

Federal Reserve Bank
of San Francisco

Spring

1984

Economic
Review

Number

2

Opinions expressed in the Economic Review do not necessarily reflect the views of the management of the Federal Reserve Bank of San Francisco, or of the Board of Governors of the Federal Reserve System.

The Federal Reserve Bank of San Francisco's Economic Review is published quarterly by the Bank's Research and Public Information Department under the supervision of Michael W. Keran, Senior Vice President. The publication is edited by Gregory J. Tong, with the assistance of Karen Rusk (editorial) and William Rosenthal (graphics).

For free copies of this and other Federal Reserve publications, write or phone the Public Information Department, Federal Reserve Bank of San Francisco, P.O. Box 7702, San Francisco, California 94120. Phone (415) 974-3234.

A View On Deposit Insurance Coverage

Frederick T. Furlong*

The FDIC is experimenting with a "modified payout" plan for dealing with bank failures. By eliminating what has been an implicit insurance guarantee on large deposits, the plan re-establishes the traditional separation of insured and uninsured deposits on the basis of account size. The modified payout approach to deposit insurance protects the "small depositor" but does not contribute to the stability of the banking system. The latter role of deposit insurance dictates that deposits should be insured on the basis of account maturity, with liquid deposits receiving insurance.

(This article was written before the FDIC announced that it would cover all deposits at the troubled Continental Illinois Bank and Trust Co. in the Spring of this year. The Continental case points up the problem connected with leaving large-denomination liquid deposits uninsured, and raises doubts about the viability of the modified payout plan as it was originally designed.)

The relationship between the Federal Deposit Insurance Corporation and depositors could be undergoing a substantive change. Since the 1930s, deposit insurance has helped to stabilize the banking industry by assuring depositors that their funds were safe. Recently, however, the FDIC has implemented a plan to increase the riskiness of large-denomination deposits as a means of protecting the insurance fund.

Putting holders of large-denomination deposits at risk may not seem like a significant alteration to the deposit insurance system. After all, since the inception of federal deposit insurance, insured and uninsured deposits have been segregated on the basis of account size. Over the years, the insurance limit has been increased from \$2,500 in 1933 to the current level of \$100,000¹, but the distinction has nevertheless been maintained, at least on paper. In practice,

with some exceptions (the most notable being the failure of Penn Square Bank in 1982), holders of "uninsured" deposits have not incurred losses from bank failures.

This *de facto* insurance of large-denomination accounts primarily has been a by-product of the procedures used by the FDIC to handle many problem banks, and has not stemmed from the view that the "proper" role of deposit insurance encompasses all deposits. To the contrary, the FDIC sees the *de facto* coverage of all deposits as a problem in the administration of deposit insurance.² Accordingly, it has decided to adopt a new approach that will increase the probability of losses to holders of large accounts.³

The FDIC's plan can be viewed as affirming the validity of separating insured and uninsured deposits by account size. This paper's purpose is to examine critically both the FDIC's plan and the appropriateness of using account size to determine which deposits are insured. In particular, the paper evaluates whether a plan to increase the riskiness of large-denomination deposits (and not other deposits) is consistent with the basic function of deposit insurance.

The paper concludes that imposing greater risk on "large depositors" is consistent only with the "small-depositor" protection rationale for deposit insurance. Increasing the riskiness of all large-denomination deposits is not compatible with the objective of achieving stability in the banking sys-

*Economist, Federal Reserve Bank of San Francisco. My thanks to the editorial committee, Jack Beebe and Michael Keeley for helpful comments.

tem through deposit insurance. Indeed, since the bulk of large-denomination deposits is held in short-term accounts, raising the level of risk on those deposits could make the banking system more unstable by increasing the probability of “bank

runs.”⁴ The paper suggests that *if* the main purpose of deposit insurance is to enhance the stability of the banking system, then it may be more appropriate to base insurance coverage mainly on terms of maturity, with short-term deposits receiving the insurance coverage.

I. The FDIC Plan

Until recently, the *de facto* coverage of so-called “uninsured” deposits has resulted from the way that the FDIC has chosen to deal with many bank failures.⁵ The FDIC’s propensity to use purchases and assumptions, rather than deposit payouts and asset liquidations, has stemmed mainly from practical considerations. For example, purchases and assumptions have been judged to be less costly to the insurance fund than direct payouts. Covering even large deposits when using purchases and assumptions primarily reflects the FDIC’s view that to have done otherwise would have been too disruptive to financial markets, since it can take some time for depositors and the FDIC to recover their claims when assets are liquidated.

In this context, the coverage of large-denomination deposits *per se* has been an incidental, not essential, function of deposit insurance. If possible, the FDIC would prefer to subject large-deposit holders to risk, lest they have no reason to be concerned with the financial condition of banks. Large depositors would otherwise not devote resources to monitor banks or constrain risk-taking by demanding interest-rate premiums that reflect the risk exposure of banks. Such a situation enhances the incentives for banks to engage in risky activities, if the banks also were left unchecked by the FDIC.

The potential for increased risk-taking when deposit insurance is provided is essentially the moral hazard problem faced by all insurers. In principle at least, the FDIC could attempt to reduce the problem by manipulating insurance premiums. In practice, the current fixed-rate premium does not curtail risk-taking on the margin, and it is unlikely that an effective structure of risk-related premiums will be adopted.⁶ Consequently, the FDIC, in conjunction with other bank-regulatory agencies, probably will continue to rely on supervision and regulation as the main tools to restrain banks from engaging in exces-

sively risky enterprises. However, the FDIC has taken the position that deregulation and increased competitiveness in banking have made the use of these latter tools complex and costly.⁷ So, in the case of large-denomination accounts at least, the FDIC has decided to solve the moral hazard problem by eliminating what has been an implicit insurance guarantee.

To remove the implicit insurance guarantee for large depositors, the FDIC is experimenting with what might be called a modified payout approach for dealing with bank failures. Under the new approach, holders of large-denomination deposits will receive immediately *pro rata* shares of what the FDIC thinks it can recover from the liquidation of a failed bank’s assets.⁸ This means that holders of large-denomination deposits will not have their funds tied up in bankruptcy proceedings.⁹ Consequently, the modified payout approach avoids what the FDIC views as one of the major sources of disruption to financial markets associated with the traditional mechanism for payouts.

Under the FDIC’s experimental plan, insured deposits will continue to be handled in two ways. In situations where the FDIC cannot find another institution willing to assume the insured deposits, the FDIC will merely pay off the insured depositors. When the FDIC can find a willing bidder, the insured deposits and a comparably valued set of assets will be assumed by the other institution. The latter situation essentially represents a combined payout/purchase and assumption arrangement.¹⁰

The impact of the new FDIC policy will be to increase the uncertainty among “uninsured” depositors as to whether they will share in the losses of a failed bank. With a greater probability of financial loss, holders of large-denomination deposits will have an incentive to monitor banks more closely, and the cost of uninsured funds will reflect the risk

exposure of depository institutions. In this way, uninsured depositors acting in their own interest will theoretically serve as a check on the risk-taking of depository institutions.

The FDIC's call for reliance on market forces is quite appealing. The current move toward deregulation in financial markets and other industries is based on the sound premise that allowing greater latitude for market forces to operate can result in gains in efficiency for the economy. However, one

must recognize that the apparent gains promised by the FDIC plan merely stem from undoing adverse side effects introduced by the provision of deposit insurance. Nothing extra can be gained; there simply will be uninsured deposits. The questions remain: Why do we have deposit insurance in the first place? And, is using account size to determine insurance status consistent with that function? These issues are addressed in the next two sections.

II. Role of Deposit Insurance

It is probably safe to assert that the function of deposit insurance is to protect depositors. However, to identify the categories of deposits that should be insured, it is first necessary to determine why depositors need to be protected. Two objectives generally are ascribed to deposit insurance. The first is that deposit insurance should protect depositors of modest means from incurring losses due to bank failures; the second is that it should protect the economy in general from the consequences of instability in the banking system.

Small-Depositor Protection

The first objective, of course, is the "small-depositor" rationale for federal deposit insurance. This justification for deposit insurance is at the root of the policy that determines insurance status on the basis of deposit account size. While there are a number of facets to the small-depositor argument, an important distinguishing feature is that deposit insurance is intended to protect depositors from the private cost of bank risk. Small depositors, for example, have been considered savers of limited means, who are, in comparison to large depositors, at a disadvantage in discerning (that is, at a sufficiently low cost relative to the benefits) the riskiness of depository institutions. In addition to being less effective in determining the risk of individual institutions, small depositors are presumed to be more susceptible to risk exposure because they are less able to diversify their financial holdings.

Under the small-depositor justification, the function of federal deposit insurance is to bear the risk for the insured depositors. Moreover, it is the role of the insurance agencies to assume the responsibility

of constraining risk-taking by banks. Federal insurers take on this responsibility instead of the private market alone because they are assumed to be better able to acquire information on banks and to constrain their risk-taking than small depositors. Leaving large depositors uninsured, of course, implies that large depositors are at least as good, if not better, than the federal agencies at determining the riskiness of banks, and in pricing the private risk accordingly.

While the small-depositor rationale provides a basis for having small-denomination deposits insured and large-deposit accounts uninsured, it does not explain why deposits should be treated differently from other assets. The difficulties of small depositors likely are the same as the ones facing savers with small interests in mutual funds, or only a few thousand dollars invested in tax-exempt bonds issued by, say, the Washington Public Power Supply System. It might be argued that it is "desirable" as a matter of public policy to provide a safe savings vehicle for small savers. However, even if this were the case, it is not necessary to have deposits serve as the risk-free asset. Indeed, savers today can invest in liquid nondeposit securities that are free of default risk by purchasing shares in money market mutual funds that hold only Treasury securities. Moreover, mutual funds and brokered deposits can allow even small savers an opportunity to realize the benefits of diversification.

Overall, perhaps unlike the 1930s, financial markets today appear to supply ample opportunities for safe investments outside the system of depository institutions. If protecting small savers were the

reason for maintaining insurance, federal deposit insurance probably could be abandoned, or the maximum coverage reduced to some nominal level.

Economic Stability

The second objective attributed to deposit insurance, protection of the economy in general from the impact of disruptions in the banking industry, *perhaps* provides a better reason for having deposit insurance. In this context, deposit insurance contributes to the overall stability of the economy by eliminating the adverse effects of bank runs. The special concern over runs on deposit-creating institutions appears to be fostered by two presumptions. First, the function of depository institutions makes them more susceptible to runs than other types of firms. Second, the costs of bank runs are high and extend to the economy in general, not being limited to those incurred by the banking system.

One reason that the economic costs associated with bank runs could be particularly widespread and pronounced is that depository institutions are integral parts of the nation's payments mechanism and comprise channels through which monetary policy operates. In this regard, a collapse of the banking system could lead to a large and unexpected contraction in the money supply, which, with a lag, would result in a severe and pervasive reduction in economic activity. To the extent that the significant economic costs of bank runs are related to the contraction in the money stock, it might be argued that deposit insurance should only protect deposits included in some measure of money. This does not mean that it would be sufficient to insure only money, however defined. The main protection offered the money supply through deposit insurance does not consist of the actual payments made to depositors when an individual bank fails. The main contribution of deposit insurance to monetary stability is the prevention of the bank runs in the first place. That is, the monetary benefit of the insurance funds is not that they provide liquidity for banks in the event of a financial crisis, but that they avert the need for such liquidity.¹¹

It should be noted here that even if the deposit insurance were primarily intended to stabilize the money stock by paying off depositors of failed banks, it may not be practicable to cover only some

narrowly defined set of deposits, say, those included in M1. Given the potential for shifts between insured and uninsured deposits and the consequent distortions to the money supply, it could be necessary to insure a broad set of liquid deposits.

The impact of the monetary contraction during the depression of the 1930s, of course, has been recognized for some time, and the monetary consequences of bank runs have stood as a primary defense of deposit insurance. However, some recent studies argue that the adverse consequences of bank runs go beyond those associated with money and the money creation process. For example, Bernanke¹² and Diamond and Dybvig¹³ point out that the breakdown of the intermediation process resulting from bank runs imposes real economic costs.¹⁴ Bernanke maintains that the malfunctioning of the system of intermediation during the 1930s was an important contribution to the severity of the depression. In cases where concern over banks runs is motivated by banks' function as purveyors of credit, deposit insurance again should aim to protect the banking system by preventing runs and not merely to pay off depositors at failed banks.

Linking the justification for federal deposit insurance to the presence of economy-wide costs of bank runs raises some question about the logic of having federal deposit insurance and the FDIC's plan to increase the riskiness of large-denomination deposits. According to the rationale of improving economic stability, deposit insurance is not needed because of depositors' inability to protect themselves, but it is warranted on the grounds that depositors protecting themselves is not sufficient to guarantee stability in the banking system. This rationale does not deny that providing deposit insurance creates the potential for even greater risk-taking by depository institutions because depositors have little or no reason to be concerned about the financial condition of individual institutions. However, the most that can be expected from leaving large deposits uninsured is that banks will be forced to take into account the cost of their risk-taking to the extent that it affects the uninsured depositors. This means that, while putting depositors at risk may undo the moral hazard problem introduced by deposit insurance, it does not ensure that the total cost to society of bank risk-taking and bank runs will be considered. If

support for deposit insurance is based on the market's failure to address the problem of bank runs fully, then it would seem somewhat contradictory to look to the market to help alleviate the problems created by deposit insurance.

To the extent that bank runs and the resulting cost to society explain the need for deposit insurance, then deposit insurance should be extended on the basis of solving these problems. In this regard, leaving larger-denomination deposits uninsured makes sense if doing so has little or no bearing on

the problem of bank runs. However, as will be discussed in the next section, justifying deposit insurance on the grounds that it is necessary to ensure financial stability does not appear to call for the separation of insured and uninsured deposits on the basis of account size. In fact, if anything, this role of deposit insurance suggests that the first criterion for determining insurance status should be account maturity, with short-term accounts being insured regardless of denomination.

III. Deposit Coverage

The economic-stability rationale for having deposit insurance dictates that the first role of deposit insurance should be to prevent runs on banks. Consequently, the key to determining which deposits are to be insured should lie in the goal of reducing the susceptibility of banks to runs. On this point, Kareken¹⁵ suggests that depository institutions are subject to runs because deposits are fixed-dollar claims against depositories that hold risky assets.¹⁶ With risky portfolios, depository institutions can incur losses that exceed net worth, while with a fixed-dollar claim, a depositor can avoid sharing in those losses by withdrawing funds before other depositors. This distinguishes deposits from the shares of many money market mutual funds. In the case of mutual funds using mark-to-market accounting, fluctuations in the value of assets are reflected daily in the value of the money funds' shares. A shareholder automatically participates in the losses as well as gains on a *pro rata* basis, and cannot shift losses to other shareholders by redeeming shares.¹⁷

Without deposit insurance, all depositors have incentives to participate in runs on banks. The presence of large volumes of deposits essentially available on demand—checking accounts, savings accounts, and money market deposit accounts—and short-term time deposits makes the problem of bank runs particularly acute. The holders of these deposits can react quickly to a real or a perceived deterioration in the financial condition of banks. This is as true, if not more so, for depositors with large-denomination liquid accounts as it is for depositors with small liquid balances. Holders of longer-term

deposits could “run” in the sense that they would not roll their accounts over at maturity. But such a process would be drawn out over a period of time that would allow depositors and regulators an opportunity to assess the condition of individual institutions more accurately.

With regard to longer term deposits, it might be argued that the premature withdrawal provisions on time accounts also enable holders of such deposits to make a run on banks. Under current regulations, however, banks are not obliged to honor requests for early withdrawals, except in cases involving the death or mental incapacitation of depositors, although they may allow withdrawals from time-deposits prior to maturity.¹⁸

While the combination of risky assets and par-value short-term deposits makes banks susceptible to runs, the fact that banks hold illiquid assets funded by liquid deposits compounds the problem. The mismatch of asset and liability durations contributes to the vulnerability of the banking system in two ways. First, to the extent that most institutions are exposed to interest-rate risk, fluctuations in asset values relative to liabilities will be correlated across depository institutions. A sharp rise in interest rates would result in widespread capital losses among depository institutions, and these losses could precipitate a general run on banks as depositors try to avoid sharing in the losses. Second, asset and liability mismatches also can contribute to the problem of bank runs when institutions are unable to meet the demand for withdrawals through maturing assets. The “forced” liquidation of longer-term assets may

result in further losses.¹⁹ This could be particularly true of certain assets such as consumer loans for which there is not a well-established secondary market.

On this last point, it has been argued that the Federal Reserve as the lender of last resort could ease the adjustment for banks. Through the discount window, depository institutions do not have to liquidate assets, but can merely commit them as collateral on loans from the Federal Reserve. This does not mean that the "proper" administration of the discount window would eliminate the usefulness of some form of deposit insurance. The Federal Reserve, in providing general liquidity, does not automatically do away with the reasons banks are susceptible to runs—deposits remain fixed-dollar claims and depository institutions' portfolios remain risky. Depositors could still have the incentive to "run" to avoid sharing in the losses of depository institutions. To the extent that there are advantages to preventing bank runs, rather than merely attempting to meet the increased demand for liquidity when runs occur, the commitment by the central bank to provide liquidity has to be coupled with assurances to holders of short-term deposits that their funds can be withdrawn at par value.

The above discussion suggests that the apparent conflict between plans to increase depositor risk and plans to stabilize the banking system can be resolved if the distinction between insured and uninsured deposits is made on the basis of account maturity. Short-term deposits, which can precipitate runs on banks that in turn impose costs on the economy, should be insured. Without convincing arguments for why the probability of runs, and thus the expected costs to society, would decline significantly as the size of accounts rises, it would seem that the insurance of short-term deposits should include both large-denomination and small-denomination accounts. Long-term deposits, which do not contribute to runs, conceivably could be left uninsured to give holders of these deposits an incentive to monitor the activities of depository institutions.

This recommendation, of course, raises the problem of specifying what constitutes a short-term and a long-term. The purpose of this paper is not to provide a definitive solution to this problem because, in the end, the selection of any one maturity

has to be arbitrary at the margin, although no more arbitrary than the choice of a cutoff *size* for deposit insurance.

However, as a general matter, the deposit maturity chosen should allow an adequate period of time for evaluating the financial condition of banks. Along these lines, the appropriate maturity for determining insurance status could be tied to the frequency of bank examinations. Among the federal bank regulatory agencies, examination policies call for most "healthy" banks (CAMEL ratings of 1 and 2) to be reviewed to some degree at least every 12 months,²⁰ although for some state-member banks the suggested minimum is once every 18 months. Banks found to have more than moderate financial problems (CAMEL ratings of 4 or 5) are reviewed twice a year or more. Given the current examination policies, it might be reasonable as a starting point to think about a one-year maturity, or perhaps slightly longer, as more or less the upper-end for the cutoff between insured and uninsured deposits.²¹ If a one-year maturity were used to determine which deposits would be insured, the bulk of the large-denomination accounts would initially be covered. Data on large commercial bank holdings of negotiable CDs indicate that the average remaining maturity on these accounts was about 3-1/2 months as of November 1983, with 85 percent of the CDs maturing in less than one year.

Extending deposit insurance on the basis of account maturity, of course, could affect the maturity structure of deposits. For example, if deposit insurance were provided at a subsidized rate that held up the yields on short-term accounts compared to those on longer-term accounts, relatively more funds would flow to the liquid insured accounts. This could exacerbate the problem of mismatched asset and liability durations at many institutions. Thus, using maturity as the foremost criterion for determining insurance status would not make the insurance agencies' job any easier. The insurance agencies still would have to be concerned about the problems of regulating bank portfolios and properly pricing deposit insurance. Nevertheless, insurance coverage that focuses first on account maturity is consistent with the use of deposit insurance to prevent bank runs.

IV. Conclusion

Traditionally, the insurance status of deposits has been determined by account size. As a practical matter, however, the size limitation has not been binding because the FDIC has chosen to handle many bank failures through purchases and assumptions. To re-establish the separation of insured and uninsured deposits according to the size of accounts, the FDIC has begun to use a modified payout approach in some bank failures. Large-denomination deposit holders now can expect to incur losses when banks fail. The objective of the FDIC's plan is to shift to the market more of the burden of monitoring risk-taking by banks.

In essence, the FDIC's new approach delegates to large depositors at least part of the responsibility for "pricing" bank risk. The benefit of this approach is that it reduces the moral hazard problem connected with the provision of deposit insurance. However, it only ensures that the cost of bank risk as it affects *uninsured* depositors will be taken into account. This is not a drawback if deposit insurance only is intended to protect small depositors. That justification for insurance is based on the assumptions that it is the losses to depositors from bank failure that are important and that large depositors are effective in determining and pricing the cost of

bank risk. In other words, there is no reason to insure large depositors because they can protect themselves.

FDIC's plan does present a problem for the stability rationale for deposit insurance. This justification for deposit insurance maintains that depositors protecting themselves is not enough. The foundation for the economic stability argument is that private market arrangements cannot be expected to solve the problem of bank runs and that bank runs lead to economy-wide losses. Putting large depositors at risk does not address the bank run issue and could well exacerbate the problem.

The economic-stability rationale for deposit insurance does not point to a separation of insured and uninsured deposits based on account size. This paper points out that the reasons banks are more susceptible to runs than other firms is that bank portfolios consist of a large volume of par-value *short-term* deposits and risky illiquid assets. Thus, the economic stability argument suggests that insurance status should be related first to deposit maturity, not account size. Short-term deposits should be insured, and these short-term deposits would include accounts in large denominations.

FOOTNOTES

1. Increases in insurance coverage generally have been intended to allow for increases in the level of prices. However, the most recent increase to \$100,000 in 1980 was prompted in part by concern over disintermediation at depository institutions.

2. Federal Deposit Insurance Corporation, **FDIC: The First Fifty Years**, 1984, p. iv.

3. As part of the FDIC plan to increase the riskiness of large-denomination deposits, uninsured depositors incurred losses in connection with the failure of two commercial banks in March, 1984.

4. The term "bank runs" is intended to refer to runs on all types of depository institutions.

5. For a discussion of the procedures used by the FDIC in purchases and assumptions; see B. Bennett, "Bank Regulation and Deposit Insurance: Controlling FDIC's Losses," in this **Economic Review**.

6. Federal legislation has been introduced that would give the Federal Deposit Insurance Corporation authority to use a system of risk-based insurance premium rebates. Under

the proposed system, banks in lower risk classes would receive larger rebates on insurance premiums paid during a year than those in higher risk classes. Such a change in the administration of federal deposit insurance would provide some check on risk-taking by banks, but the impact likely would be modest since the differences in rebates among the risk categories still would be quite small.

7. FDIC (1984), *ibid*, p. iv.

8. This plan is discussed in Federal Deposit Insurance Corporation, **Deposit Insurance in a Changing Environment**, 1983, pp. III-4 to III-6.

9. In the event that collections from liquidating assets are greater than expected, uninsured depositors (and other creditors) will receive additional payments. However, if the amount realized from the liquidation of assets is less than originally estimated by the FDIC, the insurance fund will absorb the loss.

10. In its report to the Congress—FDIC (1983), *ibid*, p. III-5—the FDIC mentions the possibility that the partial "advances" to uninsured depositors also could be accomplished through an assumption arrangement. That is, in-

stead of making a direct payment to uninsured depositors, the deposit liabilities equal to the FDIC's estimate of the **pro rata** share for the uninsured depositors could be assumed by another institution.

11. This point is made in Friedman, Milton, **A Program for Monetary Stability**, New York: Fordam University Press, 1960, pp. 20-21.

12. Bernanke, Ben S., "Nonmonetary Effects of the Financial Crisis in the Propagation of the Great Depression," **The American Economic Review**, June 1983, pp. 257-276.

13. Diamond, Douglas W., and Philip Dybvig, "Bank Runs, Deposit Insurance, and Liquidity," **Journal of Political Economy**, June 1983, pp. 401-419.

14. It could be argued that depository institutions also impose costs on each other to the extent that the failure of one bank can cause another bank to fail. If there were no other ramifications of bank failures, the costs would be borne only by bank shareholders, depositors and other creditors.

15. Kareken, John H., "The First Step in Bank Deregulation: What About the FDIC?," **The American Economic Review**, May 1983, pp. 198-203.

16. Bryant, John, "A Model of Reserves, Bank Runs, and Deposit Insurance," **Journal of Banking and Finance**, December 1980, p. 335-344, also attributes the vulnerability of banks to runs to their holdings of risky assets. Bryant states, "to generate a model of useful deposit insurance, it is first necessary to generate deposit liabilities backed by risky assets. Once one has done so, the possibility of some form of bank runs immediately follows." (p. 335).

17. A number of money market mutual funds amortize changes in the value of an existing asset over the life of the instrument. For these funds, a shareholder can avoid at least some previously incurred losses by redeeming shares before other shareholders.

18. For a discussion of early withdrawal penalties on time deposits, see Furlong, Frederick T. and Gary C. Zimmerman, "Deregulation and Withdrawal Penalties," **Weekly Letter**, Federal Reserve Bank of San Francisco, December 9, 1983.

19. Diamond and Dybvig, *ibid*, use the illiquidity of bank assets as the rationale for banks being susceptible to runs. In their model banks incur losses because of the high cost of liquidating assets to meet deposit withdrawals.

20. In the case of "healthy" banks (CAMEL ratings of 1 or 2), for the FDIC, over a 36-month period one examination must be a comprehensive examination and less extensive reviews can be performed in each 12-month period during which the formal examination is not conducted.

21. In principle, the insurance status should be determined on the basis of remaining maturity, but in practice it may be necessary to use original account maturities.