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Issues in the Reform of Deposit Insurance
and Regulation of Depository Institutions

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Abstract

In the United States, the thrift industry crisis and evidence of financial weakness in the banking industry have raised concerns about the cost-effectiveness of the present framework of deposit insurance and regulation of depository institutions that serves to control systemic risks. The reform proposals discussed in this paper aim to create a more cost-effective approach by either modifying the operation of the deposit insurance funds to reduce the value of the deposit guarantee or altering those regulations of depository institutions that limit portfolio risk to reduce their overall cost. Consideration is given to both the potential effectiveness and practicability of the proposed reforms.

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Summary

In the United States, the insolvency of a large number of thrift institutions and evidence of f nancial weakness in the commercial banking industry have raised concerns about the Government's reliance on deposit insurance and regulation of depository institutions to minimize systemic risks. While effective in containing systemic risks, the cost to taxpayers and to the economy of the existing approach has been high and has not been confined to the resolution of insolvent savings and loans. Regulations controlling the risk taking of depository institutions can impose efficiency losses on the economy. In particular, the financial product restrictions placed on depository institutions, and especially on banks, appear to have limited the ability of these institutions to reallocate resources in response to shifts in the profitability of financial services.

Reform proposals discussed in this paper aim to create a more cost-effective approach to managing systemic risks in one of two ways. One type of reform proposes to modify the way in which the deposit insurance funds are currently operated so as to lower the value of the guarantee by limiting the time it remains in force for reducing the incentive for risk taking. The second type focuses on those regulations of depository institutions that control their portfolio risk and seeks to lower their overall cost by relaxing one regulation while strengthening others.

With a view to implementation, a timely closure rule for a troubled depository institution appears to be the most feasible and effective of the proposed reforms to the operation of the deposit insurance funds. Measures to improve the ability of regulators to assess the economic net worth of depository institutions, such as partial movement toward market value accounting (which would require at least some assets and liabilities to be recorded at their market values), could apparently serve to improve the effectiveness of the closure rule. Moreover, the cost of regulations to limit risk taking by depository institutions could apparently be reduced by permitting a company affiliated with a depository institution in a holding company to engage in securities activities, while strengthening capital adequacy standards to restrain any possible increase in risk taking by the depository institution.

I. Introduction

In the United States, the insolvency of a large number of thrift institutions and evidence of financial weakness in the commercial banking industry have raised concerns about the viability of the Government's deposit insurance funds and regulation of depository institutions that serve to minimize systemic risks. 1/ The Administration's estimate of the present-value cost of resolving insolvent savings and loans insured by the Government is the range $89 billion to $132 billion, while the profitability of the banking industry (of money center banks in particular) declined markedly in the 1980s. Much of the fall was due to a step-up in loan loss provisions, suggesting an increase in the risk of banks' asset portfolios that was not fully priced.

Government deposit insurance serves as the bulwark against systemic risks by assuring confidence in depository institutions. However, since this guarantee is not priced by the Government on a risk-adjusted basis, its value to a bank or thrift institution increases with the riskiness of its portfolio of assets. 2/ Thus, the Government to limit the value of its contingent liability restricts the permissible activities and portfolio investments of depository institutions and sets capital-adequacy standards. The Government also seeks to reduce its potential exposure to losses through supervision and examination to limit the period of time that the guarantee remains in effect. 3/

The set of measures that the Government uses to contain systemic risk is in this regard effective. A financial crisis of considerable scale in the thrift industry has not precipitated a banking panic or disruption of the payments system. However, the cost to taxpayers and the economy to achieve this policy objective is high and is not confined to the resolution of insolvent savings and loans. The regulation of depository institutions to control risk taking can also impose efficiency losses on the economy. In particular, the financial product or activity restrictions placed on depository institutions, and especially on banks, appear to have limited their ability to reallocate resources in response to shifts in the profitability of various types of financial services.

1/ Systemic risks refer to the externalities often associated with the illiquidity or insolvency of a depository institution, such as a banking panic or disruption of the payments system. Depository institutions in the United States include commercial banks, thrift institutions (savings and loans) and credit unions. While this paper focuses on banks and thrifts, the basic conclusions apply to credit unions as well.
  2/ See Merton (1977).
  3/ For recent surveys of banking regulation, see Kareken (1986) and Benston, Eisenbeis, Horvitz, Kane and Kaufman (1986). Barth and Bradley (1988) provided a detailed discussion of thrift regulation.

The purpose of this paper is to examine two types of reform proposals that seek to create a more cost-effective approach to managing systemic risks. One type aims to modify the way the deposit insurance funds are currently operated to reduce the opportunity or incentive for risk taking, while the other focuses on those regulations of depository institutions that serve to control their portfolio risk. Examples of the former are a timely closure rule for troubled depository institutions and risk-related deposit insurance premiums and of the latter are financial product deregulation, corporate separateness measures and strengthened capital adequacy standards for banks and thrifts.

The remainder of the paper is organized as follows: section II discusses the rationale for government deposit insurance and for regulations to promote the safety and soundness of depository institutions. The third section characterizes the value of the deposit guarantee using options pricing theory. Section IV examines proposed reforms to the operation of the deposit insurance funds that limit the Government's potential exposure to losses and reduce the incentive for risk taking. The fifth section considers reforms to the regulations of depository institutions that could reduce their overall cost without significantly increasing the Government's risk exposure. Section VI offers some conclusions.

II. The Demand for Government Deposit Insurance

Why are bank and thrift deposits insured by the Government? A general answer is that society demands such explicit or implicit guarantees. Households and businesses appear to have strong preferences for risk-free deposits, as evidence by the continued support for government deposit insurance despite its high cost to taxpayers. At a more structural level, this preference could stem from externalities associated with the failure of a depository institution. Disruptions to the intermediation of credit flows and to the payments system are two types of externalities often associated with such a failure. Deposit insurance could serve to mitigate these costly disruptions by assuring confidence in depository institutions. The preference also could arise from risk aversion. In which case, "fairly" priced government or private guarantees could contribute to a more efficient allocation of risk.

Much of the debate on the need for government deposit insurance has focused on the externalities whereby financially sound institutions are exposed to risks from the illiquidity or insolvency of other banks or thrifts, so-called contagion effects. One form of contagion is a banking panic, in which depositors demand a large-scale conversion of deposits to currency. A banking panic is distinguished from a run on a single depository institution by the number of institutions involved. A bank run can be caused by the response of depositors to adverse information about the value of the institution's portfolio, such as news of a business or crop failure. If the institution honors depositors' requests for currency in sequence, each depositor has an incentive to participate

in a run to avoid placing a claim after the institution's assets have
been exhausted. A widespread banking panic can occur if depositors
receive information of an adverse macroeconomic shock or if imperfectly
informed depositors rely on the behavior of other depositors as signal
of the value of depository institutions' assets. 1/

The cost of a banking panic stems from the potential contraction in
loans as deposits are withdrawn and reserves are depleted. 2/ Deposit
insurance effectively eliminates the incentive for depositors to parti-
cipate in a bank run or banking panic. Alternatively, the monetary
authorities could mitigate the cost of a banking panic through increased
lending at the discount window to accommodate the greater demand for
currency. However, the quality of assets that would be pledged as col-
lateral could be a source of risk to the central bank, particularly if
depository institutions were unregulated.

Another form of contagion could stem from a default by a bank par-
ticipating in the private payments system, primarily the Clearing House
Interbank Payments System of the New York Clearinghouse Association,
which has the potential to disrupt the entire system and to impose a
cost on the economy by restricting transactions. The concern is based
on the fact that the intraday credit exposures of participating banks,
which arise from differences in timing between payments and collections,
are large relative to their capital. Any shock to the payments system
thus may induce banks to reduce their intraday extensions of credit
because of incomplete information about counter-party risk, disrupting
at least temporarily the payments system. 3/ However, access to the

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1/ Theories of banking panics include Gorton (1985), Jacklin and
Bhattacharya (1988) and Chari and Jagannathan (1988).
2/ See Bernanke (1983) and Gorton (1988) for evidence on the macro-
economic effects on banking panics. The measures adopted by commercial
bank clearing houses to limit the (private) costs of banking panics
prior to the founding of the Federal Reserve System in 1914 (and of the
Federal Deposit Insurance Corporation in 1933) provide further evidence
of their significance. These measures included rules governing the use
of loan certificates in settlements so that currency could be freed for
use in satisfying depositors' demand for currency and the coordinated
suspension of convertibility of deposits into currency or specie. See
Timberlake (1984) and Gorton (1985).
3/ See Corrigan (1987) and Flannery (1988).

discount window at Federal Reserve Banks serves to reduce somewhat counter-party risk by enhancing bank liquidity. 1/

Given the demand for government deposit insurance, the issue of how to control risk taking by depository institutions arises because the insurance eliminates the incentive of depositors to monitor banks and thrifts. In the absence of market discipline, institutions have an incentive to increase their portfolio risk to maximize the value of the deposit guarantee. This incentive effect is the so-called moral hazard problem associated with deposit insurance.

The Government's current approach to solving the incentive problem is a collection of regulations that include restrictions on activities and portfolio investments undertaken by depository institutions, capital adequacy standards, and supervision and examination. These measures are similar to those that were adopted by commercial banks and their clearing houses to limit the externalities from risk taking prior to the founding of the Federal Reserve System in 1914 (and of the Federal Deposit Insurance Corporation in 1933). Commercial bank clearing houses established capital adequacy standards and routinely conducted audits of member banks. 2/ Members that failed to satisfy these regulations were subject to fines and, for extreme violations, could be expelled from the clearing house association.

III. Valuation of the Deposit Guarantee

Since many proposals to reform the system of deposit insurance and regulation of depository institutions aim to reduce the value of the government guarantee, a useful benchmark for considering their valuation effects is an options pricing model. In financial markets, a call (put) option is a legal contract that gives its owner the right to buy (sell) a specified asset at a fixed price on a specified date. 3/ The counter-party to this transaction would be the seller or writer of the option. The fixed price specified by the option contract is called the striking price, while the date at which the option can be exercised is termed the expiration date.

1/ The argument assumes that the secondary market for bank loans is imperfect. Because of an adverse-selection problem, the secondary market for bank loans may fail if bank portfolios are assembled on the basis of private information. For evidence on the uniqueness of bank loans, see Fama (1985) and James (1987).

2/ See Gorton and Mullineaux (1987).

3/ This definition applies to a European option, which is to be distinguished from an American option. An American option gives its owner the right to buy or sell at any time on or before the specified date.

In terms of an option, deposit insurance is a put option written by the Government on the value of the depository institution's assets. The striking price is equal to the maturity value of its deposits (and possibly other liabilities). The expiration date is the time of the next government examination of the institution. At the examination date, t, the nonpositive payoff to the Government is

$$G_t = \min (0, V_t - D_t), \tag{1}$$

where D_t is the value of the depository institution's deposits and V_t is the value of its assets. $V_t - D_t$, if negative, is the Government's payout to honor the deposit guarantee.

Black and Scholes (1973) derived an exact valuation formula for an option prior to its expiration date, which Merton (1977) applied to the pricing of deposit insurance. The formula is applicable under certain restrictive conditions that would enable the risk of writing and holding the put option to be completely diversified. 1/ If, in addition, the value of the depository institution's asset portfolio evolves through time according to geometric Brownian motion, 2/ the current value of the deposit guarantee per dollar of insured deposits, i.e., $g_0 = G_0/D_0$, is

$$g_0 = F(x + \sigma\sqrt{t}) - d_0 F(x) \tag{2}$$

where:

d_0 = the current insured deposits-to-asset ratio, i.e, D_0/V_0.

σ = the standard deviation of the return on assets per unit of time.

t = the time interval to the next examination.

1/ These include continuous trading with no transactions costs, unrestricted borrowing and lending at the same interest rate, and unrestricted short sales.

2/ Geometric Brownian motion implies three restriction on the time path of the portfolio's value: the path must be continuous; all future changes in the value must be independent of past changes; and the logarithm of the change during the time interval t is normally distributed with mean zero and standard deviation $\sigma\sqrt{t}$. A different stochastic process for the portfolio's value would in general yield a different pricing equation. For example, see Merton (1976).

$$x = [\log (d_0) - (\sigma^2 t/2)]/\sigma\sqrt{t}.$$

$F(\ ) =$ the standard normal cumulative density function.

Thus, the value of the guarantee per dollar of insured deposits is a function of three variables: d_0, σ^2, and t.

An intuitive explanation of (2) is as follows. First, multiply both sides of (2) by D_0 and note that D_0 and V_0 are the present discounted values of D_t and V_t, respectively. Since $F(x+\sigma\sqrt{t})$ is related to the probability that $V_t < D_t$, the first term can be loosely interpreted as the expected present discounted value of D_t conditional on the guarantee being exercised at time t. Similarly, $V_0 F(x)$ is the expected present discounted value of V_t conditional on $V_t < D_t$. Thus, G_0 is the expected present value of the government payout at time t, as given by (1).

The taking of partial derivatives of (2) illustrates how the deposit guarantee's value is influenced by changes in the arguments of the valuation function. As one would expect, an increase in leverage, _ceteris paribus_, raises the value of the guarantee:

$$\frac{\partial g_0}{\partial d_0} = F(x)/d_0^2 > 0. \tag{3}$$

The changes in the value with respect to increases in σ^2 and t are also positive, and are given by

$$\frac{\partial g_0}{\partial \sigma^2} = f(x)\sqrt{t}/(2d_0\sigma) > 0 \tag{4}$$

$$\frac{\partial g_0}{\partial t} = f(x)\sigma/(2d_0\sqrt{t}) > 0, \tag{5}$$

where $f(\ )$ is a standard normal density function. [1] Thus, a value maximizing institution with deposits insured by the Government will increase its leverage and asset risk, unless constrained by regulation. The Government also can limit the value of its contingent liability by restricting the length of time deposit insurance remains in force.

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[1] See Merton (1977).

IV. Deposit Insurance Reform

The large losses incurred by the Government's deposit insurance funds for both thrifts and banks in the 1980s have raised concerns about the adequacy of the Government's current approach to limit its potential exposure to losses and to control risk taking by depository institutions. 1/ As a result, several reforms to the way the deposit insurance funds are currently operated have been proposed. These include: a timely closure rule for insolvent institutions; risk-related deposit insurance premiums or capital adequacy standards; a reduction in the coverage of deposit insurance; and the "narrow" depository institutions proposal. Each reform proposal is considered briefly in turn.

1. Timely closure rule for troubled institutions

Recent experience with insolvencies of savings and loans revealed that many of the losses incurred by the deposit insurance fund resulted from the delayed resolution of failures. 2/ Benston and Kaufman (1988), Benston et al. (1989), and White (1989) argued that a timely closure rule for troubled institutions, strengthened by regulatory measures such as market value accounting, could limit the value of the deposit guarantee. In theory, this value could be reduced substantially if a troubled institution were closed near the moment of economic insolvency, as illustrated by (5). However, legal insolvency almost always requires the historical book value of assets to fall below the book value of liabilities, which bears no necessary relationship to economic insolvency.

A key to the more timely closure of a troubled institution is an accounting standard that more accurately reflects the economic value of a depository institution than does the current standard. As an alternative, Benston and Kaufman (1988), inter alios, proposed market value accounting that in principle could allow for more timely supervisory action, including closure. Under market value accounting, all assets and liabilities of a depository institution would be marked to their observed market values or estimates thereof. A more transparent accounting system also would make any delay in closing insolvent institutions by the deposit insurance agency more susceptible to public scrutiny. 3/

Market value accounting entails a number of technical difficulties, however. As argued by Berger, Kuester and O'Brien (1989), the market

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1/ See Kane (1985), pp. 1-29, Benston et al. (1986), pp. 1-35, Carron and Brumbaugh (1987), Brumbaugh (1988), pp. 113-135, Brumbaugh, Carron, and Litan (1989), and Kane (1989), pp. 145-180.

2/ See Carron and Brumbaugh (1987), Barth and Bradley (1988), Brumbaugh (1988), pp. 59-88, and Kane (1989), pp. 63-94.

3/ For a discussion of the incentive of regulators to delay the closure of a troubled institution, see Kane (1989), pp. 95-114, and White (1989).

value of a depository institution may not equal the difference between the market value of its assets and liabilities. The deposit guarantee is of value to the institution, as is its ongoing customer relationships. In addition, many assets of a depository institution are infrequently traded and thus would be difficult to value precisely in market terms. The off-balance-sheet guarantees of an institution would be subject to similar measurement problems.

While market value accounting may not be entirely feasible, improvements to the existing accounting standard are possible. Berger, Kuester and O'Brien (1989) offered some examples. Specifically, securities that are actively traded on secondary markets, such as U.S. Treasury securities, could be marked to their market values. For instruments without currently observed market prices, including unmarketable loans, off-balance-sheet guarantees, deposits and other liabilities, their reported values could be corrected using standard formulas for fluctuations in the general level of market interest rates. However, corrections for counter-party credit risk would pose several measurement problems that could render them inaccurate and subject to manipulation.

2. Risk-related deposit insurance premiums
   and capital-adequacy standards

The cost of deposit insurance at present is the explicit premium, a fixed percentage of covered deposits, plus the costs imposed on banks and thrifts by the government regulations that accompany the guarantee. 1/ As Meltzer (1967) and Scott and Mayer (1971) initially observed, the fixed-rate premium creates an incentive for risk taking by an insured depository institution. In theory, the scaling of deposit insurance premiums according to the portfolio risk of a depository institution could eliminate this distortion. Alternatively, a capital adequacy standard that varied inversely with asset risk could remove this incentive for risk taking while retaining a fixed premium. 2/

The calculation of an actuarially fair deposit insurance premium or capital adequacy standard is subject to several estimation problems, however. To estimate either of these values using the options pricing model of deposit insurance would require estimates of D_0, V_0, σ^2, and t for each depository institution. It is possible to infer V_0 and σ^2 from the stock market valuation of a bank or thrift, while the book-value of deposits can be used as an estimate of D_0. Nevertheless, the insurance valuations are sensitive to assumptions made about the stochastic process that generates the asset returns and the closure rule used by the deposit insurance agency. 3/

1/ See Buser, Chan and Kane (1981).
2/ See Sharpe (1978).
3/ For a range of possible estimates of the value of deposit guarantees obtained from options pricing theory, see Marcus and Shaked (1984), Ronn and Verma (1986) and Pennacchi (1987).

Even if precise estimates of the actuarially fair deposit insurance premium or capital adequacy standard were possible, implementation of the scheme would be complicated by the incentive of an institution to increase its portfolio risk once the premium or standard is set. One approach to solving this problem is to develop a deposit insurance contract that is incentive compatible, i.e., that provides a bank or thrift with no incentive to alter its portfolio risk. However, Chan, Greenbaum and Thakor (1988) showed that a fairly priced deposit insurance contract could not be incentive compatible. An empirical indication of the limits to reliances on pricing to solve such moral hazard problems is the use of covenants in bond indentures that restrict the ability of corporate managers to transfer wealth from bond holders to equity holders. Bond holders do not rely on pricing alone to protect their financial interests. 1/

3.   Reduction in deposit insurance coverage

Given a depository institution's asset portfolio, a reduction in the proportion of its liabilities that are insured would reduce the value deposit guarantee. In theory, the change in the value of deposit insurance illustrated is by taking the partial derivative of (2) with respect to d_0, which is positive. In addition, a reduction in deposit insurance coverage would mitigate the incentive for risk taking created by deposit insurance. 2/ These considerations led to proposals by the Council of Economic Advisors (1989) to reduce the insurance coverage of deposits from the current ceiling of $100,000 per individual account and by Boyd and Rolnick (1989) to limit coverage to a certain percentage of each account.

Measures to reduce deposit insurance coverage would not alter the demand for an explicit or implicit government guarantee, however. As long as significant externalities are associated with the failure of a depository institution, there will be a de facto government guarantee of deposits. In fact, past failures of depository institutions have resulted in the protection of deposits not only under the current $100,000 ceiling per account, but also many accounts exceeding this ceiling. Moreover, other creditors in some cases were fully or partially protected, particularly in the event of a large bank failure where the externalities were potentially significant. Thus, a reduction in insurance coverage of deposits would not necessarily be credible and could result in a subsidy to large depository institutions.

1/   Smith and Warner (1979) provided an economic analysis of covenants in bond indentures, while the implication of their use by bondholders for the need to regulate depository institutions by the Government was noted by White (1989).
2/   See Furlong and Keeley (1989).

4. "Narrow" depository institutions

A final reform proposal would limit the asset portfolio of a depository institution to short-term government securities and possibly high-grade corporate debt. Proponents of this so-called "narrow" bank or thrift concept include Kareken (1986) and Litan (1987). Under this approach, deposit insurance would be essentially a guarantee against fraud and embezzlement, since the asset risk of a depository institution would be significantly reduced by portfolio restrictions.

The apparent preference by households and businesses for deposit contracts over financial claims (e.g., mutual fund shares) as a funding source for some risky investments points to the possible costs associated with the narrow depository institution's proposal. At a structural level, this preference may stem from the different ways in which the instruments allocate risks or the economies of scope that appear to exist for certain deposit taking and lending activities. In either case, a reform that would place extensive restrictions on the use of deposits to fund risky investments would impose a significant efficiency loss on the economy.

V. Reform of the Regulation of Depository Institutions

The regulation of depository institutions to control their risk taking can impose efficiency losses on the economy, a cost that has been possibly revealed by the decline in bank profitability since the early 1980s. Recent advances in information processing and communications technologies appear to have shifted the profitability of various financial services away from deposit taking and lending towards securities services. However, the activity restrictions placed on banks under the Glass-Steagall Act, which prohibits in the United States affiliations between most commercial banks and firms that are principally engaged in the underwriting and distribution of securities, limited the ability of banks to respond to this change in profitability. 1/ In view of these developments, Greenspan (1990b), inter alios, proposed the reform of the Glass-Steagall Act while relying on corporate separateness measures and strengthened capital adequacy standards to restrain any possible increase in risk taking. Each reform measure is considered briefly in turn. 2/

1/ The Glass-Steagall Act refers to Sections 16, 20, 21 and 32 of the Banking Act of 1933. The United States and Japan, under Article 65 of the Securities and Exchange Law of 1948, are unique among the major industrial countries in so separating banking and securities activities. See Bröker (1989), pp. 58-70.

2/ The possible reform of the Glass-Steagall Act has also raised concerns about the concentration of economic power in the financial sector and conflicts of interest from the joint provision of banking and securities services. For discussions of these issues see Kareken (1986), Benston et al. (1986), pp. 127 -171, and Federal Deposit Insurance Corporation, (1987), pp. 46-54.

1. Reform of the Glass-Steagall Act

Pressure to reform the Glass-Steagall Act has mounted as securities firms in the late 1970s and 1980s expanded their offering of services that are substitutes to deposit taking and commercial lending. For example, shares in money market mutual funds increased to 7 3/4 percent of household holding of credit market instruments at the end of 1989 from 1/2 percent at the end of 1978. At the same time, commercial paper increased from 2 percent of nonfinancial corporations' total credit market liabilities at the end of 1978 to 5 percent at the end of 1989. 1/ These competitive developments reflect in part recent advances in information processing and communications technologies that eliminated much of the traditional advantage banks possessed in assessing the credit risks of prime corporate borrowers and facilitated the operation of money market mutual funds.

As the banking industry faced increased competition, its profitability weakened. The annual rate of return on equity of all insured commercial banks declined from an average of 12.7 percent in 1975-81 to an average of 9.8 percent in 1982-89. 2/ Much of the decline in profitability was concentrated in money center banks. Their annual rate of return on equity fell from an average of 13.3 percent in 1975-81 to an average of 6.8 percent in 1982-89. The decline in bank profitability was due to primarily increased provisioning for loan losses, which suggests an incomplete pricing of loan risks as nontraditional lending opportunities were pursued. 3/

The decline in bank profitability indicates that an incentive may exist to reallocate bank resources to the provision of other financial services. In most industries, corporate restructurings are an important means to this end, as it is widely recognized that the internal controls of a corporation--the board of directors, governance rules and management incentive contracts--do not completely align the interests of corporate management with those of its shareholders. 4/ However, the market for corporate control can impose an important external discipline on the activities of a corporation's incumbent management. This

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1/ Board of Governor of the Federal Reserve System, Flow of Funds Accounts.

2/ Developments in bank profitability are surveyed annually in the Federal Reserve Bulletin. For example, see Duca and McLaughlin (1990). The period averages were calculated over the business cycles that preceded and followed the wider use of money market mutual funds and commercial paper.

3/ Banks responded to these competitive pressures in part by expanding their off-balance sheet activities, including the issuance of stand-by letters of credit and commercial loan sales. For an analysis of these activities, see Benveniste and Berger (1987), James (1988) and Pennacchi (1988).

4/ See Jensen and Warner (1988).

constraint appears to operate most effectively when changes in market conditions--preferences, technology or government policies--create an incentive for a major restructuring of corporate assets. 1/ While the conditions in the banking industry appear to warrant a restructuring of corporate assets, the Glass-Steagall Act significantly constrains the market for corporate control in the banking industry, particularly with regard to the larger institutions. 2/ By permitting securities firms to affiliate with banks, reform of the Glass-Steagall Act would promote a reallocation of bank resources to more profitable activities.

In addition to liberalizing the market for corporate control in the banking industry, reform of the Glass-Steagall would remove a potentially significant entry barrier to the securities industry which could serve as a source of market power. In a market with no costs to entry or exit, (i.e., a perfectly contestable market), actual and potential competitors are equally effective in the control of market power. The applied concept of a perfectly contestable market presumes the existence of so-called hit-and-run entrants that are able and willing to enter an industry whenever profit opportunities arise. However, if barriers to entry exist, a hit-and-run strategy becomes risky as the industry's incumbent firms can adjust prices and impose costs on the entrant. 3/ In this case, industry concentration also can be an important determinant of market power.

The Glass-Steagall Act clearly creates an entry barrier to the securities industry for banks, however any other type of firm is legally permitted to enter the industry. Thus, the issue relevant to reform of the Glass-Steagall Act is whether the costs of entry to the securities industry are lower for banks than for other types of potential entrants. Some pertinent evidence can be obtained from the primary market for Eurobonds, a market with no legal constraints on entry. Most competitors in this market are subsidiaries or affiliates of securities firms and banks of various national origins. 4/ One reason for this industry composition may be the existence of significant barriers to entry for other types of firms. Davis (1988, 1989) identified these costs as the value of reputations and ongoing customer relationship, which may be lower for firms that provide other financial services. Thus, with respect to the domestic securities industry, the costs to entry and exit for banks are likely to be lower than those for other potential entrants.

1/ The data on the intensity of takeover activity by industry tend to confirm this point. See Council of Economic Advisors (1985), pp. 192-195, and Jensen (1988).

2/ Corporate restructurings in the banking industry have been undertaken on a large scale in the 1980s, however much of this activity has been associated with the liberalization of geographic restrictions on bank activities at the state level. See Amal and Jacowski (1989).

3/ For a discussion of the theory of contestable markets and the significancy of costs to entry and exit, see Baumol, Panzer and Willig (1986) and Gilbert (1986).

4/ See Levich (1985).

If the domestic market for securities services is not perfectly contestable, industry concentration can be an important determinant of market power. In fact, traditional market structure and performance analyses of the securities industry by Pugal and White (1985) and Litan (1987) found it to be relatively concentrated and profitable, particularly that segment of the industry engaged in the underwriting of corporate securities. The four-firm concentration ratio in the market for underwriting corporate securities averaged 54 percent in the period 1982-88. 1/ At the same time, the rate of return on equity for large investment banks, those firms which tend to dominate this market, averaged 19 percent. 2/ Both measures of concentration and profitability for this segment of the securities industry are high relative to those for the banking and other financial service industries. 3/

One potential effect of unrestricted bank entry into the securities industry would be lower underwriting costs. A test of this proposition is afforded by an exception within the Glass-Steagall Act that allows banks to underwrite state and municipal general obligation bonds but not the revenue bonds of these government entities. A comparison of underwriting costs for these two types of bond issues, while controlling for other differences, provides an indication of the competitive effect that would accompany bank entry into the market for underwriting corporate security issues. A survey of the available evidence by Silber (1979) found that underwriting costs are significantly less for general obligations than for revenue bonds, ceteris paribus, with the estimated savings in the range of 7 to 13 basis points, a finding confirmed Kidwell and Koch (1982).

The evidence thus suggests that reform of the Glass-Steagall Act would promote a restructuring of the banking industry and increase competition in the securities industry. In addition, two other potential sources of efficiency gains are often associated with this reform measure, economies of scale and scope from the joint provision of financial services and activity diversification in banking. However, available evidence suggests that the efficiency gains from these sources may not be significant.

Financial firms would realize economies of scale if the per unit production costs of their services decline as their outputs rise, while economies of scope would arise if two or more services are jointly produced at lower costs than are incurred in their separate production. In general, economies of scale and scope may stem from several sources, including the increased specialization of labor and the spreading of

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1/ The concentration ratios are the proportion by value of corporate securities lead managed by the top-five underwriters as compiled annually by IDD Information Services.

2/ Developments in the securities industry's profitability are surveyed annually by the Securities Industry Association.

3/ For the comparison, see Litan (1987), p. 64.

fixed costs. Economies of scope also may be derived from customer cost savings that can be captured at least in part through higher revenues. With respect to financial firms, information produced as part of a credit assessment of a borrower or derived from the provision of transactions services also may be a source of production economies.

Empirical evidence on economies of scale and scope at financial firms applies primarily to depository institutions and their currently permissible activities, namely various types of deposit-taking and lending activities. Studies of production economies at commercial banks yield several general conclusions from the estimated statistical cost functions for cross-sections of banks. 1/ Economies of scale appear to exist only for those banks with total deposits below about $100 million. For those banks with deposits above this amount, there is some evidence of diseconomies of scale. In addition, no consistent evidence is found of overall economies of scope, although there is significant evidence of scope economies for specific pairs of deposit taking and lending services. Studies of production economies at savings and loan institutions and credit unions tend to support these general conclusions. 2/

With respect to gains from combining commercial banking and securities activities, the evidence is limited. Saunders and Smirlock (1987) examined the share price responses of bank holding companies and securities firms to the announcement of bank entry into discount brokerage. However, examination of share price returns is acknowledged to be a less powerful test of production economies than estimating statistical cost functions since these gains may not be reflected in bank profitability due to competitive pressures among banks. Their findings indicated that, while bank profitability and risk were largely unaffected by such entry, securities firms experience a significant decline in their market value. Thus, there is no evidence of significant economies of scale and scope from combining banking and discount brokerage activities, however the evidence supports the proposition that bank entry increases competitive pressures in the securities industry.

While available studies do not reveal significant economies of scale or scope at financial firms, some caution should be exercised in drawing policy conclusions from this evidence for several reasons. First, estimates of statistical cost functions are subject to certain methodological limits, including arbitrary restrictions on their functional form and constraints in disaggregating the costs of various financial services imposed by data availability. Second, estimates of economies of scale and scope with respect to traditional commercial banking activities are of limited use in drawing inferences about such gains from the expansion of bank powers to include securities activities.

1/ See Benston, Berger, Hanweck and Humphrey (1983), Gilligan, Smirlock and Marshall (1984), Lawrence and Shay (1986), and Berger, Hanweck and Humphrey (1987).
2/ See Kim (1986) and Mester (1987).

Third, the available study that does examine the effect of expanding bank powers to include discount brokerage activities contains a test acknowledged to be of limited power. Nevertheless, the results may temper the view that economies of scale and scope would be a significant source of efficiency gains from reform of the Glass-Steagall Act.

The final potential source of efficiency gains that is often associated with reform of the Glass-Steagall Act is activity diversification by banks. In general, diversification by a firm does not produce any gains since shareholders can minimize risk through portfolio diversification. However, exposure of the Government's deposit insurance fund to risks from banking activities cannot be lessened by broadening the activities which it covers due to legal constraints. Thus, activity diversification by banks could lower the risk to the Government as provider of the guarantee of banks' deposits.

Two recent studies estimate the effect on risk and returns from the expansion of bank powers to include securities (and other nonbank financial) activities. Boyd and Graham (1988) using time-series data on both accounting and stock market rates of return for various types of financial service firms, calculated the standard deviations and returns for hypothetical pair-wise combinations of bank and nonbank financial activities. These combinations do not allow for production economies or possible adverse incentive effects associated with the expansion of permissible bank activities. The results indicate that for certain combinations, particularly those with life insurance underwriters and insurance brokers, some reduction in risk for a given rate of return may be possible. However, no such improvement was found for the combination of banking and securities activities.

Kwast (1989) examined the diversification gains from banks' existing securities powers, primarily the underwriting of an dealing in U.S. Government securities, general obligation bonds of state and local governments, and U.S. Government agency obligations. Based on accounting rates of return on assets for banks' securities and nonsecurities activities, the standard deviation of return on securities activities exceeds that on nonsecurities activities by a substantial margin. Moreover, the imperfect correlation between these returns is generally not sufficient to reduce the standard deviation of the return on banks' total assets, indicating that there is no widespread reduction in risk from banks' existing securities activities.

2. Corporate separateness measures

Since available evidence suggests that the main efficiency gains from reform of the Glass-Steagall Act would stem from a greater role for market forces in promoting competition, rather than from production economies or activity diversification, measures that separate banking and securities activities within a bank holding company would not compromise these gains. Specifically, the securities activities would be undertaken in a firm that is affiliated with a bank within a holding

company. 1/ A benefit to the Government from this approach stems from the limited liability of a shareholder, even if it is another corporation. This legal provision substantially restricts the recourse that creditors of the securities affiliate would have in the event of its default to payments from the affiliated bank. 2/

Corporate separateness provides no constraint on transactions within a holding company that are undertaken to maximize the organizations consolidated profits, however. For example, a bank holding company would have an incentive to use its bank subsidiary's funding capabilities to support those permissible activities that contribute the most to its consolidated profits. Legal restrictions on transactions between a bank and its affiliates, such as Sections 23A and 23B of the Federal Reserve Act and the parallel provisions in the Federal Deposit Insurance Act, are designed to limit the scope for increasing bank leverage in this way. 3/ These provisions require arms-length credit transactions between a bank and its affiliates and impose on these transactions collateral requirements and quantitative limits based on the bank's capital. 4/ Nevertheless, the ability of corporate separate measures to insulate a depository institution from risks in a period of financial distress may be limited. The recent bankruptcy of Drexel Burnham Lambert, a holding company engaged primarily in securities activities, revealed the extent to which financial difficulties of the parent company and some affiliates can affect other affiliates that are financially sound. 5/ In particular, the government securities affiliates of Drexel, which seems to have been adequately capitalized, found its access to credit curtailed as concerns mounted about the soundness of the holding company and other affiliates.

1/ Corporate separateness would also apply to the subsidiary of a bank, however use of a bank subsidiary to expand activity powers may diminish the effectiveness of other forms of bank regulation, such as capital adequacy standards.

2/ A court could determine that a bank is liable for the debt of its affiliate is such obligations appear to be backed by the bank or if the two firms are operated as one. For a discussion of measures that would maintain the limited liability of a bank, see Chase (1987).

3/ Capital adequacy standards and restrictions on bank dividends perform a similar function. See Chase (1987).

4/ These restrictions do not apply to intraday credits extended in the payments system. However, since these credits impose essentially the same risks to a bank as overnight loans, it has been proposed to subject intraday credits to the same regulatory treatment. See Chase (1987) and Flannery (1988).

5/ See Greenspan (1990a).

3. Strengthened capital adequacy standards

Since corporate separateness measures may not adequately protect the Government from losses, particularly in instances of financial distress, Greenspan (1990b) proposed higher capital adequacy standards as a means to limit the value of the Government's guarantee of deposits. Increased capital not only reduces the probability of deposit insurance losses for a given asset portfolio of a bank, as illustrated by the partial derivative of (2) with respect to d_0, but it also affects the risk of that portfolio. Higher capital requirements provide bank share-holders with an incentive to reduce portfolio risk because they would bear a greater share of the losses from risky investments. 1/

In accordance with the Basle Agreement to establish uniform capi-tal adequacy standards for major commercial banks, 2/ bank regulatory authorities in the United States issued guidelines in late 1988 and early 1989 to establish a capital adequacy standard of 8 percent of assets adjusted for their counter-party risk by the end of 1992. 3/ At least half of this capital would need to be core capital, consisting of ordinary paid-in share capital plus disclosed reserves less goodwill. The remainder could be in the form of subordinated debt, hybrid capital instruments (e.g., preferred shares), general loan loss reserves, revaluation reserves and undisclosed reserves. Under the Financial Institutions Reform, Recovery and Enforcement Act of 1989, a similar capital adequacy standard was also applied to thrift institutions.

Whether the uniform capital standards would be adequate to restrain any increase in risk taking that could accompany an expansion of banks' permissible activities to include securities services is an issue that requires further research. However, developments in the thrift industry crisis clearly illustrates the problems that can arise when under-capitalized institutions are permitted to expand their permissible activities. 4/ A precondition for expanding the permissible activities of banks thus should be their adequate capitalization which takes into account any unrealized loan losses.

VI. Conclusion

The proposed reforms of deposit insurance and regulation of depos-itory institutions have as a common objective the promotion of a more cost-effective system of managing systemic risks. There are two broad approaches to achieve this goal, which are not mutually exclusive. One

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1/ See Furlong and Keeley (1989).
2/ Committee on Banking Regulations and Supervisory Practices (1988).
3/ This capital adequacy standard is not necessarily related to the portfolio risk of a depository institution.
4/ See Carron and Brumbaugh (1987), Barth and Bradley (1988), Brumbaugh (1988), pp. 59-88, and Kane (1989), pp. 63-94.

approach is to modify the way the deposit insurance funds are operated
to limit losses in the event of insolvency and to reduce the incentive
for risk taking by depository institutions. The other involves reforms
to the regulations that serve to control risk taking by depository
institutions to reduce their overall cost.

With a view to implementation, a timely closure rule for insolvent
depository institutions appears to be the most feasible and effective of
the proposed reforms to the operation of the deposit insurance funds.
Measures to improve the ability of regulators to assess the economic net
worth of depository institutions could serve to improve the effective-
ness of the closure rule. Moreover, the cost of regulations to limit
risk taking by a depository institutions could apparently be reduced by
permitting a company affiliated with a depository institution in a
holding company to engage in securities activities, while strengthening
capital adequacy standards to restrain any possible increase in risk
taking.

While this paper examines some aspects of the controversy sur-
rounding depository institutions, any comprehensive reform proposal
would require further consideration of what would constitute an adequate
capital sandard and how it would be affected by the closure rule for
troubled institutions. Other issues of relevance, but that are beyond
the scope of this paper, include the need for depository institutions
that specialize in housing finance, the effects of liberalizing geo-
graphic restrictions on banks and thrifts on efficiency and competition,
and the potential efficiency gains and risks from an expansion of banks'
permissible activities to include not only securities services but also
other financial services such as insurance underwriting and brokerage.

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