions as SI depositors. However, a bank has only a finite need for borrowed funds, and SI accounts could be established only with banks. The non-SI depositors, as they competed with each other to secure a portion of the more profitable SI deposits, could succeed only in raising prices on SI issues and driving down their interest rates. Rates would keep going down until equilibrium was reached between SI and non-SI investors. This point would occur when the interest rate paid by the bank gave the SI depositor, on a net-of-risk basis, the same return as before the depositor's conversion to SI status. That interest rate would be 5.53 percent. With such a rate the depositor

[8] For this assumption to be meaningful in determining the switch between SI and non-SI depositors, we must also stipulate that, in terms of depositor preference, SI depositors would be equally senior to non-SI depositors. Junior status would transfer the risk away from non-SI depositors, rendering the failure risk ratio assumed above pointless.

would effectively earn a net return of (0.053 – 0.0002) + 9 (0.053 – 0.0550 – 0.0002) = 5.60 percent. This would reposition the SI depositor to earnings parity with non-SI depositors, while saving the bank 7 basis points (0.0560 – 0.0553) from what it was paying earlier.

The underlying premise of these conclusions is that the SI depositors would not have the power to secure more than competitive returns. There are three reasons for this to be so. First, SI funds would constitute only a small portion of the aggregate market for funds—a market that would include not only other types of bank funds but also private, government, and municipal issues. Second, the SI funds would be not an addition to, but a replacement for, bank funds; there is no reason to expect that access to SI deposits would cause banks to expand their assets. Third, demand for SI funds could derive only from banks, whereas there would be no limit as to the parties that could supply such funds. In other words, the demand for SI funds would be limited and the supply unlimited, giving banks a high degree of monopsony power and the ability to capture all the surplus value created from the conversion of existing deposits to SI deposits.

Criteria for "When?"

The criteria for determining when depositors would switch to SI deposits would be the SIDFO lending rate and where that rate stood relative to rates paid on existing accounts. Depositors would not be interested in SI CDs unless the rates earned on their current accounts were higher than the SIDFO lending rate. With the rates higher, it would pay to switch to SI CDs because the depositors would be earning positive spreads from the rates paid for SIDFO borrowings and the rates received on SI CDs from banks. By the same token, no bank would want to exchange any of its existing accounts on which it was paying interest below the SIDFO lending rate for SI accounts requiring interest above that rate. For both depositors and banks therefore only accounts currently carrying interest above the SIDFO lending rate would have possibility for conversion to SI deposits.

THE AMOUNTS LIKELY TO BE CONVERTED

What amount of money are we talking about? Given the parameters and criteria set forth above, roughly how much money in bank deposits would be likely to become self-insured instead of FDIC insured?

To estimate the funds that would convert to SI deposits, we would need data on accounts within each bank now paying more than the SIDFO lending rate of 5.50 percent. However, interest-rate data on an individual-account basis are not available. We use, instead, the average interest expense ratio on deposit accounts for the bank as a whole. The interest expense ratio is defined as annual interest expenses on deposits divided by average quarter-end deposit balances for the year. Banks with an interest expense ratio above 5.50 percent would find it profitable to convert to SI CDs.[9]

Using Call Report data, we computed interest expense ratios for time and savings deposits for all banks in 1998. It turned out that numerous banks had expense ratios above 5.50 percent, but only on time deposits. On savings deposits, no banks had ratios above 5.50 percent. Thus, we can infer that all SI funds would come from time deposits. As shown in table 2, there were two types of time deposits: deposits in accounts of $100,000 or more and deposits in accounts of less than $100,000. For time deposits of $100,000 or more, there were 4,535 banks that had expense ratios above 5.50 percent and had issued $213.1 billion of CDs. This amount would convert to SI CDs. For time deposits below $100,000, the 4,597 banks with ratios over 5.50 percent contained $320.3 billion. Converted to SI status, these funds would lose FDIC protection. Accordingly, the sum of funds subject to risk in the system would rise by 81 percent, from the current $396.3 billion to $716.6 billion.

[9] We realize that a bank with an average expense ratio of 5.50 percent, although it would be taken as having switched all accounts to SI status, may well have as many accounts earning more than 5.50 percent and therefore meriting a switch to SI status as it has accounts earning less than 5.50 percent and therefore not justifying a switch. As noted in the text, it may be more precise to estimate the switch on the basis of individual accounts, but such data do not exist. We adopt the average-expense method, thinking that accounts wrongly taken (because of ratios below 5.50 percent) as switching to SI CDs for banks with ratios over 5.50 percent would likely be offset by accounts wrongly *not* counted (because of ratios above 5.50 percent) as switching to SI CDs for banks with ratios below 5.50 percent.

TABLE 2. AMOUNTS OF TIME DEPOSITS CONVERTED TO SI DEPOSITS AND ASSOCIATED INTEREST COSTS
($ Millions)

	Deposit Amounts	Interest Expenses	Average Interest Cost	Number of Banks	Assets per Bank
Banks with Expense Ratios above 5.50%					
Current Time Deposits of $100,000 or More	$213,147	$12,552	5.90%	4,535	$597
As Converted to SI Deposits	*213,147*	*11,851*	*5.56%*		
Current Time Deposits under $100,000	320,286	18,720	5.84%	4,597	388
As Converted to SI Deposits	*320,286*	*17,789*	*5.55%*		
Total of Both over and under $100,000	533,433	31,272	5.87%		
As Converted to SI Deposits	*533,433*	*29,643*	*5.56%*		
Banks with Expense Ratios below 5.50%					
Current Time Deposits of $100,000 or More	183,198	8,023	4.38%	4,132	653
Current Time Deposits under $100,000	439,052	22,513	5.13%	4,109	881
Total of Both over and under $100,000	622,250	30,536	4.91%		

Source: Federal Deposit Insurance Corporation.

For CDs both over and under $100,000, the total converted to SI status would be $533.4 billion, consisting of $53.3 billion of depositor equity and $480.1 billion of borrowing from SIDFO. It should be noted that banks switching to SI CDs would be smaller on average than banks not switching, suggesting that most SI deposits and their benefits would be captured by smaller banks.

BENEFITS CONVEYED AND RISKS CURTAILED

As shown in table 2, it was costing banks with CDs less than $100,000 and expense ratios above 5.50 percent (banks that would be slated to convert to SI deposits) $18.7 billion in interest costs to maintain $320.3 billion of such CDs—a rate of interest of 5.84 percent. How much would

the banks need to pay their depositors to induce them to switch to SI CDs? If (again) the SI depositors could secure only competitive returns, the answer is 5.554 percent. At that rate, the SI depositors would earn (0.055554 – 0.0002) + 9(0.05554 – 0.0550 – 0.0002) = 5.84 percent, bringing them to par with the rate earned before they switched to SI CDs and with the rates currently earned by other (non-SI) investors. The banks, however, would have saved 28.6 basis points (0.0584 – 0.05554) as a result of the SI switch. Likewise, we determined that for banks with CDs over $100,000 the interest cost would decline from 5.90 percent to 5.56 percent after the shift to SI CDs. For both groups of banks together, those with CDs under $100,000 and those with CDs over $100,000, the rate would fall from 5.87 percent to 5.557 percent. With the lower rate, the cost on the $533.4 billion SI CDs would fall from $31.3 billion to $29.6 billion, thus improving the banks' net interest margin by 32 basis points and raising their return to equity (given their 8.5 percent capital ratio in 1998) by 3.8 *percentage* points. In addition, banks would save conversion by being able to meet their funding needs with fewer SI accounts and by not having to pay assessments to FDIC on SI deposits. And the SI intermediaries would benefit by being able to borrow the money in larger amounts and at a lower cost from SIDFO.

Of the $533.4 billion SI CDs, $391 billion would have been insured, that is, the $320 billion of SI CDs switched from accounts below $100,000 plus an estimated one-third of $213 billion of SI CDs from accounts over $100,000 (table 2). The FDIC would shed liability for the $391 billion of insured bank debt (deposits) and assume liability for $480.1 billion of SIDFO debt.

Yet, shifting guarantees from bank debt to SIDFO debt would dramatically decrease the FDIC's odds of incurring loss from bank failure. First, the SI depositors' pricing of bank risk into the cost of funds would prompt banks to lower their risk profile—for example, by improving the credit quality of assets or taking fewer interest-rate risks. This lowered risk profile would mean fewer bank failures, hence smaller losses for the FDIC. In addition, insuring deposits offers the FDIC only one level of protection—the bank's equity. But insuring SIDFO debt adds two more levels: SI depositors' equity and the transfer of failure losses in excess of SI depositors' capital to future SI depositors. By insuring deposits, the FDIC can incur loss as soon as a bank's capital is exhausted. But with SIDFO debt, losses after depletion of the bank's capital are charged to the SI depositors' equity. Thus, if the FDIC were to have as much protection in insuring deposits as from insuring SIDFO debt, the banks' capital ratio

would have to rise by the SI depositors' stipulated 10 percent ratio.[10] After depletion of the SI depositors' equity, any loss would fall on future SI depositors by adding it to the SIDFO lending rate. So the only way the FDIC could incur loss by insuring SIDFO debt would be if, in a series of failures, the loss exceeded the SI depositors' equity and SIDFO (to recoup the excess loss) had to raise its lending rate to a point where borrowing by SI depositors became unprofitable. The SI system would then cease to exist, and the already realized "excess loss" would fall on the FDIC.

SUMMARY AND CONCLUSIONS

Deposit insurance renders deposits at different banks equally attractive and perfectly secure. This effect can lead to unjustified risk taking by banks because raising funds for riskier, higher-yielding assets costs no more than raising funds for less-risky, lower-yielding assets. One way to limit this problem is to rely on uninsured depositors to price bank risk into banks' cost of funds.

This paper offers a plan to increase the amount of uninsured deposits. We note that at present there is one government-guaranteed lender (depositor), one recipient of guaranteed credit (bank), and one level of risk capital (bank's equity) protecting the guarantor (FDIC). In the plan offered here, the recipient of the guaranteed credit would still be the bank. However, no loan guarantee would be given to the depositor of a bank. Instead, the guarantee would apply to investors who bought the securities of a central financing office (SIDFO) that made equity-secured loans to financial intermediaries (SI depositors). The intermediaries would then invest the proceeds in uninsured bank deposits. Under these terms, the government would get double protection against loss (banks' and SI depositors' capital); and the SI depositors, to avoid loss and earn a competitive return, would have no choice but to always monitor banks and demand premiums based on risk.

We found that enough funds could switch to SI deposits to almost double the current amount of uninsured deposits. Funds earning high interest, such as those invested in large-size CDs and brokered deposits, would be those most likely to be converted by banks SI deposits.

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[10] In 1998 the average capital ratio for banks stood at 8.5 percent. Raising that ratio to 18.5 percent would have meant increasing bank equity from $462 billion to $1,006 billion.

We also determined that the cost of funds to banks under the SI method would be substantially lower than the cost under the present system. The reason is that the large-scale borrowing of SIDFO would effectively transform the method under which banks raised funds: the loan-guarantee method would be replaced by the more cost-efficient direct-loan method.

Another aspect of this plan relates to insured-deposit funding and undue risks for the deposit insurer. Some proposals, generally referred to as narrow-bank proposals, propose to limit the insurer's risk by regulating which banks can have insured deposits and what use can be made of the deposits once raised. From this perspective, SIDFO may be seen as a huge narrow bank: it would take in insured deposits and, via the SI middleman, would deliver them to banks without raising concerns for the insurer about failure risks and moral hazard. Such risks and worries would now become the exclusive possession of the SI depositors. But unlike other narrow-bank designs, SIDFO would not impose any limitations on where the banks could invest the borrowed SI funds. Again, it would be for the SI depositors to apply those constraints through their risk premiums.

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