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Deposit Insurance Reform: State of the Debate

by George Hanc*

Fundamental issues of deposit insurance are being debated in the United States and abroad. In the United States, the debate was stimulated by the upsurge in bank failures in the 1980s and dissatisfaction with the record of depository institution regulation during that period. One result of the experience of the 1980s was passage of the Federal Deposit Insurance Corporation Improvement Act of 1991 (FDICIA). Further reforms are being debated, partly reflecting the view of some observers that FDICIA did not go far enough.[1] Although the present favorable banking climate makes comprehensive reform unlikely, public discussion of deposit insurance issues could significantly influence the shape of any future action.

Among other countries, an increasing number have adopted deposit insurance in recent years, which often replaced the informal practice of providing *ad hoc* protection for bank depositors when crises arise. The spread of explicit deposit insurance has partly been a response to a series of banking crises in various countries.[2] In 1994, a European Union (EU) directive required each member nation to adopt an explicit system of mandatory deposit protection with specified minimum levels of coverage.[3] In Eastern Europe, deposit insurance was adopted as countries in this region moved from state-owned to privately owned banks. In establishing formal deposit insurance *de novo*, these countries have had to address issues that, for many years, confronted (and still confront) U.S. policymakers.[4]

This article examines several main deposit insurance issues. Part 1 discusses the role and functions of deposit insurance and the nature of the moral-hazard and principal/agent problems inherent in deposit insurance. Part 2 surveys and analyzes specific proposals to reform deposit insurance, grouping them according to whether they increase depositors' risk, increase bank owners' costs, rely on increased use of market mechanisms to ensure prompt regulatory action, or restrict the range of banking activity financed by insured deposits. Part 3 analyzes the trade-off that deposit insurance requires between certain public-policy objectives and the attendant costs and risks. In this concluding part, differences in views on reform issues are attributed mainly to differences in views on the following matters: public-policy priorities, the economic role of bank intermediation, the cost of bank risk monitoring, and the relative efficacy of government supervisory authorities and private-sector agents in identifying and restraining risky bank behavior.

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[1] Proposals for reforming the deposit insurance and bank regulatory systems have recently been advanced by bankers and banking groups, Federal Reserve Board governors and reserve bank officials, bank consulting firms, think tanks, academics, and others. Some of the recent proposals are variations of ideas advanced much earlier.

[2] Garcia (1999).

[3] Commission of the European Communities (1994).

[4] Many of the issues associated with maintaining an effective deposit insurance system were explored in an FDIC symposium (FDIC [1998]).

PART 1. DEPOSIT INSURANCE: PURPOSE AND RISKS

Role of Deposit Insurance

In the United States bank insurance dates back to 1829, when the first program to protect bank creditors was established in New York State. Among the main purposes of this and subsequent programs were protecting the local economy from the disruptions in the money supply that resulted when banks failed and protecting holders of bank liabilities against loss. For many proponents of bank insurance, another important objective was to support a predominantly unit banking system. Although public discussions have often emphasized protecting the small saver, promoting financial-market stability and achieving other broad objectives have become major rationales for bank deposit insurance in this country.

In all, six states established bank insurance systems during the pre–Civil War period; some of them experienced financial difficulties, and all of them were effectively put out of business by the creation of the national banking system in 1863.[5] In the early 1900s eight bank deposit insurance programs were established, mainly in farm states; during the agricultural depression of the 1920s these systems became insolvent or inoperative. In the U.S. Congress, 150 deposit insurance bills were introduced between 1886 and 1933; these attempts culminated in the establishment of the Federal Deposit Insurance Corporation in 1933.

Currently, deposit insurance is often described as one element—the others are access to central bank advances and payments system guarantees—in a federal government safety net extended to the banking system because banks are deemed "special." The special nature of banks lies in their vulnerability to sudden withdrawals of funds from demand accounts, the central role of bank accounts in the payments system, and the role of banks in financial intermediation. With respect to the last of these, the dominant view is that banks specialize in lending to idiosyncratic borrowers who lack cost-effective access to capital markets and, in so doing, develop borrower-specific information on these borrowers. This view implies that many bank loans are illiquid and "opaque" to investors, analysts, and others outside the bank. Another way to describe the special nature of banks is to say that they specialize in transforming liquid deposits into illiquid loans. Banks provide liquidity not only to depositors but also to borrowers, who draw down loans on demand against outstanding commitments.[6] Any assessment of proposed changes in deposit insurance must give due weight to the special role of bank intermediation.

An alternative view of banking holds that some banks are, and more banks are becoming, merely holders and traders of marketable instruments. This view tends to diminish the "specialness" of banking and implies that the safety net needed for its protection should be changed.

Insurance Limits

The importance of financial-market stability and other broad objectives of deposit insurance is suggested by the insurance limits prescribed under the various insurance programs adopted or proposed in this country. Insurance coverage in the United States has seldom if ever been limited to "small" savers. None of the 14 pre-FDIC state-sponsored bank insurance programs limited the amount of insurance that was provided to an individual note-holder or depositor. Furthermore, of the 150 deposit insurance bills introduced in Congress between 1886 and 1933, 120 provided for insuring all, or essentially all, deposits without limiting the amounts insured.[7]

The Banking Act of 1933, which established the FDIC, departed from previous practice with respect to insurance limits by establishing a coinsurance feature that limited the amount of coverage provided to large depositors. The initial "permanent" deposit insurance plan adopted as part of the 1933 Act provided for 100 percent coverage up to $10,000 for each depositor, 75 percent for deposits in excess of $10,000 up to $50,000, and 50 percent for deposits above $50,000. Relative to the financial resources of the vast majority of people at the time, however, the limit on 100 percent coverage was set high.[8] Moreover, the coinsurance feature never actually went into effect but was replaced by a temporary overall ceiling of $2,500 that was raised to $5,000 in 1934, a ceiling that was adopted in the revised per-

[5] FDIC (1950), 63–101; (1952), 59–72; (1953), 45–67; (1956), 47–72; and (1983), appendix G. Also Golembe and Warburton (1958), English (1993), and Calomiris (1990). The demise of the pre-Civil War state insurance programs was partly the result of conversions from state to national bank charters after 1863 and the prohibitive tax Congress levied in 1865 on state bank notes, a principal bank liability at the time.

[6] Rajan (1998), 14–18; Bhattacharya and Thakor (1993); Murton (1989), 1–10; and U.S. Department of the Treasury (1991), I-1 to I-11.

[7] The remaining 30 bills would have generally covered less than 100 percent of deposits, excluded interest-bearing accounts, or excluded accounts paying more than a specified rate of interest (FDIC [1950], 73).

[8] In constant dollars, the $10,000 limit on 100 percent coverage in 1933 was approximately 25 percent higher than the $100,000 limit in 1998.

manent plan of the Banking Act of 1935. According to FDIC estimates at the time, the $5,000 limit provided full coverage for more than 98 percent of all depositors.[9] The ceiling was subsequently raised in several steps. The most recent increase in the insurance limit, from $40,000 to $100,000 in 1980, was apparently designed to help depository institutions, particularly thrift institutions, compete for funds.[10]

Deposit Insurance and the Unit Banking System

Deposit insurance has long been perceived as providing important support for a banking system made up of a large number of independent institutions.[11] Over the years, adherents of a predominantly unit banking system sought deposit insurance in order to provide a viable alternative to branch banking systems, which benefit from geographic diversification. According to one prominent view, the reason federal deposit insurance was finally adopted in the 1930s was the support it drew from two groups that until then had pursued divergent aims: those who sought to avoid the adverse effects of bank failures on the money supply, and those who sought to preserve the existing banking structure.[12]

Much has changed since the early days of federal deposit insurance; in particular, branching restrictions have been dismantled and the banking industry has experienced ongoing consolidation. A plausible hypothesis is that without deposit insurance, consolidation would have proceeded more rapidly.[13] Nevertheless, the banking system continues to be made up of a large number of independently owned banks and thrift institutions.[14] Moreover, the old conflicts between adherents of unit banking and adherents of branch banking find an echo in current discussions of possible reforms of deposit insurance. It seems more than coincidental that within the banking industry, the institutions that favor privatizing deposit insurance are mainly large and geographically diversified, whereas community banks are generally staunch supporters of federal deposit insurance.

Moral-Hazard and Principal/Agent Problems

Federal deposit insurance has been enormously successful in averting banking panics and preventing bank failures from adversely affecting the nonfinancial economy. Inherent in deposit insurance, however, are what have come to be called "moral-hazard" and "principal/agent" problems. Most proposals for reforming deposit insurance seek to address these problems.

Moral Hazard

When applied to deposit insurance, the term *moral hazard* refers to the incentive for insured banks to engage in riskier behavior than would be feasible in the absence of insurance.[15] Because insured depositors are fully protected, they have little incentive to monitor the risk behavior of banks or to demand interest rates that are in line with that behavior. Accordingly, banks are able to finance various projects at interest costs that are not commensurate with the risk of the projects, a situation that under certain circumstances may lead to excessive risk taking by banks, misallocation of economic resources, bank failures, and increased costs to the insurance fund, to solvent banks, and to taxpayers.

Moral hazard is present because (1) a stockholder's loss, in the event a bank fails, is limited to the amount of his or her investment; and (2) deposit insurance premiums have been unrelated to, or have not fully compensated the FDIC for, increases in the risk posed by

[9] FDIC (l934), 34. In constant dollars, the value of the 1935 ceiling of $5,000 was equivalent to approximately 59 percent of the $100,000 ceiling in 1998.

[10] Before passage of the 1980 legislation that provided for a $100,000 limit, the FDIC testified that an accurate adjustment for inflation would raise the limit to only approximately $60,000 (FDIC [1997], 1:93). Since then, price increases have once again eroded the real value of the insurance limit. In constant dollars, the value of the current $100,000 ceiling is equivalent to approximately 59 percent of the 1980 ceiling after it was raised to $100,000 and is approximately 76 percent of the 1974 ceiling after it was raised to $40,000.

[11] It may be noted that all 14 of the states that adopted bank liability insurance before 1933 had unit banking systems and that in the ante-bellum South, where branch banking prevailed, deposit insurance did not take root. Furthermore, of the 150 deposit insurance bills introduced in Congress from 1886 to 1933, the largest number were introduced by legislators from predominantly unit banking states (Golembe [1960]; Calomiris [1990]).

[12] Golembe (1960), 182.

[13] FDIC (1984), 5.

[14] At the end of 1998 there were 10,461 FDIC-insured banks and thrift institutions. If multibank holding companies were counted as single units, the number of independent institutions would drop to 8,554.

[15] *The New Palgrave: A Dictionary of Economics* defines moral hazard as "actions of economic agents in maximizing their own utility to the detriment of others, in situations where they do not bear the full consequences or, equivalently, do not enjoy the full benefits of their actions due to *uncertainty and incomplete or restricted contracts* which prevent the assignment of *full* damages (benefits) to the agent responsible" (Kotowitz [1987], 549–51). In the context of deposit insurance, moral hazard has been defined as "the incentive created by insurance that induces those insured to undertake greater risk than if they were uninsured because the negative consequences are passed through to the insurer" (Bartholemew [1990], 163).

a particular bank. Moral hazard is particularly acute for institutions that are insolvent or close to insolvency. Owners of insolvent or barely solvent banks have strong incentives to favor risky behavior because losses are passed on to the insurer, whereas profits accrue to the owners. Owners of nonbank companies with little capital also have reason to favor risky activities, but attempts to shift losses to creditors are restrained by demands for higher interest rates, refusal to roll over short-term debt, or, in the case of outstanding long-term bond indebtedness, restrictive covenants required when the bonds were issued.

Probably the most effective counterforce to moral hazard is a strong capital position. Because losses will be absorbed first by bank capital, the likelihood (other things being equal) that they will be shifted to the FDIC diminishes as the capital of the bank increases. In addition, increased capital serves to protect creditors and helps reduce distortions in bank funding costs caused by deposit insurance. Capital regulation, therefore, tends to curb moral hazard, as do other forms of supervisory intervention—specifically the examination, supervision, and enforcement process.[16] Moreover, risk-based capital standards and risk-based insurance premiums attempt to impose costs on banks according to the institutions' risk characteristics. Forces operating within the bank may also restrain moral hazard.[17]

The view that moral hazard is restrained by counterforces is supported by some studies of experience in the 1980s, which suggest that actual bank and thrift behavior differed from the behavior expected on the basis of the moral-hazard principle.[18] It is also noteworthy that from the early 1930s through the 1970s few banks failed, even though flat-rate deposit insurance premiums presumably encouraged risk taking by banks. Apparently other factors (for example, legal restrictions on entry, deposit interest-rate payments, and other activities) had an offsetting effect by insulating many banks from competition and limiting their incentive and ability to take on more risk.

Nevertheless, it is clear that regulatory practices in the 1980s imposed inadequate restraints on moral hazard. Most bank failures were resolved without losses to uninsured depositors and nondeposit creditors, although shareholders' investments were generally wiped out. Such transactions contributed to the stability of the banking system but also enabled large institutions to finance risky activities with both insured and nominally uninsured deposits at low interest rates. In the case of savings-and-loan associations, many thrifts were permitted to operate with little or no capital and therefore had strong incentives for risky behavior.

Principal/Agent Issue

Closely related to moral hazard is the principal/agent issue. This term refers to situations in which an agent binds the principal but acts in a manner not in the best interest of the principal, either because the two parties' compensations are not aligned or because the principal lacks the information or power needed to effectively monitor and control the actions of the agent.[19] According to some writers, regulators and elected officials (agents for the taxpayer) have an incentive to ignore the problems of troubled institutions under their jurisdiction and delay addressing them in order to cover up past mistakes, wait for hoped-for improvements in the economy, avoid trouble "on their watch," or serve some other purposes of self-interest.[20] Because insured depositors are protected, an insolvent institution with few uninsured depositors can continue to operate for a lengthy period unless supervisory authorities take action to close it. However, partly because operating losses still accrue, delay in closing the institution often increases the cost when the institution is finally resolved. Thus, the agent (regulator or elected official) has different incentives with respect to the timing of action from the principal (taxpayer), and deposit insur-

[16] The effectiveness of the examination and enforcement process in addressing problem banks is assessed in Curry *et al.* (1999).

[17] Owners of an insolvent or barely solvent bank may conclude that the bank has some franchise value as a going concern (resulting, for example, from existing lending relationships) that is not transferable to new owners and may therefore follow more-conservative policies than would be expected on the basis of the moral-hazard principle. Owners of such banks may also be restrained by managers who seek to preserve their reputations and employment prospects by pursuing more-conservative policies than are in the interests of owners (Demsetz, Saidenberg, and Strahan [1997], 278–83; Keeley [1990], 1183–200).

[18] One study of savings institution failures in 1985–1991 concluded that, among thrifts that failed, risky strategies of rapid growth and nontraditional investment were adopted mainly by thrifts that were initially *well-capitalized*, rather than by institutions that were already close to insolvency (Benson and Carhill [1992], 123–31). A study of Texas commercial banks concluded that for banks with high-risk profiles (as measured by loan-to-asset ratios), slower growth of capital was not accompanied by more rapid loan growth, contrary to what the moral-hazard principle would lead one to expect (Gunther and Robinson [1990], 1–8).

[19] Stiglitz (1987), 966–71.

[20] See, for example, Kane (1995).

ance enables the agent to pursue policies not in the interest of the principal.[21]

This view is based heavily on the performance of savings-and-loan regulators during the early 1980s in failing to close barely solvent and insolvent savings institutions. This practice partly reflected the depleted state of the S&L deposit insurance fund (the former Federal Savings and Loan Insurance Corporation) and the initial unwillingness of S&L regulators, the S&L industry, Congress, and the administration in the early 1980s to provide, or support provision of, the funds necessary to close insolvent thrifts. Also important were historical conflicts between the objective of promoting housing (the function of S&Ls) and that of maintaining the institutions' safety and soundness, the virtual control of the S&L insurance agency by the S&L chartering agency, and the undue influence the S&L industry exerted on its regulator.

The bank regulatory agencies did not suffer from similar deficiencies, and their experience in the 1980s was better. Most failed banks were resolved within the time frames later prescribed by FDICIA, although in some large-bank exceptions resolution was significantly delayed.[22] Nevertheless, the fact remains that unless other forces intervene, deposit insurance makes it possible for regulators to delay the resolution of insolvent banks and thrifts if they so choose, and such delay runs the risk that, when the institutions are finally resolved, losses to the insurance fund will have been unnecessarily increased.

Efforts to Curb Moral-Hazard and Principal/Agent Problems

Concern about bank risk taking and what is now called the moral-hazard problem is by no means new. A few of the earlier insurance programs incorporated stringent provisions to restrain risk taking by insured banks.[23] Bank stockholders were subject to double liability until the 1930s. The Banking Act of 1933, while phasing out double liability for national banks, introduced other restraints on bank risk taking. As noted above, the initial permanent plan for federal deposit insurance (adopted in 1933) set the insurance limit at less than 100 percent for deposits over $10,000. In addition, the 1933 Act authorized insured-deposit payoffs as the sole method of resolving bank failures. Finally, both the initial permanent plan and the temporary plan that replaced it provided for "insured depositor preference" in the settlement of receivership claims: the FDIC was to be made whole for its obligation to holders of insured deposits before any receivership dividends were available to holders of uninsured deposits.[24] These initial FDIC provisions have special significance for current discussions of various deposit insurance issues, including the "too-big-to-fail" problem. Had these provisions been retained beyond 1935 and had they been uniformly applied without government intervention to protect creditors of large institutions, uninsured depositors of failed banks would have been subject to virtually automatic losses, and federal deposit insurance and bank regulation might have developed quite differently from the way they have in the United States. In fact, however, these provisions were abandoned in the Banking Act of 1935.[25]

FDICIA is the latest attempt to deal comprehensively with the moral-hazard and principal/agent problems.[26] The rules adopted in FDICIA were aimed at preventing a recurrence of certain regulatory policies

[21] Principal/agent issues may also exist within a bank—between owners and managers—and may affect the bank's risk behavior. As mentioned above, managers of insolvent banks may seek to preserve their reputations and future employment prospects by following less-risky policies than would be preferred by owners who have nothing left to lose. On the other hand, managers of solvent institutions may favor more-risky policies than owners if their compensation is tied to the growth of the institution rather than to profitability. *See* Demsetz, Saidenberg, and Strahan (1997); and Gorton and Rosen (1995).

[22] *See* FDIC (1997), 1:51–56 and 452–62.

[23] For example, in the pre–Civil War Indiana program (generally regarded as the most successful bank insurance program of that era), each bank was liable to an unlimited extent for any losses suffered by insured creditors of any other bank in the system. In addition to unlimited mutual liability for banks, stockholders of failed banks were subject to "double liability," and officers and directors of failed banks were deemed by statute to be guilty of fraud and had the burden of proving their innocence; if unable to prove their innocence, managers were subject to unlimited personal liability. Insured banks were technically branches of a state bank that exercised considerable supervisory authority over the individual "branches," including authority generally associated with central banking organizations (Golembe and Warburton [1958], IV-1 to IV-30).

[24] FDIC (1934), 117–21; Marino and Bennett (1999).

[25] The Banking Act of 1935 authorized mergers as a method of resolving distressed banks, thereby making it possible to protect all depositors and general creditors in the event of failure. Specifically, the Act authorized the FDIC to facilitate the consolidation of a weak bank with a stronger one and the purchase of the weak bank's assets and the assumption of its liabilities, by making loans secured by the bank's assets, by purchasing its assets, or by guarantying the acquiring bank against loss. The Act also put uninsured depositors and general creditors on a par with the FDIC for purposes of receivership claims.

[26] The rules adopted in FDICIA require the following: the maintenance of the FDIC insurance funds at a specified target level; annual on-site examinations except for small, highly rated banks and thrifts; risk-based insurance premiums; increasingly severe regulatory restrictions on risk taking by a bank as its capital position declines; closure of institutions whose capital positions fall below a specified minimum; restrictions on Federal Reserve advances to undercapitalized banks; and least-cost resolution of failed banks and thrifts except if this were to pose systemic risk as determined by the FDIC, the Federal Reserve Board, the Secretary of the Treasury, and the U.S. president.

and actions of the 1980s that had come to be regarded with extreme disfavor. These included the failure to recapitalize the Federal Savings and Loan Insurance Corporation (FSLIC) promptly, cutbacks in bank examination forces, capital forbearance and delays in resolving troubled institutions, and protection of uninsured depositors in failed-bank transactions. Major provisions of FDICIA sought to strengthen the tools available to regulators in curbing risky behavior while at the same time restricting regulators' discretionary authority in using these tools. Although the FDICIA rules have not been tested by adverse financial-market conditions, proposals for further reforms generally assume that they are inadequate to restrain moral hazard or that they still leave too much discretion in the hands of regulators. In general, most of these proposals would subject banks and/or bank regulators to greater market discipline by shifting to the private sector responsibilities, costs, and risks now borne by the regulatory and deposit insurance agencies.

PART 2. SPECIFIC DEPOSIT INSURANCE REFORM PROPOSALS

Reform proposals have been designed primarily to (1) increase depositors' risk exposure; (2) impose increased costs on bank owners in line with their banks' risk characteristics; (3) use market mechanisms to ensure that prompt action is taken with respect to troubled banks; or (4) restrict the range of banking activities financed by insured deposits.[27]

Proposals to Increase Depositors' Risk Exposure

Proposals for exposing depositors to greater risk seek to induce depositors to increase their monitoring of bank risk and, by means of their deposit and withdrawal activity, discipline and restrain risky banks. However, increasing depositors' risk could defeat the very purpose of deposit insurance. Therefore, proponents of such action generally seek to limit its application to some particular group of depositors, chiefly those who are deemed to have the knowledge and resources to assess the riskiness of different banks. The main proposals to increase depositors' risk are reduction of deposit insurance limits, coinsurance for insured depositors, mandatory losses for uninsured depositors, insured-depositor preference in receivership claims, abolition of "too big to fail," and restriction of insurance coverage to particular classes of depositors.

In assessing such proposals, one should bear in mind the following considerations: (1) the relative cost of acquiring the information and analytical skills needed to monitor bank risk as compared with the cost and/or inconvenience of shifting funds to alternative investments entailing little risk; (2) the ability of depositors (and other market participants) to monitor bank risk effectively on the basis of publicly available data, given the "opaque" quality of bank loan portfolios; and (3) the threat to the stability of the banking system resulting when potentially ill-informed depositors have greater risk exposure. The first two considerations are central not only to the appraisal of proposals to expose depositors to greater risk, but also to many other reform proposals that seek to increase market discipline and private-sector monitoring of bank risk.

Reduced Insurance Limits

Reducing the maximum amount of insurance available to an individual depositor has been suggested as a means not only of giving more depositors incentives to monitor the risk behavior of banks but also of reducing failure-resolution costs while still providing protection for truly "small" savers.[28] Most countries with explicit deposit insurance programs have insurance limits representing only a fraction of $100,000.[29] In the United States reductions in insurance limits were considered in the early 1990s, but no action was taken. As price levels have risen, however, the real value of the $100,000 limit adopted in 1980 has declined to approximately $60,000 in constant dollars.

As indicated above, three main considerations are important in assessing proposals to increase depositors'

[27] Deposit insurance issues and reform proposals are discussed in detail in U.S. Department of the Treasury (1991).

[28] Effective insurance limits might be directly reduced by lowering the present $100,000 ceiling, by aggregating (for purposes of the $100,000 ceiling) the accounts held by a single depositor in more than one bank, or by restricting the total amounts that could be insured by a depositor under various rights and capacities. (And in any case, because insurance ceilings are typically allowed to remain constant for periods of years, their real value declines during intervals between adjustments.) With respect to aggregating deposits held in different institutions, the FDIC conducted a study, as required by FDICIA, of the cost and feasibility of tracking the insured and uninsured deposits of any individual and of the exposure of the federal government to all insured depository institutions (FDIC [1993a]).

[29] Of 68 countries identified by the International Monetary Fund as having explicit deposit insurance systems, most had insurance limits below $100,000, based on June 1998 exchange rates (Garcia [1999]). This information refers to ongoing, explicit insurance programs. Some countries have implicit guarantees or have introduced guarantees as emergency measures to meet current banking crises, with no limits on the amounts protected.

risk—the relative cost of risk monitoring, the opaque quality of many bank loans, and threats to financial-market stability from potentially ill-informed depositors. With regard to the first consideration, tracking and analyzing bank risk—whether done by ordinary depositors, "professional" financial-market participants (for example, rating agencies, uninsured depositors and creditors, security analysts), or government supervisory authorities—requires the expenditure of substantial resources. Among the available alternatives, relying on individual depositors to carry out the monitoring function would probably be more costly than would centralizing such activity in either public or private facilities. With regard to the second, most individual depositors are probably less able than government supervisors or professional private-sector analysts to penetrate the opaqueness of bank portfolios and would therefore be less able to distinguish accurately between weak and healthy banks.[30] With regard to the third, individual depositors' assessments of bank risk would therefore be more likely to lead to contagious runs than would more-informed judgments. This evaluation of what is involved in increasing depositors' risk is part of the rationale for government deposit insurance and bank supervision, as well as for proposals for increased monitoring by professional investors and analysts. Exposing ordinary depositors to greater risk might lead to demands that insured banks and thrift institutions disclose more meaningful and detailed information, but professional market participants would undoubtedly make better use of such information in monitoring bank risk.

Given the potential costs of tracking and analyzing bank risk, a reduction in deposit insurance limits probably would lead most affected depositors not to increase their risk-monitoring activity but to adjust their deposit balances in line with the new limits. The prospect of this outcome is heightened by the widespread availability in the United States of relatively risk-free alternatives for individuals' funds. Thus, existing accounts could be divided among two or more banks, and uninsured balances could be shifted to money-market funds and to large banks considered "too big to fail" (TBTF). As for the expense of resolving failed institutions, lower deposit insurance limits might reduce it temporarily because uninsured depositors would share more of the cost—but any such cost savings would result mainly from depositor ignorance and inertia and would be largely eliminated as depositors adjusted their holdings to the new insurance limits.

Coinsurance for Insured Depositors

As noted above, the initial permanent plan for federal deposit insurance, adopted as part of the Banking Act of 1933, provided for coinsurance for deposits from $10,000 to $50,000.[31] Although coinsurance has precedents in deposit insurance and has been applied extensively in other insurance markets, it is doubtful whether it would in fact induce many individual depositors to invest the time and knowledge necessary for tracking and analyzing bank risk effectively. Here again, the behavior of depositors is likely to be influenced heavily by the cost of tracking and analyzing bank risk and the availability of alternatives for holding liquid funds. If coinsurance applied only to relatively large balances, depositors presumably would reduce balances below the maximum level at which 100 percent coverage applied (for example, $10,000 in the case of the 1933 Banking Act provision). If coinsurance applied to *all* insured deposit balances however small, deposits would become less attractive relative to other financial instruments; as a result, individuals would presumably shift some savings away from deposits rather than increase their monitoring of bank risk. At the same time, however, a system of coinsurance for *all* insured deposits would cause some reduction in resolution costs because depositors would not be able to avoid the risk of losses from bank failures as long as they continued to hold bank deposits.

Mandatory Loss for Uninsured Depositors

A related proposal would restrict the automatic loss imposed at the time of failure to uninsured deposits and similar nondeposit credits. One variation of this idea would require a mandatory "haircut" of up to a stated percentage (x percent) of uninsured deposits

[30] Kane (1987) states that before and during the 1985 state insurance crisis in Ohio, a group of uninsured thrifts were able to attract deposits in competition with state-insured institutions; he attributes this to the uninsured institutions' conservative lending policies and the quality of information these institutions passed on to customers about their policies. Better information would surely facilitate bank risk monitoring by individual depositors, but as noted above, would probably be used more effectively by professional market participants. Calomiris and Mason (1997) and Saunders and Wilson (1996) concluded that during bank runs in the early 1930s, depositors were able to distinguish between solvent and insolvent banks. Neither study differentiated between "small" depositors—those who would be affected by a reduction in the insurance limit—and larger, more sophisticated depositors. Nor is it clear how applicable these conclusions may be today, given the more complex operations of present-day banks.

[31] Of the 68 countries identified by the IMF as having explicit insurance programs, 16 have put coinsurance features into their plans (Garcia [1999]).

and similar credits at failed banks. The maximum loss rate to be suffered in the event of failure would be known in advance. Uninsured depositors would bear in full losses below the stated rate (that is, less than the hypothetical x percent) but would be protected against losses above that rate.[32]

This proposal is aimed largely at addressing the TBTF and moral-hazard issues. Proponents argue that limiting the loss the uninsured depositor might otherwise bear will reduce the risk of contagious runs and banking panics and lessen the temptation of regulators and elected officials to bail out large institutions. However, it is not obvious that capping losses of uninsured depositors would significantly diminish the threat of contagion and instability unless the cap were set low—at which point, uninsured depositors might have little incentive to monitor risk. Prescribing a loss rate that would materially reduce the risks of contagion while preserving strong risk-monitoring incentives would indeed be difficult. Gradual implementation of the proposal would be helpful, but ultimately the selection of an appropriate loss rate would be a matter of guesswork with uncertain consequences. At some point, increased market discipline might spill over into disruptive bank runs, and that point is hard to locate in advance.

The mandatory loss proposal may be attractive on grounds of equity. If all uninsured depositors faced the prospect of loss when a bank failed, incentives to move funds to the very largest banks would decrease, as would complaints that small banks were treated unfairly. However, imposing losses on all uninsured depositors would require regulators and elected officials to be willing to allow large banks to fail in some future crisis and to apply the promised haircut to their uninsured depositors. In short, regulators and elected officials would have to be willing to treat troubled large banks the same as troubled small banks. As suggested below, however, regulators and elected officials may wish to retain the option of treating large banks differently.

With respect to moral hazard, it is uncertain what effect the mandatory loss proposal might have on private-market risk monitoring. Uninsured depositors would face the certainty of a loss in the event a bank failed, but the magnitude of the loss would be capped. Under the present system, uninsured depositors face losses of uncertain magnitude (either greater or less than the hypothetical x percent loss) if a bank fails unless they happen to choose a TBTF bank, in which case they will suffer no loss. As long as it is uncertain which banks may be deemed TBTF and under what circumstances, uninsured depositors are at risk in the event of a bank failure. Indeed, the range of potential losses is wider under the present regime, from zero to something in excess of x percent, than under the mandatory loss proposal. It is unclear whether the prospect of mandatory but capped losses would produce more-effective market discipline than the present system of potentially unlimited losses that may or may not be imposed in particular cases.

As suggested above, the end result of a mandatory loss regime would also depend on the magnitude of monitoring costs relative to the cost and/or inconvenience of shifting funds to collateralized obligations or other alternatives to uninsured deposits. The large depositors and nondeposit creditors who supply unprotected short-term credit to large banking organizations presumably have the resources and analytical ability to distinguish among banks according to risk. However, they may not conclude that expending additional resources for this purpose is useful, on a cost-benefit basis. Responses may differ among individual depositors and nondeposit creditors, depending partly on their existing cost structures.[33] Nevertheless, instead of more-active risk monitoring and greater attempts to discriminate among banks according to risk, some or many may elect to keep their deposits to a minimum and shift funds to collateralized obligations.[34] Or, by keeping their deposits and loans at all or most banks in short maturities, they may simply rely on their ability to move funds quickly once a bank's troubles become

[32] Stern (1999). An alternative method of introducing coinsurance would be to impose on uninsured depositors only a specified fraction (known in advance) of the loss they would otherwise suffer in the absence of any protection. Under this alternative, uninsured depositors would suffer a loss in the event of a bank failure but would always recover more of their funds than they would if the bank's assets were simply liquidated. Both alternatives are proposed in Feldman and Rolnick (1998).

[33] Some depositors and nonbank creditors may already have made substantial investments in monitoring capabilities, while others would face significant start-up costs. Accordingly, incremental costs for expanded monitoring activities might be considerably different in the two cases.

[34] One may argue that decisions by uninsured depositors and nondeposit creditors to keep maturities short or to reduce risk by shifting to secured lending are themselves instruments of market discipline. They are if these decisions are made selectively depending on the basis of the depositor/creditor's assessment of the risk posed by individual institutions and if they are made on a timely basis before a bank's troubles have become a matter of public knowledge and supervisory intervention has been initiated. A shift to secured lending after a bank's problems are widely known is merely a form of run.

obvious and a matter of public knowledge.[35] In that event, the uninsured depositors left behind to suffer losses when a bank fails are likely to be those who are not informed or alert enough to make the necessary moves to protect themselves.

Insured-Depositor Preference in Receivership Claims

Legislation passed in 1993 requires that depositor claims (including both those of uninsured depositors and those of the FDIC standing in place of insured depositors) be satisfied in full before unsecured, nondeposit creditors receive any of the proceeds of failed-bank asset liquidations. National depositor preference was adopted in 1993 budget legislation apparently in the belief that it could lead to substantial FDIC cost savings, particularly at large banks that are heavily funded by unsecured, nondeposit liabilities. It was also believed that national depositor preference would create incentives for nondeposit creditors to monitor depository institutions more carefully.[36]

Under *insured-depositor* preference (which, as noted above, was provided in the Banking Act of 1933), uninsured depositors and unsecured, nondeposit creditors would not receive any funds until the FDIC had been made whole for meeting its obligation to insured depositors. The effect of insured-depositor preference on losses of uninsured depositors is suggested by table 1. Insured-depositor preference would tend to reduce FDIC costs and increase the losses of uninsured depositors when banks fail, as compared with the present system of depositor preference. As a result, uninsured depositors would have increased incentives to protect themselves—whether by increasing their risk-monitoring activities or by moving funds out of deposits and into collateralized and other relatively low-risk obligations.[37] Again, the potential effect on market discipline is unclear.

Abolition of "Too Big to Fail"

At the heart of the misnamed "too-big-to-fail" controversy is the question of whether losses should be imposed on uninsured depositors and nondeposit creditors of large failed banks. During the 1980s bank regulators feared the possibility that imposing such losses might trigger runs on other large banks that were heavily dependent on uninsured funding. Accordingly, large troubled banks were resolved in ways that protected all depositors and other creditors.

Aside from contagion effects on other banks, the failure of a large bank may have serious domestic and international economic consequences if credit flows are reduced to borrowers who lack cost-effective funding alternatives. The failure of a large bank may also disrupt the payments system, cause losses to correspondent

[35] Marino and Bennett (1999) discuss the behavior of uninsured depositors and creditors of a number of large banks before the banks failed in the 1980s, and potential changes in pre-failure behavior resulting from the adoption of FDICIA in 1991 and national depositor preference in 1993.

[36] Marino and Bennett (1999).

[37] Losses of unsecured, nondeposit creditors under an insured-depositor preference regime would depend on how they were treated relative to uninsured depositors. If the two groups were treated alike, unsecured, nondeposit creditors could suffer lower losses in some cases than they do under the present system of depositor preference; this is illustrated in table 1.

Table 1
Loss Rates on Claims

Assets	Claims		No Preference	Depositor Preference	Insured-Depositor Preference[a]
Total Loss = 10% of Total Claims, FDIC Share of Total Claims = 70%					
	FDIC	70%	10%	0%	0%
	Uninsured Deposits	20	10	0	33
	General Creditors	10	10	100	33
90%	**Total**	**100%**	**10%**	**10%**	**10%**
Total Loss = 10% of Total Claims, FDIC Share of Total Claims = 50%					
	FDIC	50	10	0	0
	Uninsured Deposits	30	10	0	20
	General Creditors	20	10	50	20
90%	**Total**	**100%**	**10%**	**10%**	**10%**
Total Loss = 20% of Total Claims, FDIC Share of Total Claims = 70%					
	FDIC	70	20	11	0
	Uninsured Deposits	20	20	100	67
	General Creditors	10	20	100	67
80%	**Total**	**100%**	**20%**	**20%**	**20%**

[a] Assumes that uninsured depositors and unsecured, nondeposit creditors are treated alike.

banks, and generate counter-party credit losses in derivatives markets.

FDICIA took two steps to reduce the likelihood that uninsured depositors would be protected in bank failures: it strengthened the least-cost test, and it prohibited protection of uninsured depositors if such protection would increase the cost to the FDIC, subject to a systemic-risk exception.[38]

Some scholars have argued, on the basis of pre-FDIC experience in the United States or of experience in countries without deposit insurance, that the likelihood of a contagious run bringing down healthy banks is small.[39] Even so, "abolishing" TBTF in any meaningful sense may be impossible. The likelihood that a systemic crisis will be caused by a least-cost resolution of a large bank may be small, but if such a crisis were to occur, the consequences might be great. This is especially true in light of recent mergers among some of the largest banks in the country, with the possibility of additional such mergers. Consolidation into fewer, larger banks may reduce the risk of individual bank failures because of greater geographic and product diversification—assuming that the larger size of the resultant institutions does not encourage them to assume additional risk.[40] However, the failure of only one of several currently existing megabanks could deplete or seriously weaken the deposit insurance fund, with potentially adverse consequences for the stability of financial markets. Accordingly, regulators, administration officials, and Congress may want to retain the option of treating troubled large banks differently from troubled small banks. Moreover, given the past treatment of troubled large banks, one may question whether a ban adopted in good times would be a credible restriction on the behavior of regulators and elected officials in some future crisis.

Although outright abolition may be difficult or impossible, some degree of uncertainty as to which banks may be treated as TBTF, and under what circumstances, is needed to encourage creditors of large institutions to apply market discipline. Under almost any reasonable resolution scenario, stockholders face the prospect of losses—but if uninsured depositors in a bank believe the bank TBTF and expect to be protected, they will have little incentive to monitor its risk.

Restriction of Coverage to Particular Types of Depositors

Insurance coverage could be confined to individual savers or some other narrowly defined group of depositors, excluding from protection the accounts owned by depositors who may be presumed capable of assessing the risk characteristics of banks. Two-thirds of the countries that have explicit deposit insurance programs exclude interbank deposits from protection, and a few countries limit deposit insurance to households and nonprofit organizations.[41] In countries that recently adopted explicit deposit insurance *de novo* and therefore were not breaching longstanding protections, limited coverage may be feasible. The United States, in contrast, has a long history of insuring deposits of all types of account holders, and efforts to scale back such coverage would probably meet strong political resistance.

Proposals to Impose Increased Costs on Bank Owners Commensurate with Their Banks' Risk Characteristics

Given the problems associated with increasing depositors' risk, numerous proponents of reform seek to create substantially stronger incentives for bank owners to restrict risk taking by their institutions. The rationale for such proposals is that bank stockholders have the knowledge to assess risk-return relationships accurately and, if provided appropriate incentives, have the power to require prudent policies on the part of officers and directors. The main proposals have been to increase losses of owners of failed banks beyond the value of their investments (contingent liability), require substantially increased capital, and increase funding costs associated with risky lending activities.

[38] Any decision to invoke the systemic-risk exception under FDICIA is to be made by the Secretary of the Treasury, upon the recommendation of two-thirds of the Board of Directors of the FDIC and of the Federal Reserve Board, after consultation with the U.S. president. Any additional cost to the FDIC is to be financed by a special assessment on the banks or thrifts in the same insurance fund. Unlike the case of regular assessments, the base for this special assessment would include foreign deposits, with the result that the burden would fall more heavily on large banks, which have a disproportionate share of such deposits. With respect to least-cost resolutions, before FDICIA various types of resolution transactions were permissible if they were less costly than an insured depositor payoff or if the bank's services were determined to be "essential" to the community.

[39] Kaufman (1994); Calomiris and Gorton (1991).

[40] The effect of consolidation on bank risk is discussed in Berger, Demsetz, and Strahan (1999).

[41] Of the 68 explicit deposit insurance programs identified by the IMF, 45 excluded interbank deposits (Garcia [1999]).

Contingent Liability for Bank Stockholders

The most direct means of increasing bank stockholders' aversion to risk is to impose additional losses on them, beyond the amount of their investment, if recoveries on receivership assets cannot meet the claims of creditors of failed banks. As noted above, "double liability" of stockholders applied to national banks from 1863 to 1933.[42] Under double liability, owners of a failed bank could lose both the value of their stock and the cost of an additional assessment up to the par value of their shares. A more recent proposal is to require a "settling up" process that would impose additional charges on stockholders and managers of failed banks after the banks were resolved. However, despite the long history of double liability in the United States, proposals to restore some form of increased or contingent stockholder liability in bank failures have attracted little attention outside of academic circles. Any serious effort in this regard would have to address the prospect that the flow of equity funds to the banking industry would be curtailed, with potentially adverse effects on new bank entry, competition, and availability of credit to bank borrowers.

Increased Capital Requirements

As noted above, higher capital requirements are perhaps the strongest restraint on moral hazard because they force stockholders to put more of their own money at risk (or suffer earnings dilution from sales of shares to new stockholders) and provide a larger deductible for the insurer. Higher capital requirements also tend to reduce returns on equity because banks must substitute equity for lower-cost deposits, and this substitution increases their average cost of funds. Reduced leverage may slow the growth of the banking sector and bank credit, discourage entry of new banks, and reduce competition.[43] Pushed too far, therefore, higher capital requirements could have adverse effects on banking and the nonfinancial economy. Moreover, some theoretical analyses suggest that higher capital requirements may actually lead to increased risk taking under certain conditions, as banks with reduced leverage seek to offset the reduction in expected returns by increasing their higher-risk, higher-return lending.[44]

Risk-Based Capital Requirements

Risk-based capital standards were designed partly to overcome any incentives on the part of banks to offset the effects of flat-rate capital requirements by assuming greater risk. The risk-based standards presently in effect in the United States were adopted in the early 1990s in conformity with the "Basel Accord" of 1988. They prescribe different minimum capital ratios for four asset categories, or "buckets," and for off-balance-sheet activities. But almost from their inception these standards have been criticized on the grounds that they consider only credit risk; take no account of diversification or hedging; set inappropriate capital requirements for the various risk buckets; and prescribe the same minimum capital levels, within a particular asset bucket, for loans having very different risk characteristics. As a result of these shortcomings, opportunities exist for "regulatory capital arbitrage," whereby capital requirements may be reduced while underlying risk is not materially changed.

The growing complexity of bank operations and the rapid changes taking place in financial technology, both of which particularly affect large institutions, have focused attention on banks' internal risk-management systems as a means of helping regulators set risk-based capital requirements for individual institutions.[45] Minimum standards have been established for calculating "value-at-risk," a calculation based on the behavior of underlying risk factors such as interest rates or foreign-exchange rates during a recent period. Value-at-risk represents an estimate, with a specified degree of statistical confidence, of the maximum amount that a bank may lose on a particular portfolio because of general market movements.

So far, this approach has been confined mainly to large banks' trading activities. The application of these techniques to risk-based capital requirements for credit risk comes up against significant problems of data availability, including the fact that serious credit problems have developed infrequently over a long time period, the absence at many banks of consistent internal credit-rating systems covering such periods, and the

[42] Esty (1997); Kane and Wilson (1997).

[43] A more precise formulation of the potential effect of capital requirements can be found in Berger, Herring, and Szego (1995). Under conditions spelled out in that article, increasing equity beyond market requirements reduces the value of the bank and raises its weighted average cost of financing, so that in the long run the size of the banking industry and the quantity of intermediation may be reduced.

[44] Calem and Rob (1996); Gennotte and Pyle (1991). A contrary view is presented in Furlong and Keeley (1989).

[45] Federal Reserve Bank of New York (1998); Jones and Mingo (1998); Nuxoll (1999).

questionable accuracy of bond-market data as proxy measures of loan quality. Efforts to solve these problems are under way, but at present internal models apparently do not provide a reliable basis for setting regulatory capital requirements for credit risk.

Risk-Based Insurance Premiums

Risk-based premiums are designed to raise the explicit cost of funding risky activity. In an ideal world, premiums would be assessed on the basis of risky behavior, not on unfavorable outcomes such as loan losses and reductions in capital. However, under the present system as adopted in the early 1990s, assessments vary with capital ratios and supervisory ratings—that is, premiums are increased after the bank experiences losses, reductions in capital, or other discernible reductions in quality. Initially the best-capitalized, highest-rated banks paid an assessment of 23 basis points on assessable deposits, and the worst-capitalized, lowest-rated banks paid 31 basis points.[46] Currently the assessment rate ranges from 0 to 27 basis points, with more than 90 percent of all insured banks and thrifts paying no premiums. Many observers doubt that existing differences in premiums accurately reflect differences in bank risk or provide a sufficient incentive to reduce moral hazard significantly.[47]

Banks with little capital and poor supervisory ratings are, of course, more likely to fail than stronger banks and thus pose a greater danger to the insurance fund. However, bank regulators have not attempted to extract sharply higher insurance premiums from these banks, partly because doing so might hasten their descent into insolvency. Rather, regulators have pressured or encouraged problem banks to strengthen their capital positions by reducing asset growth, cutting back dividends, and increasing their infusions of external capital. In this regard, it should be noted that even in the 1980s three-fourths of all problem banks (banks with CAMELS ratings of 4 or 5) survived as independent institutions or were merged with healthier banks without FDIC financial assistance.[48] These rehabilitation efforts might have been impeded if problem banks had been assessed deposit insurance premiums commensurate with the risk the banks posed to the insurance fund.[49]

The chief problem is that some types of risky bank behavior are hard to assess in advance of losses, when banks are still profitable and able to absorb sharply increased premiums and when there is still an opportunity to modify risky behavior. For example, few observers recognized the magnitude of the risks present in farm, energy, and commercial real-estate lending before losses were incurred as a result of regional and sectoral recessions during the bank and thrift crises of the 1980s. Ideally, risky behavior should be accurately identified and distinguished from new, innovative, and other unfamiliar but acceptable activity. Moreover, the probability of adverse outcomes and the potential magnitude of the resultant loss should be estimated in order to gauge the seriousness of the risk. Because this is difficult to do in advance of actual losses, deposit insurers are loath to charge the sharply higher premiums that might be appropriate in particular cases.[50]

Proposals have been made to get around this difficulty by basing premiums on market indicators, such as prices that private reinsurance companies require to compensate them for bearing a portion of the risk of failure of individual institutions, or prices of subordinated or other debt issued by banks.[51] However, it is not obvious that private market participants would be more successful than supervisory authorities in accurately assessing and weighing risky behavior in advance of losses. More realistically, such market signals could serve, along with other information, as input in the assessment process.

[46] This narrow 8 basis point spread reflected another FDICIA requirement (that assessments were to be maintained at an average annual rate of 23 basis points until the Bank Insurance Fund was fully recapitalized) as well as a reluctance on the part of the FDIC to impose additional burdens on weaker banks—burdens that would interfere with their efforts to restore their capital positions.

[47] Options-pricing models generally yield wider estimates of fair insurance premiums among individual banks. In general, fair premiums have been estimated to be very low for a majority of banks, but much higher for a minority (Ronn and Verma [1986]; Kuester and O'Brien [1990]). See also Pennacchi (1987).

[48] FDIC (1997), I:62 and 443–48.

[49] A 1995 simulation of the effect of a 20 basis point assessment differential between BIF-insured banks and SAIF-insured thrift institutions found that the number of thrift failures and failed-thrift assets would increase by as much as one-third, depending on the assumptions in a particular economic scenario (FDIC [1995], 20).

[50] One reason some types of bank risk are hard to assess in advance of losses is the influence of overall economic conditions. For example, lending practices that lead to losses in a serious recession may pose no problem if the economy stays strong. In addition, losses on loans of different types are often correlated. Furthermore, many banks remain specialized in particular regions or economic sectors, and this concentration of risks may aggravate (or alleviate) the effects of changing economic conditions on loan losses, depending on regional and sectoral differences in the pace of economic activity. Therefore, the probability and potential magnitude of loss from a particular lending practice depend heavily on factors outside the practice itself. The relationship between risk factors and actual losses is less stable and predictable in bank lending than, say, in life insurance.

[51] Stern (1999).

Proposals to Use Market Mechanisms to Ensure Prompt Action with Respect to Troubled Banks

In view of the potential principal/agent problems inherent in deposit insurance, a number of reforms have been proposed to reduce reliance on government supervisors to assess and restrict bank risk and to resolve failing institutions promptly. These include the substitution of market value accounting for historical cost accounting, outright privatization of deposit insurance, and the privatization (in varying degree, depending on the proposal) of the risk-monitoring function. The latter includes proposals to require the FDIC to purchase reinsurance from private sources or to issue its own capital notes, and proposals to require large banks to issue subordinated debt or purchase private insurance for a portion of their deposits.

A basic purpose of these proposals is to obtain assessments of the condition and risk exposure of banks from private financial-market participants. The underlying assumptions are that private market participants are better able, and more willing, than government regulators to recognize developing problems and to act promptly to minimize losses. This is believed to be so because the compensation of these private-sector parties is based on their success or failure in assessing bank risk and in forcing timely supervisory action to cut the losses developing in troubled institutions. As it now stands (so the argument goes), private market participants have limited incentives to undertake this monitoring role; reduced reliance on government surveillance would encourage increased private-sector monitoring. Also, private market participants might demand fuller disclosure of bank information to support their risk assessments. As noted above, however, for market discipline by debt-holders to be effective, there must be some degree of uncertainty as to whether and to what institutions the TBTF doctrine might be applied.

Market Value Accounting

The purpose of substituting market value accounting (MVA) for historical cost accounting would be to depict more accurately the condition and riskiness of banks and to force both regulators and bankers to act more promptly to cure problems. Although MVA has considerable support among academic writers, several major issues remain unresolved.

First, it is unlikely that the market can accurately access the kind of information on individual loan quality, internal controls, and other internal risk-related matters that supervisory authorities gather in on-site examinations. If comprehensive MVA were adopted, therefore, supervisory assessments would still be necessary to provide information on risk factors not apparent from reported asset and liability values as well as to ensure the accuracy and consistency of the information that insured institutions released to the public.

Second, some types of bank assets and liabilities have no active secondary markets. Proponents of MVA deal with this fact by holding that prices of bonds, securitized loans, or other traded instruments could be used as proxies, or that nontraded assets and liabilities could be priced by discounted cash-flow techniques. They also point out that values of nontraded balance-sheet items are routinely determined through competitive bidding or by agreement of the parties engaged in mergers, whole-loan sales, or failed-bank transactions.

The accuracy of the values that would be produced by these proposed approximations cannot be known. If one holds that banks specialize in lending to borrowers who lack practical access to capital markets and that such loans are fundamentally nonmarketable, assets that are securitized or traded whole do not necessarily represent banks' nontraded assets. Furthermore, whereas in merger and other transactions values of nontraded assets and liabilities are determined by bidding or by agreement, in more adversarial situations (such as supervisory actions that result in penalties or burdens on the bank) similar procedures may not be feasible. If proxies for market values are to serve as an effective trigger for supervisory intervention, they must be widely accepted as accurate and must be capable of being readily defended by the regulators; this may not always be feasible, given the opaque nature of many bank loans. However, many writers would argue that proxy measures of market values could still play the less-ambitious role of indicating the true condition of banks better than historical cost does.

To avoid the problem of valuing nontraded balance-sheet and off-balance-sheet items, some observers have suggested that MVA be applied only to items for which active secondary markets exist. However, critics of this view have argued that a partial approach might lead to greater volatility and inaccuracy of reported net worth than either historical cost or comprehensive MVA.[52] This, in turn, could discourage prudent risk-management activities. An example is when banks use

[52] U.S. Department of the Treasury (1991), XI-31 to XI-32. Carey (1995) concluded that any net benefits of market valuation of securities only (or of a portion of securities as required by the Financial Accounting Standards Board in 1993) would be small. Federal Reserve Board Chairman Alan Greenspan criticized both a "piecemeal" approach to fair value accounting and a "sudden" adoption of comprehensive market value accounting, stating that either one of them could produce unreliable information and cause an inappropriate increase in the volatility of reported income and equity measures (Greenspan [1997]).

securities and other marketable instruments to hedge positions in nonmarketable assets and in liabilities: under partial market valuation, changes in market prices might result in gains or losses in market-valued items without recognition of offsetting changes in values of items carried at historical cost. In fact partial MVA currently prevails, since reported amounts for trading assets, securities-held-for-sale, and certain other items reflect market prices; it is not clear that the effects have been significant.[53]

A third issue is the concern of many observers that MVA (comprehensive as well as partial) might lead to wide short-run variation in the stated value of a bank and that such variation would obscure underlying trends in the banks' condition. According to this view, prices of bonds and other proxies might reflect transitory changes in market conditions rather than the value of the nonmarketable loan portfolios they were being used to represent, and might be more volatile than was warranted. This objection also reflects the absence (in the opinion of critics) of specific guidance and standards for estimating fair market values of some balance-sheet items. Finally, it reflects a concern that banks engaging in even moderate interest-rate risk might experience volatile capital values in periods of rapid interest-rate changes.

With respect to the last point, the adoption of comprehensive MVA could have substantial economic effects. The acquisition of long-term assets might be discouraged because they would lose value in periods when equity and debt prices were declining, whereas values of shorter-term liabilities would remain relatively stable. Proponents of MVA might retort that the hazards of a "borrow-short, lend-long" balance-sheet structure are precisely the type of risk that historical cost accounting has obscured and that marking to market would clearly reveal. As a result, they would argue, MVA would reduce bank risk by discouraging maturity mismatches. However, as with other reform proposals, the reduction in bank risk would come at a price. Depending on how bank assets and liabilities were adjusted, adoption of comprehensive MVA might be accompanied by increased costs to long-term borrowers and/or a shift of risk from banks to borrowers or other segments of the public.

Given these problems, MVA may be feasible only for wholesale banks that invest heavily in marketable or securitizable instruments and engage in extensive trading activity. At present such banks constitute a small minority of all U.S. banks, although their share of total bank resources is more substantial. These banks are already subject to the kind of market discipline envisioned by proponents of market value accounting. They tend to rely heavily on funding through uninsured deposits and nondeposit credits, and their total assets are heavily weighted by assets that reprice frequently or are carried at market prices.[54] Like other publicly traded banking organizations, they are also subject to market discipline on the part of equity investors. Conceivably the number of wholesale banks may grow as bank powers are broadened and secondary markets continue to develop, but most banks will probably continue to specialize in nonmarketable loans, with this specialization remaining an obstacle to the adoption of comprehensive MVA.

Privatizing Deposit Insurance

Those who propose privatizing deposit insurance sometimes argue that eliminating federal deposit insurance would make it politically feasible to eliminate restrictive federal bank regulations. Over the years numerous private deposit insurance programs have been organized by various states for mutual savings banks, savings-and-loan associations, credit unions, and other depository institutions operating in those states.[55] As of 1982, 30 such programs existed, but since then most have failed because they could not meet their obligations or have been phased out because adverse public reactions were feared. Historically, many private, state-level insurance programs suffered from one or more of

[53] Barth *et al.* (1995) concluded that fair value accounting for investment securities gains and losses increased the volatility of bank earnings relative to historical cost but that this increase was not reflected in bank share prices.

[54] Trading assets, securities available for sale, and other real estate are carried for the most part at values that reflect market prices. Assets that reprice daily or frequently include noninterest-bearing deposits, fed funds sold, and repos. For all insured commercial banks, the total of all such assets represented 30 percent of total assets at the end of 1998. The percentages were much higher for a few banks, such as Bankers Trust Co. (71 percent) and Morgan Guaranty Trust Company of New York (78 percent). On the other hand, total loans and leases represented 58 percent of total assets for all insured commercial banks but only 20 percent for Bankers Trust and 15 percent for Morgan Guaranty Trust.

[55] English (1993) classifies these programs as "private" because they had no financial backing from state governments, although states sometimes provided funds when the deposit insurance agency could not meet its obligations. Even so, in a number of cases the state allowed "insured" depositors to suffer losses—attesting to the essentially private nature of the programs. See also FDIC (1983). Proposals to privatize deposit insurance are discussed in FDIC (1998), 53–89.

the following weaknesses: lack of risk diversification because of geographic limitations or the dominance of a few large institutions, adverse selection resulting from the fact that the stronger institutions were able to withdraw from the program, insufficient funding to meet systemic losses, inadequate supervision, and conflicts of interest. Some of these weaknesses would be eliminated if a private fund were organized on a national basis and if membership were mandatory.

The chief questions raised by privatization proposals are these: (1) Why would a private deposit insurance system be superior to federal deposit insurance? (2) How would a private system deal with catastrophic losses? (3) How would a private system deal with a potential credibility problem—the belief that in extremis the federal government would come to the rescue and bail out the private fund in order to ensure protection of depositors?

With respect to the first question, it seems clear that private insurance organizations would face the same problems in assessing bank risk and would have to use the same techniques for this purpose that government supervisory agencies do. Private insurance organizations might have *stronger incentives* to assess risk accurately if they stood to profit from correct assessments and to suffer losses from incorrect assessments. Strong incentives to restrain risk taking would also exist if the insurance arrangements were organized on mutual lines, whereby all insured members were mutually liable for all insurance losses.[56] It has also been argued that private organizations would have greater incentives to act promptly in the case of troubled banks in order to minimize failure resolution costs, whereas action by regulators may be delayed by bureaucratic procedures. Although the "prompt corrective action" provisions of FDICIA seek to prevent undue regulatory delay, many proponents of privatizing deposit insurance or of other comprehensive reforms have apparently concluded that these provisions are inadequate.

One consideration generally ignored by supporters of the proposal is that a private deposit insurance organization would presumably pursue different goals from those a government agency pursues. As noted above, federal deposit insurance has been provided partly to promote the stability of banking and financial markets. Federal regulators must also be mindful of how their supervisory actions affect the economy—witness the "credit crunch" of the early 1990s, when regulators were severely rebuked by elected officials for "overzealously" applying new capital standards. Public policy also favors entry of newly chartered institutions into banking markets and vigorous competition among banks. In keeping with such public-policy objectives, federal deposit insurance is broadly available to all qualifying banks through long-term contracts that, once issued, are seldom terminated.

In contrast, a private deposit insurance company would presumably focus more narrowly on the objective of earning maximum profits from the business of insuring deposits, and a mutual guaranty organization might concentrate on minimizing costs to the existing body of insured members. The private company or mutual organization might achieve these objectives by assessing the insurance risks posed by individual banks and charging commensurate premiums—or instead might seek to deny coverage to banks that would strain the insurers' or guarantors' financial capacity or banks whose risk characteristics were too difficult or expensive to monitor.[57] Unlike government insurers, they

[56] Calomiris (1990) and others have argued that unlimited mutual liability in mutual deposit insurance systems (like the pre–Civil War Indiana system) provided strong incentives to member institutions to monitor each other and to require strict supervision. A similar conclusion has been drawn from the experience of private clearinghouses. English (1993) attributed the success of these arrangements to the small number of members involved (which facilitated monitoring and prevented "free-riding" by risky institutions), strong supervisory powers, high exit costs for insured members, and the fact that these arrangements included central-bank features. The chief problem with such private-sector arrangements is that the necessary assessments to protect depositors at failed institutions may, under extreme conditions, cause other institutions to fail or may be effectively resisted by them. This is particularly true if the initial failures are at large institutions that hold a disproportionate share of the system's resources.

[57] Unlike some other types of insurance, losses on deposit insurance are not independent of one another; in serious national or regional economic recessions they tend to be bunched and have the potential to reach "catastrophic" proportions. Private insurers often seek protection against bunched or catastrophic losses by excluding such losses from coverage. This option is generally not available to government deposit insurers except in extreme cases, and it might be inconsistent with important public-policy objectives of government deposit insurance. For example, municipal bond insurance companies, which arguably are subject to a similar risk of loss bunching because of adverse business conditions, have generally protected themselves by denying coverage to low-quality bond issues. According to Sweeney (1998), premiums are based on the assumption of zero loss, and 53 percent of the municipal bond issues floated in 1996 were uninsured. Other examples are the "wartime exclusion" in life insurance policies and the "hostile action or insurrection exclusions" in fire insurance. In property/casualty insurance, many exposures faced by corporations and households are retained and never reach insurers, and very little of the reinsurance in place provides protection against industry-wide losses for catastrophic events greater than $5 billion, at a time when prospective losses can easily exceed $50 billion (Froot [1999], 2). Froot and O'Connell (1999) conclude that in the 1990s, a period of unprecedented catastrophic losses, there was evidence that "capital market imperfections" impeded the flow of capital into the property/casualty reinsurance sector.

might choose to offer only short-term contracts that are easily cancelled, or might take other steps to limit their exposure. Private insurers who pursued such low-risk strategies would, of course, have to accept lower expected returns, but from their standpoint this might be preferable.[58]

Thus, whether a private deposit insurance system or the present federal system would be preferable depends partly on one's view of the purpose of deposit insurance. If one construes the purpose narrowly, holding that deposit insurance should do no more than provide depositors with some measure of protection at minimum cost to insurers and taxpayers, then in principle a private system might have merit. However, if one construes the purpose more broadly and believes deposit insurance should also promote financial-market stability, new bank entry and competition, and perhaps other broad objectives, then the appropriate vehicle for providing deposit insurance is a public agency subject to oversight by elected officials. Reconciling broad and sometimes conflicting public-policy objectives is preeminently a governmental function.

With respect to the second question (how would a private system deal with catastrophic losses), most observers agree that a federal deposit insurance fund commands greater resources than a private insurance facility would. The availability of resources that can be mobilized in an emergency is critical in protecting against bunched or catastrophic losses; to many people, providing such protection is a principal function of deposit insurance. Private insurers might seek to increase their capacity through reinsurance arrangements and catastrophe securities, as casualty insurance providers have tried to do. Even with such arrangements, however, the resources available to private insurers would probably fall short of the resources available to a government deposit insurer. Although one can design on paper a private system with sufficient capital for catastrophic losses, experience in existing private insurance markets suggests that, in practice, the supply of private capital for such losses is limited. As a result, it might be hard to maintain public confidence in the ability of a private fund to protect depositors under extreme conditions. In this regard, one proponent of privatization would assign a back-up, or reinsurance, role for the FDIC.[59]

With respect to the third question (how would a private system deal with a potential credibility problem), proposals for private deposit insurance assume that losses from bank failures would in fact be borne by private insurers or guarantors who would not be able to pass them on to the federal government or other parties. This assumption might be questionable, however, if the public continued to regard the protection of deposits as ultimately a government responsibility, or if the remaining insured members would be seriously weakened by increased assessments, or if the remaining insured members were successful in exerting political pressure for governmental relief. Federal sponsorship of a private deposit insurance system might lead to expectations that the federal government would come to the rescue if the private system could not protect depositors. Such expectations might be heightened if the FDIC formally reinsured the private program. An explicit or implicit federal backstop could generate moral-hazard problems comparable to those existing in the present system and therefore defeat the purpose of privatizing deposit insurance.[60]

Privatizing the Risk-Monitoring Function

Less-drastic approaches would be to privatize the risk-monitoring function of bank supervisory agencies or (perhaps more realistically) to increase substantially reliance on market indicators of bank risk as compared with supervisory assessments. Currently regulators do, of course, track bond and stock prices, rating agency downgrades and upgrades, and other market information pertaining to large, publicly traded banking organizations. An extension of current practice would be to formally incorporate market indicators in the failure-prediction and CAMELS-rating-deterioration models currently used by regulatory agencies in off-site monitoring activities.

[58] The government might intervene, as it has in other insurance markets, to require that coverage be extended to banks and risks that private insurers would prefer to exclude. Depending on how extensive this intervention might be, the perceived advantages of private deposit insurance might be obviated.

[59] Ely (1998) and H.R. 4318: The Deposit Insurance Reform, Regulatory Modernization, and Taxpayer Protection Act of 1996. In this proposal, bank deposits and certain other debt obligations would be protected by cross-guarantee contracts negotiated with direct guarantors whose obligations would, in turn, be guaranteed by other guarantors. Thus the entire guarantee system would, in principle, stand behind every guaranteed deposit. In addition, FDIC insurance would remain in place, at least initially, as a backstop.

[60] One study of property/casualty insurance companies that are implicitly backed by state governments (through quasi-governmental guaranty funds) observed behavior on the part of the companies that was consistent with the moral-hazard principle (Bohn and Hall [1999]).

Reform proposals, however, would rely more fundamentally on market signals. As noted above, they would use market indicators to help set deposit insurance premiums, trigger supervisory intervention, or force market-driven changes in bank risk taking. In general, they would induce some group of relatively sophisticated investors (in addition to stockholders) to assume a portion of a bank's or the insurer's risk; the prices or investment returns required by these investors would indicate their risk assessments. In one alternative, the FDIC would be required to obtain reinsurance from private firms for a portion of the losses it incurred as a result of the failure of a bank or thrift. In another, large banks would be required to obtain private insurance for a portion of their deposits. In a third, insured institutions would be required to issue subordinated debt. Finally, the FDIC would be required to issue capital notes to the public.

Unquestionably, markets can be helpful in supplementing supervisory risk assessments of large banks.[61] In the case of Continental Illinois and the Bank of New England in the 1980s, for example, adverse market reactions triggered supervisory action that many believe should have been taken earlier. Furthermore, many institutions appear to be already subject to some degree of market discipline through equity and debt markets. Presumably this is true of publicly traded banking organizations, which represent only a fraction of the number of banks but a predominant share of total bank assets.[62] Moreover, many large banks rely heavily on uninsured funding. For the 25 largest commercial banks, insured deposits represented only 30 percent of total liabilities at the end of 1998. For the top decile in terms of asset size (874 commercial banks), the corresponding percentage was 52 percent; for the bottom nine deciles, it ranged from approximately 75 percent to nearly 90 percent. As noted below, most of the largest banks have outstanding subordinated notes and debentures that were issued mainly by parent holding companies.

Although market discipline is a valuable supplement to supervisory monitoring, the two are not necessarily interchangeable, even in the case of large, publicly traded banks. Some studies suggest that the bank examination process uncovers relevant information on the current condition of large banks that is not reflected in contemporaneous market information.[63] Moreover, as noted above, on-site examinations are needed to ensure the accuracy of the financial data banks release to the public. For small banks, of course, because they do not rely heavily on uninsured funding and generally do not have widely traded stock, there is often no effective market alternative to supervisory examinations in providing an independent risk assessment.

Private Reinsurance

In keeping with a provision of FDICIA, the FDIC explored the feasibility of establishing a private reinsurance system for deposit insurance. According to the proposal studied, the FDIC would obtain private reinsurance covering up to 10 percent of any loss it might incur in the event a bank failed. The bank's deposit insurance premium would be based wholly or partly on the cost of reinsurance and would reflect a market assessment of the risk posed by the bank. In principle private reinsurance has certain advantages from the standpoint of market discipline because the reinsurers, like the FDIC, would not benefit from the upside potential of risky situations. Moreover, unlike mandatory sub-debt, private reinsurance could arguably be required of banks of all sizes. The study found, however, that potential reinsurers had only limited interest in engaging in reinsurance contracts on terms acceptable to the FDIC.[64]

One reason for the limited interest might have been conflicts between the goals of federal deposit insurance and the goals of private reinsurers (the latter are discussed above in connection with proposals for private deposit insurance). For example, private reinsurers may prefer to limit their risk (and accept lower prices) by reinsuring only the soundest banks. If private reinsurers were permitted to "cherry pick" deposit insurance risks, reinsurance prices would not accurately reflect the risk that many insured institutions pose to the FDIC. On the other hand, the prices demanded by private reinsurers would reflect regulatory risk because the magnitude of their losses could be affected by the FDIC's actions in regulating bank activities, resolving failed institutions, and liquidating their assets.

[61] Flannery (1998) reviews the evidence on the relative efficacy of market signals and government supervision.

[62] Publicly traded banking organizations represented an estimated 20 percent of the total number of banks and approximately 90 percent of total bank assets at the end of 1998. These estimates are based on information furnished by the Office of the Comptroller of the Currency, the Federal Reserve Board, and SNL Securities; they refer to banks, and banks owned by holding companies, whose equity was traded on the New York Stock Exchange, American Stock Exchange, or NASDAQ as of December 31, 1998.

[63] Berger *et al.* (1998); De Young *et al* (1998); Simons and Cross (1991).

[64] FDIC (1993b).

So for this reason as well, reinsurance prices might not accurately reflect risks to the FDIC. Nor is it obvious how the FDIC might use reinsurance prices in setting deposit insurance assessments and in conducting other supervisory processes; further exploration would be needed.

Proposals to require large banks to buy private insurance for a portion of their deposits raise broadly similar issues. Risk aversion on the part of private insurers might lead them to deny insurance or to charge prohibitive premiums to banks whose activities posed above-average risk or required expensive monitoring activities. Although providing insurance for only the best risks, at relatively low premiums to the banks and low monitoring expenses to the insurer, might be an effective use of private insurance capital, it would be of limited value in supervisory processes.

Mandatory Subordinated Debt

Of the various alternatives for private bank monitoring, proposals to require the issuance of subordinated debt have received the most attention. In 1984 William Isaac, then-Chairman of the FDIC, proposed that banks be required to have subordinated debentures up to 3 percent of assets, on top of 6 percent in equity. Since then, the proposal for mandatory subordinated debt has been periodically revived in order to promote private-sector monitoring of bank risk, to increase bank capital, and to provide greater protection for the insurance fund. From a regulatory standpoint, sub-debt has a number of advantages. Unlike short-term creditors, investors in long-term sub-debt must rely on their assessment of the institution's condition and prospects rather than on their ability to shift funds quickly in the event of trouble.[65] Unlike equity investors, moreover, holders of subordinated debt cannot expect to profit significantly from increases in value and are likely to view bank risk somewhat as regulators and deposit insurers view it. From the standpoint of banks, sub-debt is a relatively cheap form of regulatory capital, especially given the deductibility of interest for income tax purposes.

Sub-debt might assist bank risk monitoring in a number of ways. Movements in prices of outstanding sub-debt, and in differentials among individual banks, would presumably reflect changing market perceptions of the condition of the issuing banks collectively, as well as the relative risk of individual institutions. Furthermore, banks might be required not only to have outstanding sub-debt but also to issue new debt periodically, perhaps in keeping with a staggered-maturity requirement. In that case, banks would be subject to periodic evaluation by new-issue investors as well as by traders. Sub-debt issued by a bank holding company would serve the purpose if the company's principal asset were a bank. In the case of companies with major nonbank subsidiaries, banks might be required to issue the sub-debt directly to the public.

The principal disadvantage of this proposal is that small banks do not have practical access to the market for sub-debt: securities issuance involves high fixed costs, and interest in small-bank issues on the part of investors and analysts would be limited. Most large banking organizations, in contrast, have issued sub-debt voluntarily, presumably because doing so was profitable. At the end of 1998, 23 of the 25 largest commercial banks had subordinated notes and debentures outstanding, ranging up to 3.7 percent of total assets for individual institutions and averaging 2.0 percent of total assets. For the 9,672 individual banks and thrifts with less than $500 million in assets, the corresponding percentage was .01 percent of total assets. In the case of small institutions, market prices would not necessarily reflect the condition and prospects of the issuer but, rather, the thinness of the market for small-bank issues. Under these circumstances, mandatory sub-debt issues would be an effective monitoring device only for large banks; these banks, however, do represent a major share of total bank assets in the country.[66]

Some proponents of mandatory sub-debt—and of increased reliance on market discipline generally—recognize that such measures would be feasible mainly for large, publicly held banking organizations that make heavy use of unsecured, uninsured financing. They propose a two-tier regulatory system. Large, publicly traded banks would be subject to a combination of increased reliance on market discipline and supervisory monitoring, whereas small, closely held banks that generally rely on insured deposit funding would be

[65] Most proposals for mandatory subordinated debt envision intermediate-term securities. Current regulations require that subordinated debt have an original average maturity of at least five years to qualify as part of Tier 2 capital. However, one proposal would require large banks to issue puttable subordinated debt. The put feature would require redemption at par after 90 days. If the institution could not redeem the put debt in 90 days while continuing to meet regulatory capital standards, it would be deemed insolvent (Wall [1989], 2–17).

[66] In 1995, banking firms with traded debentures outstanding represented 1 percent of all U.S. banking firms but more than one-half of total bank assets (Flannery [1998], 283).

subject only to supervisory monitoring. (Differential treatment for small and large banks might also be applied to capital requirements, closure rules, and other regulatory provisions.) To date there has been little discussion of the competitive and political issues that might arise if large and small banks were subject to different supervisory provisions, or of technical issues, such as how to distinguish objectively between the two groups of banks.

FDIC Capital Notes

Another proposed way to encourage prompt and effective supervisory action is to require the FDIC to periodically issue capital notes to the public. Interest on the notes would be terminated if the insurance fund dropped to zero and taxpayer funds had to be appropriated by Congress to meet insurance losses.[67] Furthermore, part of the pension funds provided for FDIC directors would be invested in FDIC capital notes while they were in office, to reinforce incentives to avoid policies that might weaken the insurance fund.

The purpose of the proposal is to enlist private-sector assistance in monitoring the condition of the insurance fund and to make sure that the FDIC will avoid taxpayer funding. However, little in the history of the FDIC suggests insufficient concern on this score. Considering the fate of the Federal Savings and Loan Insurance Corporation and the intensity of congressional oversight of the taxpayer-funded Resolution Trust Corporation, bureaucratic self-interest (if nothing else) should ensure the FDIC's strong commitment to minimizing the danger that taxpayer funding would be needed.

If the FDIC were to be subject to market discipline, as this proposal contemplates, then the FDIC should have the powers appropriate to its new status. Such powers would presumably include greater freedom to increase the size of the insurance fund to levels dictated by the market for its capital notes. (Currently the fund is constrained by a statutory reserve target of 1.25 percent of insured deposits.) It would also be appropriate to give the FDIC increased supervisory authority over national and state member banks so that it could better control its risk exposure and could avoid principal/agent problems with other federal regulators.[68]

Proposals to Restrict the Range of Banking Activity Financed by Insured Deposits

Proposals to restrict the range of banking activity financed by insured deposits would address the moral-hazard and principal/agent problems quite differently from the reform proposals already discussed. The narrow-bank proposal would essentially prevent the use of insured deposits to fund investments with more than minimal risk. The traditional-bank proposal would confine the use of insured deposits to the banks' liquidity transformation function; insured deposits would be used primarily for funding illiquid loans, but generally not for funding investments or products traded in established markets.

Narrow Banks

The narrow-bank proposal calls for a drastic reduction in, if not outright elimination of, deposit insurance.[69] If deposit insurance were retained at all, it would be restricted to deposits held in banks that invest solely in liquid, risk-free assets and operate like money-market funds. And if runs on narrow banks occurred at all, the bank would be able to meet them by liquidating a portion of its assets without delay, significant cost, or disruptive effects on capital markets. Deposit insurance would be needed only for failures caused by fraud or external disasters; premiums would be low; and the risk that taxpayer funds would ever be required would be very small. Assuming that asset restrictions were strictly enforced, moral hazard would be

[67] Interest on these notes would be suspended if the FDIC were to borrow from the Treasury to obtain sufficient liquidity. The purpose of this provision is "to make sure that solvency problems are not hidden by the FDIC under the pretense that the only issue is the liquidity of the fund" (Wall [1997], 21).

[68] Wall (1997) states that the FDIC could seek permission from Congress to increase the insurance fund and that the FDIC should be able, at its own discretion, to examine banks supervised by the Federal Reserve Board or the Comptroller of the Currency. However, if Congress did not heed the agency's petition to increase the fund, the FDIC's ability to maintain a strong market for its capital note obligations might be undermined. Furthermore, other federal banking agencies have sometimes resisted the FDIC's efforts to exercise its currently existing back-up examination authority.

[69] The narrow-bank proposal has a long history and numerous precursors, which Wallace (1996) traces back to Adam Smith's 1789 *Wealth of Nations*. Recent examples of narrow-bank proposals are Litan (1987), Bryan (1991), and Pierce (1991).

largely eliminated. Lending to businesses and consumers would be conducted by uninsured, nondeposit institutions, perhaps holding-company affiliates of narrow banks, which would fund their lending activity through various uninsured debt and equity instruments and would be subject to market discipline like any other nonbank borrower.

There have been numerous examples of narrow banks in the United States and other countries: postal savings systems, government savings banks, and national banks in their operations as issuers of notes backed by U.S. government securities early in their history. These institutions operated alongside other banks that provided credit to the private sector funded by equity and deposits—in some cases, by insured deposits. In the context of deposit insurance reform, however, the narrow-bank proposal would apply to all presently insured banks and is designed to reduce the scope of deposit insurance or eliminate it altogether. In effect, the narrow-bank proposal would eliminate one of the main features that is believed to make banks special and that justifies the existence of a federal safety net—the use of liquid deposits to finance relatively illiquid loans.

Like many other deposit insurance reform proposals, the narrow-bank concept involves a trade-off between benefits and costs. Adoption of the narrow-bank concept would largely eliminate the risk of bank runs and the consequent need for deposit insurance, but at the cost of potentially reducing the supply of credit to borrowers who lack direct, cost-effective access to the capital markets. Many savers who seek safe and liquid accounts would gravitate to the narrow banks, where their savings would be channeled solely into liquid government and high-quality corporate obligations. Credit flowing to other borrowers would be funded by higher-cost equity and uninsured borrowings of nondeposit lending institutions. In contrast, the present system potentially results in more and/or cheaper credit for borrowers who lack direct access to capital markets, but at the risk of socially harmful bank runs and at the cost of maintaining a deposit insurance system to prevent such runs. This is the trade-off that the United States and most other countries have chosen.[70]

A narrow banking system would also present some regulatory concerns, because of the profitability of deposit-funded lending. Owners of narrow banks might seek to circumvent (or, by exerting political pressure, to obtain relief from) asset restrictions in order to earn higher profits from lending low-cost insured deposits to private-sector borrowers than they could earn on liquid investments.

Traditional Banks

A less-drastic alternative would be to restrict deposit insurance to banks engaged primarily in liquidity transformation—intermediating between liquid deposits and illiquid loans.[71] Except when synergies exist with traditional intermediation, other activities would be carried on in affiliates or subsidiaries not funded by insured deposits. Financial transactions between the bank and these nondeposit entities would be at "arm's length" and enforced by "firewalls" so that the benefits of the federal safety net would not be extended beyond the traditional function of bank intermediation.

Implementing this approach would require distinguishing on some rational economic basis between so-called traditional and nontraditional banking activities. In addition, bankers might resist the change because reorganizing existing activities into insured and uninsured entities would be costly and because they would prefer to finance a variety of investments with low-cost insured deposits. If the traditional-bank approach were successfully implemented, however, it would limit the scope of deposit insurance and the federal safety net. It would reduce the risk of losses to the insurance fund from nontraditional activities, prevent unfair competition between banks and nonbank organizations, inhibit the spread of bank-type regulation to nonbank companies, and lessen moral-hazard and TBTF problems in nontraditional activities. In traditional lending activities financed by insured deposits, moral-hazard problems would remain.

[70] Two past or present exceptions are Argentina (which abolished deposit insurance in 1991, only to reinstate it in 1995) and New Zealand (which has no explicit or implicit deposit insurance system) (World Bank [1996]). Certain other countries do not have explicit systems but may introduce some form of protection in the event of a crisis.

[71] FDIC (1992); Carns (1995); Hoenig (1996).

PART 3. CONCLUDING REMARKS

As has often been stated, here and elsewhere, deposit insurance involves a trade-off between certain public-policy objectives (such as promoting financial-market stability and protecting savers) and various risks and costs. Deposit insurance creates incentives for insured banks to take increased risks, and it gener-

ates substantial costs for monitoring and restraining bank risk. To the extent that mechanisms for restraining bank risk are ineffective, low-cost funds will flow to high-risk ventures, and the result will be a misallocation of resources, bank failures, and increased insurance costs for banks that operate safely. In extreme cases, the cost of insurance losses may fall on taxpayers.

Proposals for reforming deposit insurance are generally based on the view that the present balance between the terms of the trade-off is inappropriate. These proposals put greater weight on the side of restraining bank risk, and their proponents generally attach less importance to the public-policy objectives of deposit insurance than do defenders of the present system. For example, proponents of increased market discipline (to be achieved by market value accounting, increased depositor risk exposure, or other means) appear willing to accept greater volatility in financial markets, considering it a necessary price to pay for ensuring prompt action by bankers and regulators to correct weaknesses in individual institutions. Similarly, proponents of increased burdens on bank stockholders (to be achieved, for example, with sharply increased capital requirements or a return to double liability of stockholders) appear willing to accept a smaller, less-competitive banking sector and a potential reduction in the availability of credit to borrowers who are dependent on banks, as a necessary price for restraining risk. And proposals for privatizing deposit insurance generally all but ignore the possibility that coverage might be denied to particular classes of banks or types of risk, and generally disregard the public-policy implications of such action. In general, many reform proposals ignore or discount the prospect that reducing bank risk may effectively increase costs and/or risk to borrowers, creditors, or other sectors of the economy.

Besides differing on how to balance conflicting objectives, opposing sides on specific reform proposals (or on reform generally) also differ on certain critical issues: the cost of monitoring bank risk; the relative efficacy of risk monitoring and restraint by creditors, investors, and government supervisory authorities; and the economic significance of bank intermediation. Thus, proposals for increased discipline by depositors and nondeposit creditors appear to assume that the cost of effectively monitoring banks is low relative to the cost (or foregone income) of shifting to investments that are less risky and need less monitoring.

With respect to the relative effectiveness of different agents for identifying or restraining bank risk, differences in judgment appear to be based on factual, historical, and ideological considerations. Factually, until recently few efforts had been made to compare rigorously the relative predictive powers of market signals and supervisory assessments of the condition of banks. Historically, regulatory lapses during the bank and thrift crises of the 1980s and skepticism that enough has changed since then have provided part of the rationale for proposals to shift to the private sector responsibilities now borne by government supervisors. For some proponents of reform, the S&L debacle was not an aberration but a true reflection of the fundamental deficiencies of depository institution regulation. Ideologically, faith in free markets and suspicion of any government intervention have also been a factor in judgments about which agents are more effective or less in restraining bank risk. For many proponents of reform, market discipline is the preferred tool for restraining risk, followed by statutory rules that largely eliminate the discretionary authority of regulators. This preference for rules over discretion reflects a distrust of regulatory action and leads to the conclusion that FDICIA did not go far enough in restricting regulatory discretion.

With respect to bank intermediation, proponents of narrow banks tend to downplay the importance of the liquidity-transformation function (which some people regard as fundamental to banking), while advocates of market value accounting generally dismiss the significance of inherently nonmarketable loan portfolios, viewing their existence as a readily surmountable obstacle. In short, one's view of many reform proposals depends on one's view of the nature and economic significance of bank intermediation. If the appropriate model is that of banks as lenders to idiosyncratic borrowers, then bank runs (rational or irrational) can have serious economic consequences because they may result in the dumping of essentially nonmarketable assets or an interruption of credit flows to borrowers who lack practical alternatives. In this model, market discipline will have limited effectiveness because market participants will lack relevant information on borrower characteristics. But if the more appropriate model, at least for a major segment of the banking industry, is that of banks as holders/traders of marketable or securitizable instruments, it would be logical to reach quite different conclusions on reform proposals.

In assessing reform proposals, one should always remember that no regulatory regime, existing or proposed, is or will be perfect; all are likely to have occasional unforeseen and unintended consequences, and all are likely to fall short of their objectives at times. Proponents of reform sometimes draw a comparison between the present system, with all its shortcomings in practice, and an idealized proposed system that works perfectly on paper. Proponents of greater market discipline, while emphasizing major errors of judgment by regulators, ignore the fact that markets, too, make mistakes; and more important, they ignore the fact that both market participants and regulators operate with limited information and their own particular biases, and that they pursue sometimes divergent objectives. So the essential but difficult task is to compare the actual operations of the existing regime with the likely behavior of a proposed substitute.

Some of the deposit insurance questions raised in recent years may be settled by research on factual matters or by extensive debate. Many other questions will probably not be settled by these means, because they reflect the various participants' divergent "world views" of the efficacy of markets and government intervention. These questions may remain unresolved unless another round of serious bank and thrift problems subjects the existing deposit insurance and bank regulatory systems to a new and challenging test.

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Conduits: Their Structure and Risk

by Peter J. Elmer*

One of the most important financial developments of the past two decades has been the growth of asset securitization. This growth has effectively created a new dimension of banking, simultaneously allowing banks to liquefy or sell financial assets more easily and opening new investment opportunities.

Two trends have combined to create these opportunities for banks. One is the spread of securitization to virtually all types of loans, leases, and financial contracts; the other is the increase in banks' securities brokerage, dealer, and other capital markets activities. Thus, banks now have new business opportunities involving the origination of loans for the purpose of packaging and selling them as securities, at the same time that the infrastructure to engage in these activities is more readily available. Securitization has not only changed investment and asset sale options but also created new types of businesses specializing in the acquisition of loans for the purpose of packaging them as securities.

Entities that focus on generating a profit by buying or originating loans at one price, then selling them through securitization at a higher price, have come to be called conduits (see sidebar). In this regard, their function is sometimes thought of as a type of arbitrage. However, the substantial time, resources, and risk required to execute the strategy suggest that conduits are more appropriately viewed as performing a business function than an arbitrage. Indeed, the host of problems encountered by conduits over the past two years suggests that their structure is relatively risky and difficult to manage.

The First Conduit

Rumor has it that the first conduit was conceived on a napkin over dinner by three major players in the mortgage markets of the early 1980s: Lew Ranieri of Salomon Brothers, David Beal of Banco Mortgage Company, and Bill Lacy of the Mortgage Guarantee Insurance Corporation (MGIC). The idea seemed simple: a firm could carve a niche for itself by buying loans from originators, then pooling and selling the loans as securities. The firm could have minimal assets as long as it maintained access to funding and could quickly bring together the many players needed to underwrite the loans, guarantee loan quality, then pool the loans and sell the pools as securities. Several government agencies, such as the Federal Home Loan Mortgage Corporation (Freddie Mac) and the Federal National Mortgage Association (Fannie Mae), had already proved that this could be done, so why not try it from a private base?

Given the growing importance of Freddie Mac and Fannie Mae, the first conduit initially focused on buying and securitizing single-family mortgages with loan balances above the purchasing authority of these two agencies—in other words, "jumbo" mortgages. This conduit was aptly named Residential Funding Corporation (RFC) because it targeted residential mortgages as its primary product line. It was formed in 1982 as a subsidiary of Banco Mortgage Company, an

* Peter J. Elmer is a senior financial economist in the FDIC's Division of Research and Statistics. The author would like to thank Mark Iverson of GMAC–RFC for valuable assistance.

When Is a Conduit Not a Conduit?

Analysts new to securitization often encounter a confusing set of terms. This is especially true for "conduit."

In most cases, "conduit" refers to a financial organization or entity whose business purpose is to buy loans or other financial assets from correspondents, with the goal of earning a profit by repackaging and selling the assets as securities. That is, a conduit is a type of business that specializes in securitizing loans and other types of financial assets.

A "pure" conduit minimizes its involvement in complementary activities. For example, this type of structure can be found in the early development of RFC or, more recently, in Wall Street brokers and dealers. Conduits that expand by adding servicing or other functions to their core activities, such as GMAC–RFC during the 1990s, can be difficult to classify accurately, although in practice they may be referred to as conduits.

Unfortunately, the term conduit has also been used to describe other entities. For example, it has been used to describe bankruptcy-remote companies formed for the special purpose of issuing securities that are effectively collateralized by loans or other assets held by the companies, such as asset-backed commercial paper. These conduits act more like trusts or financial vehicles for issuing securities than independent organizations seeking a profit.

The 1986 Tax Reform Act added to the confusion by giving the name Real Estate Mortgage Investment Conduit (REMIC) to another type of vehicle for structuring securities. Unfortunately, while "conduit" appears in the REMIC acronym, the term REMIC has since been used to describe not only legal structures that elect to be REMICs but also the securities these structures issue. These legal structures are generally not taxed, and when their mortgage or MBS collateral is paid off, their life is over. Thus, REMICs are best thought of as a special class of securities rather than as ongoing business enterprises. That is, a REMIC is a conduit in name only, and should not be confused with conduits formed as business enterprises focused on buying and securitizing loans.

affiliate of Northwestern National Bank, the predecessor of Norwest Bank.[1]

RFC soon learned that buying and securitizing loans required many activities. As illustrated in figure 1, loan purchase programs must be set up with any of a variety of originators, such as banks, thrifts, and mortgage bankers, and a securities sales function must be established with securities brokers and dealers. However, even with the origination, servicing, and security-sale functions performed by others, a host of activities remain the responsibility of the conduit. For example, underwriting guidelines must be established, quality-control procedures implemented, funding secured, and interest-rate risk managed while the loans are held in portfolio. Long after the securities are sold, a variety of commitments may remain relating to representations (reps) and warranties, investor relations, and the maintenance of residual interests retained in the security.[2]

RFC began as a relatively simple, or "pure," conduit by purchasing jumbo mortgages from established originators, especially mortgage bankers. The existence of Freddie Mac and Fannie Mae proved useful because their loan underwriting and seller/servicer approval requirements were widely recognized standards that could be easily referenced in prospectuses and other documents. Moreover, originators approved to do business with Freddie Mac and Fannie Mae were typically familiar with selling loans to the secondary market, servicing securitized loans, and performing related functions.

In its formative years, RFC developed the primary relationships required of a pure conduit. Since it was initially affiliated with a mortgage company and a commercial bank, it had access to established origination, servicing, and funding relationships as well as to expertise in selling loans in the secondary market. RFC purchased mortgage insurance from mortgage insurers to cover default risk in the mortgage pools created.

[1] Banco and Northwestern changed their names to Norwest in 1983. As is often true of new firms, aspects of RFC existed in one form or another before 1982. For example, Brendsel (1985) points out that private firms began issuing mortgage-backed securities in 1977, and the number of such firms had grown to approximately 50 by 1982. Wholesale mortgage bankers were also established buyers of previously originated loans, for the purpose of reselling them in the secondary markets. However, RFC's focus on the wholesale acquisition of mortgages with an eye toward packaging and selling them as securities was unique and inspired the term "conduit."

[2] For a discussion of reps and warranties, see Moreland-Gunn, Elmer, and Curry (1995).

Salomon Brothers provided not only the investment banking expertise needed to pull together rating agency, legal, and other components required for securitization but also the dealer expertise required to sell the securities and support trading.

As RFC grew, its strategic options expanded along with a need for internal support functions. Elements of risk management and quality control had to be set in place. A strategic decision was made to begin performing master-servicer services.[3] As more investors held RFC securities, investor-relations personnel were added. Growth of internal staff implied a need for more extensive accounting and personnel functions. Thus, even a relatively simple conduit with a narrow product focus can quickly become a sizable operation.

Recent Conduits and Their Structures

As an industry matures, its members often merge with closely related institutions in an effort to reduce costs or otherwise enhance efficiency. In this regard, the acquisition of RFC by General Motors Acceptance Corp. (GMAC–RFC) in 1990 was a harbinger of change reflecting the expansion of conduits into many of the functions shown in figure 1 (although expansion often occurred through affiliate relationships within the GMAC holding company "family").[4]

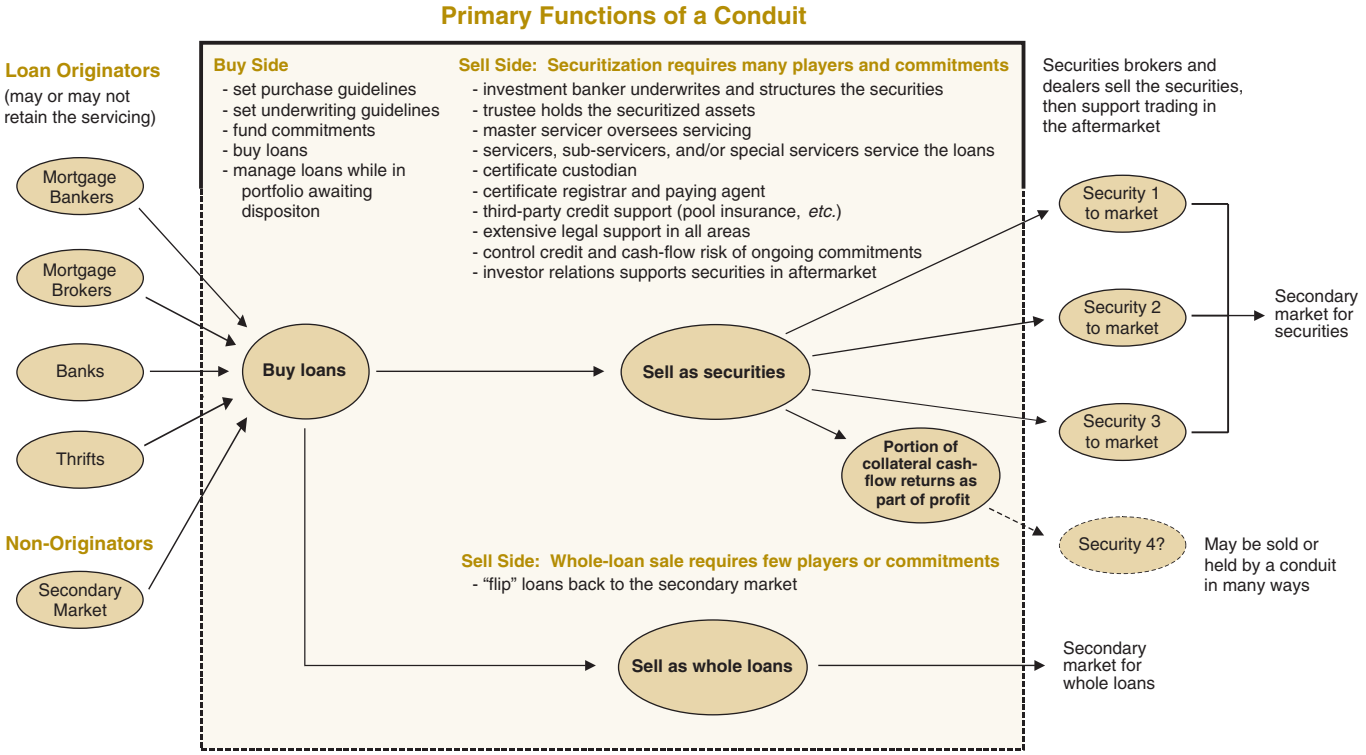
Conduit expansion can take many avenues. Since the lifeblood of a conduit is a steady supply of loans, the origination side of figure 1 offers one appealing avenue by allowing conduits to control and enhance the flow of incoming loans. Although some conduits have enhanced this flow by purchasing origination capabilities directly, GMAC–RFC expanded into a related function—warehouse lending.[5] To generate similar synergies, it started a construction finance division in 1992.

[3] As discussed by Fitch (1999b), master servicers are responsible for protecting the interests of security investors by overseeing primary servicers and otherwise ensuring that cash flows smoothly from servicing to trustees. Trustees ensure that the correct amounts are received from servicers; then they break the collected cash into the amounts promised investors, per the requirements of the security.

[4] For a more complete report on GMAC–RFC's current structure and operations, see Fitch (1999a).

[5] In 1991, GMAC–RFC purchased the Warehouse Lending Division of American Security Bank, thereby strengthening its ties to originators and the flow of incoming loans. Bear Stearns (1999) notes that conduits continue to place primary reliance on loans purchased either in bulk or on a flow basis. Even with loans ostensibly "originated" by conduits, substantial portions may be refinancings of loans that are serviced by the conduit or by an affiliated servicer.

Figure 1
Conduits and Securitization



A second cornerstone of loan activity representing a natural avenue for conduit expansion is servicing. Servicer affiliates enable conduits to expand their purchases to include acquisition of loans on either a servicing "released" or a servicing "retained" basis. That is, affiliating with a servicer allows a conduit to offer a premium for loans that are sold with their servicing, or pay a lower price and let the originator retain the servicing.[6] On the one hand, this flexibility appeals to sellers with little interest in servicing the loans after origination, such as loan brokers, while on the other hand it generates a flow of new servicing to servicer affiliates. Developing an extensive servicing network has other strategic advantages, such as providing opportunities to refinance loans and to cross-sell other products. These advantages have led GMAC–RFC to maintain a servicing operation that acquires "released" servicing for about two out of every three jumbo mortgages purchased.

Conduits can also expand by affiliating with securities-related firms. As shown in figure 1, conduits may sell some loans as whole loans while pooling and selling others as securities. For example, loans with exceptionally high quality may fetch a higher price if sold as whole loans, while loans with very poor quality, such as those with legal problems or unique characteristics, may be preempted from inclusion in a security. In this regard, conduit securitization activities constantly compete with whole-loan sales to achieve the highest possible value ("best" execution) for any package of loans. Indeed, the link between conduits and the capital markets is so close that Wall Street dealers often maintain their own conduits, which may be run in an independent fashion or alongside whole-loan or securities trading functions. This tie is illustrated by the central role of Salomon Brothers in RFC's formative years. More recently, GMAC–RFC counts two broker-dealer subsidiaries as affiliates in its holding company family.

Apart from expanding into complementary businesses, conduits throughout the 1990s expanded into complementary loan product lines. Given their start with jumbo mortgages, conduits were quick to begin other mortgage programs that lay outside the domain of Freddie Mac and Fannie Mae, such as home-equity loans and manufactured housing, as well as other types of consumer loans, such as credit cards and auto loans. From these roots in mortgage and consumer loans, conduits branched into all types of commercial loans and receivables.

Somewhat surprisingly, bank and thrift conduit activities have been relatively limited. Banks and thrifts, either on their own or through subsidiaries, have always been among the largest originators and servicers of all types of mortgage, consumer, and commercial loans; banks are also the primary source of trustee services; and a number of larger banks have developed sophisticated securities sales capabilities. Nevertheless, as figure 2 shows, the bank and thrift share of private-label mortgage-backed securities is only 15 percent, whereas private conduits at 24 percent represent the largest single class of issuers. Figure 3 shows a similar pattern for the issuance shares of "asset-backed" securities (securities backed by credit-card, auto, home-equity, and other consumer loans outside the area of first mortgages). Although several large credit-card banks boost the bank and thrift share of asset-backed securities issued to almost one-quarter (23 percent) of the market, this share falls far below the 44 percent share claimed by finance and nonbank credit-card companies. And even in the area of commercial loans (figure 4), banks and thrifts claim only 13 percent of the market. Thus, bank and thrift direct participation in conduit operations appears relatively modest, although banks and thrifts remain primary providers of origination, servicing, warehouse lending, and trustee services.

In summary, after beginning as streamlined businesses focused on buying and securitizing loans, conduits expanded in structure and became more complex, affiliated and integrated with a variety of complementary businesses. Pure conduits may still exist, but they are commonly not independent organizations; rather, they tend to be narrowly defined affiliates or groups residing in larger organizations.

Despite the wide range of activities that conduits may engage in, their most basic economic function is defined by two characteristics:

- they are engaged in the business of buying or accumulating financial assets for the purpose of packaging and selling them as securities, and
- they maintain close ties to the many players required in assembling and securitizing financial assets.

[6] The idea that servicing has value is confusing outside of the area of mortgage finance, because servicers incur significant expense in collecting and managing loan cash flows. However, standard servicing fees paid to servicers tend to exceed the cost of servicing loans by a considerable margin, and this differential implies that the "right" to service loans has value. Selling loans on a servicing-released basis allows an originator to collect at least a portion of the value associated with servicing at the time the loan is sold.

Figure 2
Mortgage-Backed Securities, 1998

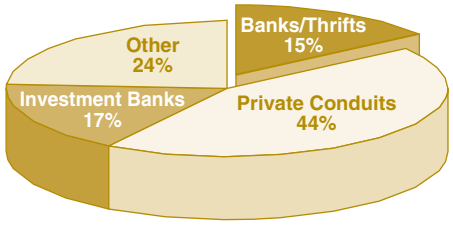


Figure 3
Asset-Backed Securities, 1998

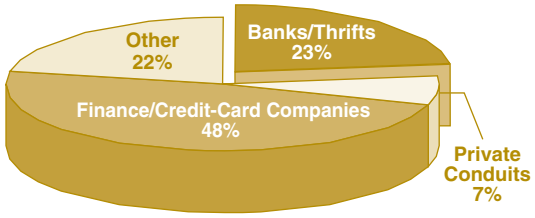
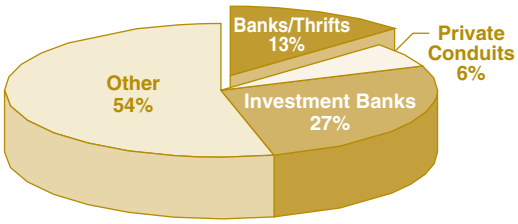


Figure 4
Commercial Loan-Backed Securities, 1998



Source: The Mortgage Market Statistical Annual for 1999.

These core activities generate two primary sources of income—the income that derives from holding performing loans in inventory and, especially, the income generated when loans are packaged and sold as securities.[7]

Conduit Economics (I): Inventory and the Value of Spread

The starting point of the value created by conduit activities is the accumulation of inventory in anticipation of packaging and sale as a security. The most common approach involves linking to a source of newly originated loans or receivables, then waiting for the flow of loans purchased to build an inventory sufficient to issue a security. The flow of loans can come either from internal originations or from a variety of external sources, such as networks of correspondent originators, a limited network of wholesalers, or Wall Street. Most commonly, conduits cultivate networks of originators in an effort to ensure a steady flow of product. Buying loans from Wall Street dealers is problematic because the dealer markets are very competitive and the flow of loans is erratic. Moreover, Wall Street dealers often use their own conduits to securitize blocks of whole loans purchased through the capital markets.

The level of loans in inventory traces a sawtooth pattern: inventory builds, then drops at each securitization or whole-loan sale. At any point the base inventory of loans may be substantial because not all loans may fit or work well in every securitization. The bulk of the loans are packaged in pools of at least $100 million to $200 million of relatively homogeneous loans. Unusual and heterogeneous loans are placed into securities with "miscellaneous" loans or are sold as whole loans.

The sawtooth pattern can vary considerably, depending on the types of loans accumulated and market lending trends. For example, in 1998 the GMAC–RFC pipeline of high-volume single-family "jumbo" mortgages produced an average of one new security every two weeks, whereas the same company's pipeline of low-volume home-equity loans produced an average of one new security only every three months. Generic loans that are easily acquired and securitized tend to offer less opportunity for profit than unusual loans that are difficult to acquire and securitize. At the end of quarterly or yearly accounting cycles, a special effort may be made to reduce inventory by either securitizing or selling the excess loans.

Loans in inventory give rise to one source of conduit income, which is the interest-rate spread, or "carry," from loans held in portfolio. This income varies directly with the length of time the loans are held. Since most loans held by conduits are newly originated, there

[7] The two sources of income discussed in this article are the primary—but not necessarily the only—sources of income arising from conduit activities. Conduits involved in other activities will generate other types of income. For example, conduits that directly originate loans earn income from origination fees, while those involved in warehouse lending, servicing, or other activities generate income from these endeavors. It is also possible for conduits to simplify their operations to the point that they earn income from only one source, for example, by not holding loans in portfolio before securitization.

is little likelihood of default during the several months they may be held in the conduit's inventory "pipeline" awaiting securitization. During this period of low credit risk, conduits earn the difference between the interest income received from loans held in portfolio and the interest expense paid to fund those loans, net of hedge costs.

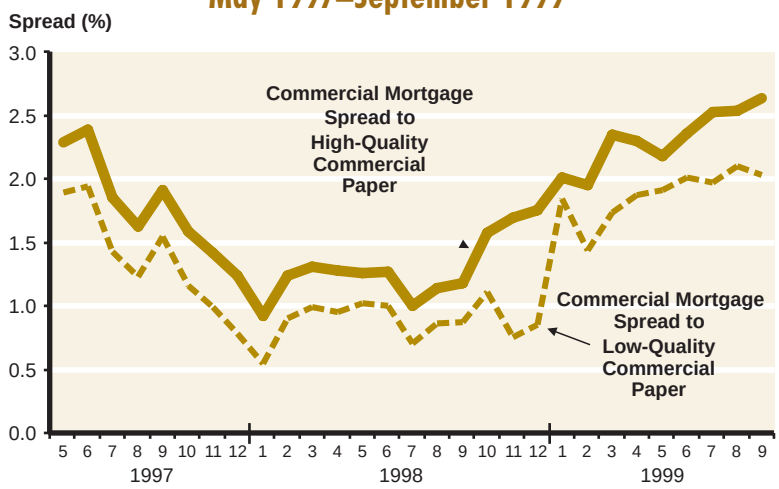
$$\text{Carry} = \text{Interest Inc.} - \text{Interest Exp.} - \text{Hedge Cost} \quad (1)$$

To further simplify, one can reasonably assume that the cost of hedging some types of risks, such as the risk of a general rise in interest rates, is relatively small, so these risks can be ignored for this analysis. Other risks that are difficult or expensive to hedge will be considered below in a discussion of conduit risks.

Figure 5 illustrates spreads earned during the 1997–1999 period by conduits carrying commercial mortgages. That is, the spreads reflect the difference between the interest income earned on long-term fixed-rate commercial mortgages and the interest expense paid on three-month commercial paper, net of 20 basis points for servicing, hedging, or administrative expenses. The two series reflect the different net yields earned by conduits with relatively high *versus* low commercial paper funding costs.

The spreads in figure 5 suggest that over the past two years, the carry earned by commercial mortgage conduits with relatively low funding costs fell in the 1.0–2.0 percent range, averaging approximately 1.50 percent. This translates to a value of approximately 50 basis points (0.50 percent) when the loan is carried for four months, or a value of one-eighth point (0.125 percent) if it is carried for only one month. The spreads were approximately 50 basis points lower for conduits that funded at the more expensive end of the commercial paper market. However, the 50 basis points of higher interest expense appear modest, given the fact that the total carry remained positive throughout the past two years and that the carry represents only one of two sources of conduit income. Moreover, funding expenses should not significantly limit competition, as hundreds of firms can fund within the high- and low-cost ends of the commercial paper market.

Figure 5
Spreads from "Carrying" Commercial Mortgages, May 1997–September 1999



Note: The spread between the commercial mortgage and commercial paper rates is calculated as the difference between the Levy commercial mortgage rate and either the high- or low-quality commercial paper rate, net of twenty basis points servicing fee. The Levy commercial mortgage rate is reported monthly by *Barron's*. Commercial paper rates are reported by Bloomberg Financial Markets. All yields are computed on a bond yield basis.

Conduit Economics (II): The Value of the Deal

The primary source of conduit income is the value of the "deals" created by packaging loans and selling them as securities. What often makes this value seem anomalous is that securitization represents simply a repackaging of cash flows. In fact, some securities, known as "pass-throughs," are structured to have almost no effect on the cash flows of the underlying loans. Nevertheless, the additional liquidity and other advantages of securitized pools enhance value to the point that the value of the securities and other assets created from a pool exceeds the value of the corresponding loans; if it does not, the pool will be either held in portfolio or sold as whole loans.

Securitization deals have two basic structures. The most commonly used structure grants security investors an interest in the *specific assets* placed in a securitization "trust," which is administered by the trustee. This structure is used for "closed-end" loans, such as mortgages or auto loans, because their maturates and payments are well defined. As the principal balance of the loans in the trust is paid down, so is the principal of the securities created by the trust. When the initial assets are paid off, the securities must also be paid off and the trust is dissolved. The second type of securitization structure grants investors an interest in a *pool of assets* without listing the specific assets

that will be in the pool throughout its life. This structure is designed to hold loans with loosely defined maturates and/or highly variable characteristics, such as credit cards. This structure permits a "revolving asset" arrangement whereby paid-off loans are replaced with new loans possessing similar characteristics. Generally speaking, the total balance of the loans is maintained even though the specific loans in the pool change. Since the payoff of the initial collateral bears no particular relation to the payoff of the securities, the principal balance of the corresponding securities remains relatively stable until the trust permits the payoff of principal.

Regardless of the differences between structures, the generation of value is relatively consistent. That is, in both structures the value created by securitization is the difference between the value of the securities ("classes," or "tranches") and other assets created by the deal, and the value of the loans or receivables placed in the deal, net of underwriting and sale-relate.

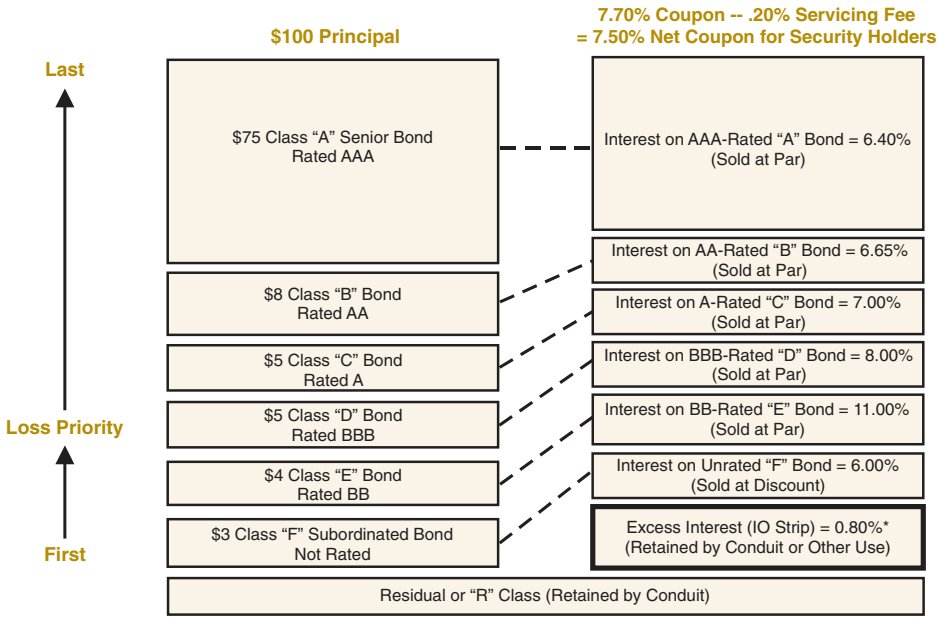
Value of Securitization = Value of Class A + Value of Class B + ...
+ Value of Excess Interest
+ Value of Excess Servicing
+ Value of the Residual (or Seller's Interest) Class
– Cost of Assets
– Underwriting/Sale Expenses (2)

It is common to create in one deal several or more classes of securities with different credit ratings, because doing so broadens the market for the securities and therefore enhances the total value of the package. Unfortunately, however, some cash flows in a deal cannot be incorporated into easily sold securities because of their higher risk. Therefore, the higher-risk cash flows are used to produce several other types of assets, such as excess interest, excess servicing, and residuals. A deal makes economic sense when the total value of the securities and other assets created exceeds a minimum threshold required to compensate a conduit for its various expenses, including equity.

Figure 6 depicts the creation of value that arises when the two primary components of a package of commercial-loan cash flows—principal and interest—are split.[8] The total principal balance of all loans

[8] Figure 6 represents a security created from a specific pool of commercial-loan assets. However, securities created for revolving loan products, such as credit cards, tend to produce many of the same unusual assets, such as excess interest and excess servicing. One asset unique to a revolving loan deal, the "seller's interest," is similar to the residual in a specific asset structure.

Figure 6
Sample Principal and Interest Distribution for Commercial Mortgage Senior/Subordinated Securitization



*Excess interest = net coupon (7.50%) less the combined interest expense of the bonds, ((0.75*6.40)+(0.08*6.65)+(0.05*7.00)+(0.05*8.00)+(0.04*11.00)+(0.03*6.0)).

in the pool is allocated to at least one class of bonds. Typically the principal is divided into one or more large pieces with AAA or AA credit ratings and the highest seniority in loss priority. Several intermediate or "mezzanine" classes may be created with ratings in the BBB-AAA range, followed by other classes with lower loss priority and lower credit ratings. For example, figure 6 shows a $75 AAA-rated senior security created by subordinating 25 percent of the principal among five mezzanine and other classes of securities with varying sizes and credit ratings. The residual, or "R," class claims bits and pieces of cash flows that are not claimed by any other class.

Subordinated bonds have lower ratings than senior bonds because they stand ready to absorb default-related losses before those losses can be applied to bonds with senior priority. The subordinated bonds are often sliced into several classes with varying credit ratings that depend on the level of subordination supporting each bond. Bonds in the BBB and higher "investment grade" rating range are normally easier to price and sell. The bond with the lowest priority has the highest risk of loss and, if rated, has the lowest credit rating. However, the highest-risk bonds may not be rated because they are either retained by a conduit affiliate or are privately placed to sophisticated investors. Since only a limited number of buyers purchase the highest-risk bonds, selling these components of the securitization can be the pivotal factor in consummating a deal.

The level of credit support or subordination varies with the risk of the underlying loan collateral. Securitizing loans with higher levels of default risk results in higher levels of subordination and therefore a smaller senior class of AAA-rated securities. Similarly, loans with lower default risk require lower levels of subordination, leaving a larger senior class. Thus, the risk of the underlying loans is directly related to the level of subordination required to secure the senior class.[9] In this regard, it is a mistake to interpret relatively high levels of subordination as suggesting a lower-risk security, as they actually indicate higher-risk loans in the underlying collateral.

Splitting the interest component of the cash flows is distinct from splitting the principal cash flows. Whereas all principal is allocated to the bonds, all interest may not be. In essence, the coupon rate on the loan collateral, net of servicing fees, tends to exceed the weighted average interest rate required by the market on the securities backed by the loans, and this generates "excess interest." Excess interest can be lumped into servicing contracts to generate excess servicing; it can be formally structured as an interest-only (IO) strip; it can be used to cover losses; or it can be allocated in a variety of ways to the residual. Portions of the excess interest may be held by a conduit, in which case accounting and valuation issues arise (see below).[10] Thus, excess interest is central to an understanding of the most problematic issues associated with securitization.

Figure 6 illustrates the creation of excess interest in a deal that allocates the excess to a separate claim retained by the conduit. In the example, the AAA-rated class pays a rate of only 6.40 percent, which represents an interest savings of 110 basis points *vis-à-vis* the 7.50 percent net coupon received from the loan collateral. The AA-rated class pays 6.65 percent for an interest savings of 85 basis points. Bond yields do not rise above the net loan coupon until the class "D" bond, rated BBB. This and other lower-rated bonds use up some, but not all, of the interest savings associated with the higher-rated bonds. The end result of receiving 7.50 percent net interest from the loan, then paying between 6 and 11 percent on the bonds, is an IO strip equaling 80 basis points (0.80 percent).

As we have said, excess interest may be formally structured as an IO strip, in which case the value of the IO strip represents most of the profit available to compensate conduits for their efforts. For example, in figure 6 the value of the 0.80 percent IO strip is approximately 3.10–4.50 points, which is much larger than the 0.12–0.50 points estimated above as the value of the pipeline "carry."

* * *

[9] Since the credit risk of other types of loans differs significantly from the risk of commercial mortgages, the subordination levels of securities backed by other types of loans may be very different from those shown in figure 6. For example, single-family mortgages have very low credit risk, to the point that only 5 percent subordination of principal may be required to create an AAA-rated senior class security. High-risk commercial mortgages may require 30 percent or more subordination to create an AAA-rated class.

[10] The IO strip adds significant complexity to a deal because it can be structured in many ways. For example, the IO strip may be formed into a separate security (as suggested by figure 6); used as first-loss credit support; included as a portion of the residual; or made a part of excess servicing. The easiest way to use the strip is simply to sell it and collect its value up front. However, since the strip often has very high risk, especially before the underlying pool has established a payment history, its market value tends to be relatively low when the security is created. Holding either all or a portion of the strip avoids a deep market discount while generating cash flow and assuring investors that the conduit retains an interest in the deal.

We can now estimate the value that securitization creates. To simplify matters, assume that (1) the carry is used to cover sale expenses, (2) the rated classes ("A" through "E") are sold at par, and (3) the class with no rating (class "F") is sold at 50 percent of its face value. Given these assumptions, the value created by the securitization shown in figure 6 falls in the range of 1.60–3.00 percent of the original balance of the securitized loans.[11] This estimate suggests that the profit margin accruing to the securitization of mortgage-related assets is surprisingly "thin."

The tendency to hold, in one form or another, significant portions of excess interest adds a layer of complexity to conduit operations. That is, conduits often become involved in the investment and management of unusual cash flows, residuals, and other remnants of the securitization process. During periods of stability these unusual arrangements can generate a rewarding flow of income that can be valued and accounted for in an acceptable fashion. During times of stress, however, cash flow, accounting, valuation, and other issues can quickly overwhelm conduits.

Elements of Risk

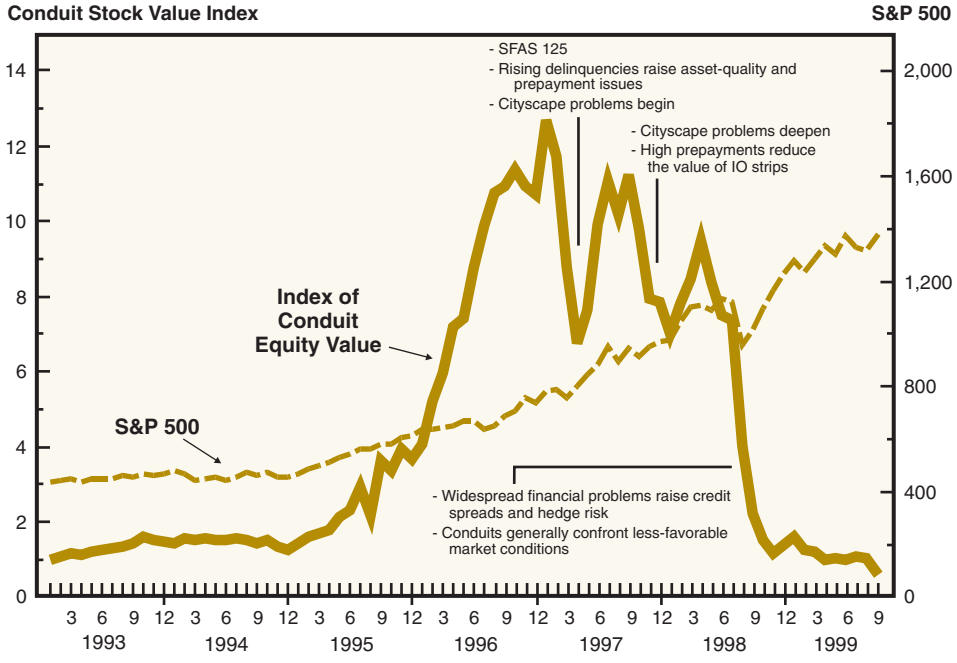
Conduits enjoyed remarkable success during much of the 1990s. As shown in figure 7, the value of publicly traded conduit equity increased much faster than the value of the stock market until early 1997. This conduit success was attributable to a robust economic environment, a relatively stable financial environment, and a broadening range of financial products securitized by conduits. During the mid-1990s, conduits quickly carved niches for themselves by learning to securitize new loan products, such as commercial mortgages, mobile home loans, and home-equity loans. As securitization brought new funds to well-established loan products, some conduits ventured into riskier types of loans, thereby setting the stage for additional securitizations, but at the cost of additional risk.

The stock index shown in figure 7 suggests that conduits began encountering problems in early 1997, followed by a nearly complete recovery. A second round of problems developed in the latter half of 1997, but this was followed by only a modest recovery. The industry has yet to recover from a third, disastrous drop in the second half of 1998. The problems encountered by conduits during the 1997–1998 period serve to illustrate nine elements of conduit risk.[12]

[11] This calculation values an 0.80 percent strip from a commercial mortgage with a 30-year amortization schedule, a balloon at the end of 15 years, a gross coupon of 7.70 percent, and a prepayment rate that begins at 0 and then rises to 5 percent at the 30th and following months. For this scenario, the strip value equals 4.49 and 3.07 points at discount rates of 10 and 20 percent, respectively. Subtracting 1.50 points for a 50 percent discount on class "F" results in an approximate range of 1.60–3.00 points.

[12] Comments about the risk-related problems of individual financial institutions were gathered from news articles reported on Bloomberg Financial Markets. The elements of risk presented here provide an overview of the topic, with special emphasis on problems observed in the 1997–1998 period. Thus, this list of risks is by no means comprehensive.

Figure 7
Value of Public Conduit Equity *versus* S&P 500, January 1993–September 1999



Note: The index of conduit equity, set with January 1993 = 1, is calculated by summing the value of public equity of 7 public conduits listed in the top 25 conduits by *The Mortgage Market Statistical Annual* for 1998: Firstplus Financial Group, Advanta Corp., Aames Financial Corporation, AMRESCO, Cityscape Financial Corporation, IMC Mortgage, and Southern Pacific. Two other public conduits in this listing, Greentree Financial Corp. and the Money Store, Inc., were omitted from the index because they were purchased by other institutions in 1998 before the decline in the stock market in July 1998.

Accounting Risk

At the start of 1997, conduits had to confront a fundamental change in their accounting practices because of a new accounting rule, Statement of Financial Accounting Standards No. 125 (SFAS 125). SFAS 125 requires that entities recognize, or "book," the value of financial and servicing assets and liabilities that remain under their control after a securitization. In particular, conduits are required to estimate and record as a gain-on-sale the value of excess servicing fees and related IO strips. IO strips are treated like marketable equity securities, so they must be carried at fair market value throughout their lives—a requirement that implies the possibility of adjusting entries in the event the value of the asset changes.

SFAS 125 affected conduit financial reporting in two ways. First, conduits began recognizing the value of IO strips as gains-on-sale.[13] The ramifications of this are noteworthy. Although this reporting necessarily improves the transparency of conduit financial statements with respect to the types of assets held, it significantly raises reported earnings and equity at the issuance date of each securitization. In addition, the reported gains reflect projections of uncertain cash flows. The fact that the cash flows are often irregular and may not begin until several years after a securitization is completed gives rise to financial management problems. Second, the need to recognize changes in IO strip values often results in profit adjustments that bear little relation to operating performance during the same period. Because benchmark market values are often not available on IO strips and other related assets, the only way to determine IO strip value is to perform present-value calculations. But these estimates are notoriously sensitive to a variety of underlying assumptions (ranging from loan payoff and default rates to the present-value discount rate), and considerable discretion exists in the setting of these assumptions. Thus, interpreting reported values is difficult. Even modest changes in the assumptions can produce significant adjustments to earnings and capital—adjustments that bear little relation to current operating cash flows.

Asset-Quality Risk

A spate of unexpected credit-card losses reported in early 1997 helped fuel the first downturn in conduit stock prices. Although portfolio lenders continued to more than cover their losses with the high interest rates received on loans, the asset-quality problems that had surfaced raised special issues for conduits.[14] The IO strips, residuals, and other remnants of a securitization are often exposed to much higher levels of credit risk than are found in traditional portfolio structures. Conduits that elect to hold subordinated and other remnants used as credit support probably carry much more credit risk in a given level of assets than does a traditional lender holding a comparable level of loans. Moreover, the value of other remnants that ostensibly have no credit risk can also be adversely affected by credit problems. For example, a rise in delinquencies can squeeze the excess interest generated by a pool, thereby reducing the value of IO strips that might otherwise have no credit risk. Per SFAS 125, a drop in excess interest can force a downward adjustment of IO asset values and of a firm's capital.

Servicing Risk

In the spring of 1997 asset-quality problems at Cityscape Financial Corp. (Cityscape) highlighted another dimension of risk. In April of that year Moody's downgraded Cityscape's bonds, citing asset-quality problems and the fear that Cityscape's servicing capabilities were not prepared to deal with higher levels of problem assets.[15] As noted earlier, there are sound business reasons for conduits to integrate servicing into their internal operations. Nevertheless, servicing is a distinct business function with its own risks and efficiencies. For example, significant economies of scale accrue to larger servicing operations, and the quality of the assets serviced plays an important role in the determination of servicing expenses. Delinquent and defaulted loans are much more expensive to service than performing loans, especially for smaller and inexperienced servicers in nontraditional loan products. High-cost servicing can directly reduce excess interest, and inefficient servicing can raise default rates. Conduits that service the loans backing the securities they issued risk higher expenses and, if delinquencies rise above the expected levels, these higher expenses will coincide with a drop in the value of IO strips and other assets.

[13] *See* Duff & Phelps (1997) and Baskin and Gregoire (1997) for more discussion of SFAS 125 and its effect on entities that securitize assets. Moody's Investors Service (1997) points out that gain-on-sale accounting can result in significantly higher earnings without materially changing the economics of the underlying risk.

[14] Credit-card losses at Advanta Corp. in March 1997 were responsible for a decline in Advanta's stock price and a bond downgrade by Fitch Investors Service.

[15] As reported by Bloomberg News, April 21, 1997.

Regulatory Risk

In mid-1997 Cityscape encountered a second round of problems, this time with a regulatory and political origin in the United Kingdom.[16] Several years earlier Cityscape had grown its operations in the United Kingdom through loans to individuals with high credit risk (sub-prime loans). In addition to requiring high interest rates, these loans also imposed high penalties for delinquency. As delinquencies rose so did the penalties, along with political pressure in the United Kingdom for consumer relief. Cityscape finally acquiesced by reducing its penalties, but these reductions cut into Cityscape's anticipated income. In the end, uncertainty enveloped earnings from loans originated in the United Kingdom, forcing write-downs of IO strips and similar assets per SFAS 125.

Cityscape's problems in the United Kingdom illustrate the influences that political and regulatory factors may have on the management and value of outstanding loans. Sovereign authorities always retain the ability to change or otherwise affect a variety of elements in the lending and loan-management environment, ranging from fair lending practices to bankruptcy laws. This intervention is especially likely in high-risk consumer lending, an activity embraced by many conduits in the 1990s but nevertheless a relatively new area and one where regulatory concerns were uncharted.

Originator (Rep and Warranty) Risk

Fraud by originators is an especially sensitive issue for conduits because their core business involves purchasing loans originated by other entities. Association with inappropriate origination procedures not only reflects badly on a conduit's ability to control the quality of the loans it has securitized but also raises questions about the quality of loans in any of its securities. Of course, conduits rely on the reps and warranties made by originators before they make similar reps and warranties on the loans they place in securities, so they have recourse to originators if problems are detected. However, this recourse has little value if the originator is small or otherwise unable to repurchase problem loans. Moreover, smaller conduits may have little capacity either to deal with legal problems related to bad loans or to manage the bad loans themselves. SFAS 125 may enter the picture as well by requiring write-downs to IO strip and similar asset values.

Prepayment Risk

Falling interest rates during the second half of 1997 raised concerns about prepayment risk. The decline in interest rates inevitably raised prepayment rates for many types of consumer loans and, accordingly, raised the possibility of adjusting IO strip, excess servicing, and other related asset values, per SFAS 125. However, prepayment risk was especially uncertain for home-equity, sub-prime, and other types of consumer loans that had been originated in volume, and through conduit channels, for only a few years. The prepayment characteristics of borrowers found through direct mail, borrowers with credit problems, and borrowers having no ongoing relation with the originating lender could simply not be known until a cycle of prepayments had run its course.[17] Complicating matters was the fact that after years of increasing competition for home-equity and high-risk borrowers, market interest rates for these types of consumer loans fell, thereby increasing the potential savings to these borrowers from refinancing. In the end, several types of consumer loans securitized by conduits responded to falling rates with substantial refinancing activity, and this activity generated write-downs of IO strip-related assets, per SFAS 125.[18]

Hedge Risk

Global financial stress and the stock market meltdown in mid-1998 marked the start of new problems for conduits. The financial problems of mid-1998 helped motivate a rise in the market cost of credit risk, causing spreads-to-Treasuries to rise, even as the general level of interest rates fell. This market anomaly exposed the true meaning of "hedge risk." For most changes in interest rates, standard hedging practices mitigate risk for a reasonable cost. However, when spreads-to-Treasuries widen, hedging activities often fail to mitigate interest-rate risk. In such cases, holding substantial amounts of loans can result in losses many times greater than the modest "carry" that carrying loans with lower-cost financing earns. For example, figure 8 shows commercial mortgage spreads increasing over 100 basis points (1.0 percent) in the fall of 1998, an increase that could easily cause hedge losses to exceed the full benefit expected from a securitization. This problem of hedge losses was encountered by conduits

[16] As reported by Bloomberg News, July 14, 1997.

[17] Higher prepayment speeds for loans originated by loan brokers and other third-party originators have only recently been formally documented (see Lacour-Little and Chung [1999]).

[18] Unexpected prepayments caused Aames Financial to write down sub-prime loans in September 1997, and Green Tree Financial to write down mobile-home loans in November 1997.

with many types of loans, including products such as commercial loans that had largely escaped the consumer finance trials of 1997.

Market Risk

Figure 8 also illustrates the less-favorable market conditions conduits confronted after the jump in spreads in October 1998. One can see this by comparing the spread between the two lines in figure 8 before October 1998 with the spread after that date. Before October 1998, commercial mortgage rates were very close to the rates on securities created from loans in the AAA to BBB range, but after that date the spreads between the rates were much wider. Wider spreads imply that conduits will probably find it harder to securitize loans profitably. They will have to earn a larger profit from each deal to compensate them for the higher risk that is effectively assessed by financial markets, especially after a period of substantial hedge-related losses. The immediate effect is that conduits need to make a higher profit on each securitization to justify continued activity. Moreover, higher spreads for investment-grade securities are often associated with much higher spreads for non-investment-grade securities, as well as greater difficulty finding buyers for the non- investment-grade classes of each deal. In short, conduits' close proximity to the financial markets makes them especially susceptible to financial ebbs and flows, even apart from the hedge risk associated with an isolated spike in spreads.

New-Product Risk

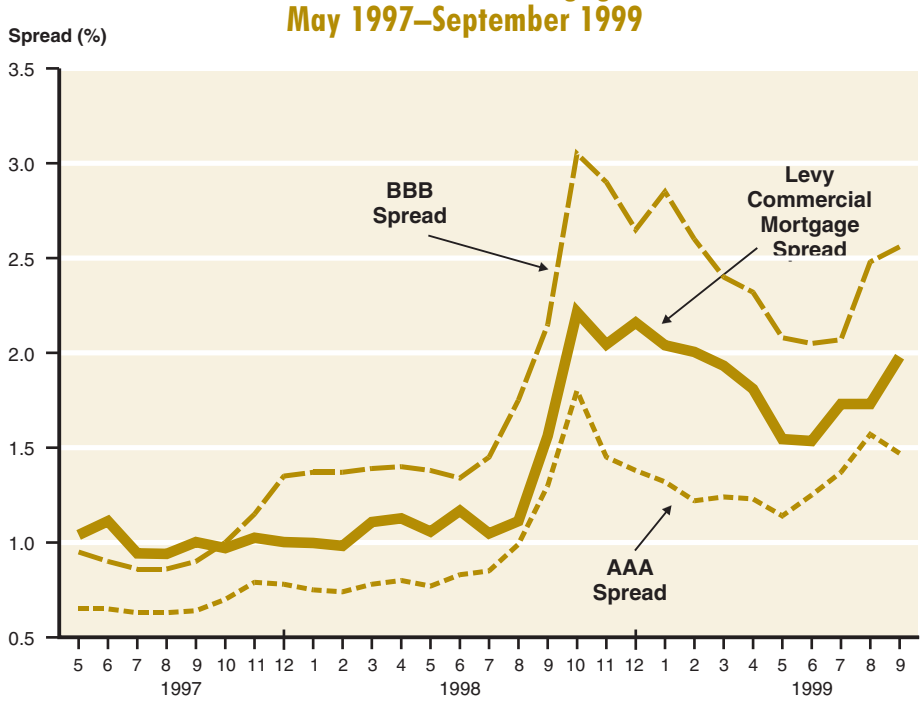
Once a conduit has drawn together the many players needed to securitize assets, it can often apply its experience easily to other loan products. As conduits matured in the 1990s, established firms gained control over origination networks, and profit margins for established and lower-risk loan products thinned. Accordingly, many conduits began to securitize higher-risk loan products that had never been originated on a nationwide scale, such as "B/C" quality loans and mortgages with loan-to-value ratios as high as 125 percent. Even if the credit risk of these new products is ignored, the refinancing and other payoff characteristics of these products remain largely unknown. Because a significant portion of the value of securitization can be traced to the value of the excess interest and because this value is heavily influenced by loan payoff patterns, an additional level of risk arises for conduits in new loan products with unknown payoff characteristics.

* * *

The experiences of 1997–1998 underscore many (not all) of the risks faced by conduits. These risks seem especially problematic for independent conduits because of the complex nature of the conduit business. Conduits that affiliate with larger institutions seem better suited to focus on the core "middleman" role they were initially intended to play. Affiliating with larger organizations also increases the possibility of synergies with affiliates, provides a steadier source of funding, and ensures a degree of insulation from the market during periods of stress. For these reasons it is not surprising that, as table 1 shows, large

Figure 8

Spreads-to-Treasury Rates for Commercial Mortgages *versus* AAA and BBB Commercial Mortgage Securities, May 1997–September 1999



Note: AAA and BBB spreads are calculated relative to ten-year Treasury rates by Morgan Stanley for conduit commercial mortgage securities, as reported by Bloomberg Financial Markets. The Levy commercial mortgage rate is spread to ten-year Treasury rates, net of twenty basis points servicing fee.

conduits affiliated with larger institutions have survived the stress of the past several years, whereas independent conduits have fared poorly.

Conclusions

In many respects, conduits have been remarkably successful. They now function as a small industry, operating in a variety of forms ranging from independent to affiliated entities. Conduits have grown throughout the 1990s, to the point that their operations account for a large proportion of the private-label securitization market. Conduits have also led the way in securitizing commercial loans as well as many other popular products that lie outside the domain of Freddie Mac and Fannie Mae, and they have done so without federal intervention.

For banks and thrifts conduits also offer new strategic options in the form of securitization, which represents an alternative to traditional forms of financing for the institutions' many types of loan products. The new technology also facilitates the ability of banks and thrifts to specialize in component activities, thereby enhancing their strategic flexibility. If credit risk and loan default become problems for institutions, securitization also offers innovative options for disposing of troubled assets.

Nevertheless, although conduits were very successful in the early and mid-1990s and the benefits of securitization were considerable, recent experience has illustrated many risks. In particular, the 1997–1998 period exposed risks ranging from regulatory and accounting problems to prepayment and market issues. During this period almost every independent conduit had severe problems, as evidenced by stock prices languishing at small fractions of the values that had been observed only one and two years earlier. This experience suggests that conduits are more successful when they are affiliated with larger entities engaged in related activities, such as securities-brokerage or banking-related enterprises. In these institutional contexts conduits appear sufficiently viable that they can be counted on to play a central role in securitization well into the next century.

Table 1
Transformation of Affiliated versus Independent Conduits, 1997–1999

Name	Rank in 1997	Rank in 1998	Status in 1999
Top 5 Affiliated Conduits in 1997			
GMAC–RFC	1	1	Continuing operations.
Norwest Asset Securities Corp.	2	2	Continuing operations.
GE Capital Mortgage Services	4	3	Continuing operations.
Salomon Brothers	8	10	Continuing operations.
Countrywide Mortgage Securities	9	5	Continuing operations.
Top 5 Independent Public Conduits in 1997			
ContiMortgage	3	8	Severe financial problems in 1998. Proposed buyout by GMAC in 1999 never consummated. Seventy percent decline in stock price in year before proposed merger.
IMC Mortgage	5	9	Severe financial problems in 1998 motivate agreement to merge with Greenwich Street Capital Partners. Stock price declined over 95 percent during year before merger.
The Money Store	6	14	Purchased by First Union 6/30/98 (before market fallout). Before merger, stock price was trading near the year's high.
Firstplus Financial	7	19	Severe problems; portions placed in Chapter 11 in 3/99. Stock price trading below $1 as of 5/99.
Advanta Corp.	11	13	1998 earnings dropped but remained positive. Revised business strategy by selling core credit-card business in 2/99. Stock price rose in 5/99 to 50 percent of previous year's high.

Note: 1997 and 1998 conduit rankings are from *The Mortgage Market Statistical Annual* for 1998 and 1999, respectively.

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Recent Developments Affecting Depository Institutions

by Lynne Montgomery*

REGULATORY AGENCY ACTIONS

Interagency Actions

Financial Institutions Help Identify Child-Support Debtors

Beginning July 1, 1999, financial institutions must help state and local authorities identify accounts held by "deadbeat parents." The "data match program" is part of a 1996 welfare reform law and requires banks, thrifts, credit unions, and brokerages to match account holders' Social Security numbers against a database of child support debtors provided quarterly by the government. The first copy of the national database was sent to participating banks at the end of June 1999. After receiving the government's quarterly list of debtors, financial institutions will have 45 days to report back any matches with demand deposit, savings, time deposit, checking, or money-market account holders. The state agencies will then decide whether to place liens on the accounts. *AB, 7/1/99.*

Federal Deposit Insurance Corporation

Bank and Thrift Failures

On July 9, 1999, the Office of Thrift Supervision (OTS) closed Oceanmark Bank, a FSB, in North Miami Beach, Florida, and the Federal Deposit Insurance Corporation (FDIC) was named receiver. The failed institution had total deposits of $64.2 million and total assets of approximately $70.6 million. All the deposits were purchased by Third Federal Savings and Loan Association of Florida in North Miami Beach, Florida, for a premium of $12.5 million. The acquirer also purchased $6.3 million of Oceanmark's assets. The FDIC retained the remaining assets for later disposition. The FDIC estimates this transaction will cost the Savings Association Insurance Fund (SAIF) $4.4 million. This was the first failure of a SAIF-insured institution in the United States since August 1996. *PR-39-99, FDIC, 7/9/99.*

The Office of the Comptroller of the Currency (OCC) closed East Texas National Bank of Marshall in Marshall, Texas, on July 9, 1999, and the FDIC was appointed as receiver. The OCC declared that the failed bank was "critically undercapitalized," that is, tangible equity capital was less than 2 percent of its total assets. The bank's asset quality had deteriorated as a result of poor credit underwriting and loan administration practices by management and inadequate supervision by the bank's board of directors. The FDIC entered into an agreement with Fredonia State Bank in Nacogdoches, Texas, to assume all of the failed bank's $113.0 million in total deposits.

*Lynne Montgomery is a senior financial analyst in the FDIC's Division of Research and Statistics.

Reference sources: *American Banker* (AB); *The Wall Street Journal* (WSJ); *BNA's Banking Report* (BBR); and *Federal Register* (FR).

Fredonia State Bank also purchased $127.3 million of the assets at a discount of $5.5 million. The FDIC retained the remaining $13.6 million in assets for later disposition. The FDIC estimates this transaction will cost the Bank Insurance Fund (BIF) $6.2 million. This was the third bank failure of a BIF-insured institution in the United States this year. *PR-38-99, FDIC, 7/9/99.*

The First National Bank of Keystone in Keystone, West Virginia, was closed by the OCC on September 1, 1999, and the FDIC was named receiver. The OCC found evidence of fraud that resulted in the depletion of the bank's capital. As of June 30, 1999, the failed bank reported approximately $1.1 billion in assets and $880.9 million in deposits. Ameribank, Incorporated in Welch, West Virginia, assumed approximately $135.0 million of the local insured deposits at a discount of $105,000. Ameribank also purchased $74.1 million in assets, and the FDIC retained the remaining assets for future disposition. The remaining out-of-area insured deposits, which are primarily brokered deposits, will be paid directly by the FDIC. This was the fourth failure of a BIF-insured institution in the United States this year. *PR-49-99, FDIC, 9/1/99; PR-52-99, FDIC, 9/3/99.*

On September 10, 1999, the OCC closed Peoples National Bank of Commerce in Miami, Florida, and appointed the FDIC as receiver. The OCC declared that the failed bank was "critically undercapitalized" and was in an unsafe and unsound condition to transact business. The bank suffered from poor lending practices, improper record keeping and accounting, and ineffective board and management supervision. As of June 30, 1999, the failed bank had total assets of $37.6 million and total deposits of $36.1 million. The FDIC entered into an agreement with Boston Bank of Commerce, a minority-owned bank based in Boston, Massachusetts, to assume all of the failed bank's deposits and approximately $34.0 million of the failed bank's assets at a discount of $1.8 million. The FDIC as receiver retained the remaining $3.6 million in assets for later disposition. This was the fifth bank failure of a BIF-insured institution in the United States in 1999. The FDIC estimates the cost of this transaction to the BIF will be approximately $2.2 million. *PR-55-99, FDIC, 9/10/99.*

Real-Estate Survey – July 1999

The July 1999 issue of the *Survey of Real Estate Trends* reported that the nation's commercial and residential real-estate markets continued to show improvement in the early summer. The quarterly survey polled 293 senior examiners and asset managers from the FDIC, the Federal Reserve System, the OCC, and the OTS. Survey respondents noted robust home sales and higher home sale prices despite recent rises in mortgage interest rates. Forty-five percent of the survey respondents said local housing market conditions were improving, while only 3 percent noted deterioration. The respondents also indicated that improvements in commercial markets reported in the April survey continued into the summer. Thirty-five percent of the July respondents noted gains in local commercial markets, up from 33 percent in April.

The national composite index used by the FDIC to summarize results for both residential and commercial real-estate markets remained at 69 in July, unchanged from the April index. Index scores above 50 indicate improving conditions, while index scores below 50 indicate declining conditions. *Survey of Real Estate Trends, FDIC, July 1999.*

Financial Results for Second-Quarter 1999

The FDIC reported that the Bank Insurance Fund (BIF) earned $219 million during the first six months of 1999, and the Savings Association Insurance Fund (SAIF) earned $226 million for the same period. The BIF closed the second quarter of 1999 with a fund balance of $29.8 billion. The SAIF closed the quarter with an unrestricted fund balance of $9.1 billion and $978 million in the restricted SAIF Special Reserve, which was established on January 1, 1999, and contains the amount by which the SAIF exceeds the Designated Reserve Ratio of 1.25 percent. Revenue for the BIF totaled $902 million for the first six months of 1999, including $857 million in interest on investments in U.S. Treasury obligations and $16 million in deposit insurance assessments. The SAIF earned $292 million in revenue during the first half of 1999, consisting of $286 million in interest on investments in U.S. Treasury obligations and $6 million in

deposit insurance assessments. The low numbers of bank and thrift failures contributed to the strong financial results.

The FSLIC Resolution Fund (FRF) assets in liquidation were reduced by $1.092 billion during the previous twelve months, with a remaining balance of $714 million on June 30, 1999. The FRF was established in 1989 to assume the remaining assets and obligations of the former Federal Savings and Loan Insurance Corporation. On January 1, 1996, the former Resolution Trust Corporation's financial operations were merged into the FRF. *PR-47-99, FDIC, 8/31/99.*

New Deposit Insurance Guide for Employees

On August 24, 1999, the FDIC released a revised version of its deposit insurance guide for employees of insured financial institutions. The revised publication, *The Financial Institution Employee's Guide to Deposit Insurance*, is a comprehensive guide that explains federal deposit insurance rules in a nontechnical manner. The publication includes instructional materials to assist in developing training programs for staff at financial institutions, operations and savings officers, and others who require knowledge of the federal deposit insurance system. *FIL-76-99, FDIC, 8/25/99; BBR, 8/30/99, p. 335.*

Federal Reserve Board

Interest Rates

On June 30, 1999, the Federal Open Market Committee voted to raise the targeted federal funds rate by 25 basis points, increasing the rate from 4.75 percent to 5.0 percent. At that time, the Committee voted to keep the discount rate unchanged. At the Federal Open Market Committee meeting on August 24, 1999, the policymakers voted to increase the federal funds rate an additional 25 basis points, raising the rate from 5.0 percent to 5.25 percent. The discount rate was also increased by 25 basis points, bringing the rate to 4.75 percent. The federal funds rate is the fee that banks charge each other for overnight loans, and the discount rate is the fee charged to financial institutions for borrowing from their district Federal Reserve Banks. *BBR, 7/5/99, p. 24–25; BBR, 8/30/99, p. 330–331.*

President Clinton Announces Two Nominations for Federal Reserve Board

On August 5, 1999, President Clinton announced his plan to nominate Carol J. Parry to fill one of the two vacant positions on the Board of Governors of the Federal Reserve System. Ms. Parry was formerly an executive vice president of Chase Manhattan Bank and was also a member of the bank's Policy Council. Ms. Parry has a background in lending to low- and moderate-income communities. If confirmed by the Senate, Ms. Parry's term on the Board of Governors would expire January 31, 2012. She will fill the seat vacated by former Federal Reserve Governor Susan Phillips. *BBR, 8/9/99, p. 222–223.*

On August 6, 1999, President Clinton announced his plan to nominate Roger W. Ferguson Jr. to be vice chairman of the Federal Reserve Board. Although Mr. Ferguson is already a Board member, his term was slated to expire on January 31, 2000. If the Senate approves his nomination, he would serve a 14-year term that would expire on January 31, 2014. *BBR, 8/23/99, p. 279.*

New Approach for Oversight of Large Banking Organizations

On June 24, 1999, the Federal Reserve Board issued guidance to supervisory staff and bankers on the oversight of large, complex banking organizations. The guidance calls for bank supervisors to use key risk-management processes and closely monitor the risk profiles of large, complex banking organizations. The guidance requires the regulators to form supervisory teams to focus more closely on the banking organizations' business and risks. Each team of regulators should have specialized skills and experience suited to the assigned institution, and the team should designate a senior supervisor as the central point of contact for the institution. In addition, each team should update its supervisory plan at least quarterly by continually reviewing the institution's current information, such as management reports and internal and external audits. To minimize duplicative regulatory effort, the guidance calls for close consultation with other domestic banking agencies, state insurance commissioners, securities regulators and foreign bank

supervisors. The Federal Reserve Board stressed the need for a different approach to supervision of large, complex banks because these institutions account for a considerable and growing share of total banking assets. In addition, these banking organizations are entering into more nontraditional activities, such as securities underwriting, and they are growing nationally and internationally. *BBR, 6/28/99, p. 1150.*

Liquidity Facility Established for Year 2000 Cash Problems

On July 20, 1999, the Federal Reserve Board approved a proposal to set up a special lending program to ensure that banks have enough liquidity to meet high cash demands caused by the century date change. The Century Date Change Special Liquidity Facility will be available from October 1, 1999 through April 7, 2000, to make extra loans to banks and other depository institutions experiencing liquidity problems. The Federal Reserve will charge interest at a rate equal to 1.50 percentage points above the fed funds rate. *PR-FRB, 7/20/99; BBR, 7/26/99, p. 125.*

Deposit Reporting Schedules Unchanged

In order to help banks manage the upcoming century date change, the Federal Reserve Board announced on July 15, 1999, that it will not change its deposit reporting schedules this year. Regulation D stipulates reserve requirements for depository institutions and also requires some institutions to file reports on deposit data on an annual, quarterly, or weekly basis. Each September, the Federal Reserve staff reviews the institutions' deposit levels and reserve liabilities, and then assigns the institutions to a reporting schedule. The reporting schedules are determined by the size of the institution, with the larger institutions filing reports more frequently. Normally, institutions may be required to switch to a new reporting category in September, depending on growth in their level of deposits and reservable liabilities. Holding the reporting schedules constant this year ensures that depository institutions will not need to alter their deposit data processing, and allows institutions to focus on century date issues. *PR-FRB, 7/15/99; BBR, 7/26/99, p. 127.*

Regulation DD

On August 31, 1999, the Federal Reserve Board published an interim rule to Regulation DD, which implements the Truth in Savings Act. The interim rule, which is effective September 1, 1999, permits depository institutions to deliver disclosures on periodic statements to a consumer's e-mail account or post them on a Web site, if the consumer agrees. Under an earlier interim rule published by the Federal Reserve Board in March 1998, periodic statements and other disclosures required under Regulation E (which implements the Electronic Fund Transfer Act) may be delivered electronically if the consumer agrees. Institutions commonly provide a single periodic statement that complies with Regulations E and DD. Therefore, this interim rule for Regulation DD should allow depository institutions to deliver deposit account statements electronically under a single set of procedures, and avoid the cost of printing and mailing the information. *PR-FRB, 8/31/99.*

Office of the Comptroller of the Currency

Information-Sharing Accord

On September 15, 1999, the OCC announced that it had reached an agreement with state insurance regulators from Alabama, Arizona, Arkansas, Connecticut, Indiana, Maryland, and West Virginia, to share information about customer complaints that may arise in connection with sales of insurance by banks. The agreement calls for the OCC and the insurance departments to send copies of complaints to each other and also to communicate on other matters, including regulatory and policy initiatives. The OCC now has agreements with 16 state insurance regulators. The agreements enhance consumer protection and ensure compliance with appropriate insurance sales standards. *PR-99-80, OCC, 9/15/99.*

Office of Thrift Supervision

Final Rule on Surety and Guarantee Obligations

The OTS issued a final rule on August 26, 1999, which clarifies a federal savings association's authority under Section 5(b)(2) of the Home Owners' Loan Act. The final rule states that a federal savings association's authority to act as surety also includes the ability to act as a guarantor. Surety agreements bind the surety, along with its principal, to pay funds to a third party. Guaranty agreements bind the guarantor to pay the third party on the principal's behalf only if the principal fails to perform its side of the contract with the third party. The rule also reduces minimum collateral requirements on suretyship and guaranty agreements from 110 percent to 100 percent of the surety or guarantee, provided the collateral is cash or a similar safe obligation.

In addition, the new rule clarifies that a federal savings association may issue letters of credit, eliminating confusion regarding the scope of activities authorized for federal savings associations that was caused by the deletion of a regulation in 1996. *OTS 99-57, 8/26/99; BBR, 8/30/99, p. 342.*

Federal Housing Finance Board

Risk-Split Pilot Program

On August 19, 1999, the Federal Home Loan Bank of New York won approval for a pilot program that will split the credit and interest-rate risk between private-sector mortgage lenders and the Home Loan Bank. Under the pilot program, named the Community Mortgage Asset, the Home Loan Bank will purchase single-family mortgages at market value from member banks and thrifts, and will package these mortgages into pools. For the first seven years, member banks and thrifts will receive 97 percent of the principal payments and 48.5 percent of the interest payments. After seven years, the Home Loan Bank will take on 97 percent of the risk as well as collect that much of the cash flow. Member banks and thrifts will collect just 3 percent of the cash flow, but will only be liable for 3 percent of any losses. The pilot qualifies as an acceptable investment by Home Loan Banks under a July 28, 1999, proposal by the Federal Housing Finance Board. That proposal limits Home Loan Banks' investments and curtails purchases of mortgage-backed securities by the year 2005. The intent of the proposal is to get the Home Loan Banks focused on their mission of financing affordable housing. *AB, 8/20/99.*

STATE LEGISLATION AND REGULATION

Florida

Effective July 1, 1999, insurance agents in Florida are permitted to sell insurance products on the premises of financial institutions, repealing a law that banned agents from engaging in such activities except in towns with populations of 5,000 or fewer. The new law provides a number of consumer safeguards relating to disclosure and advertising, including a requirement of written disclosure to customers stating that their choice of insurance would not affect credit decisions. Financial institutions are also required to provide written disclosure to their customers stating that the insurance products are not guaranteed deposits and may involve investment risk. *BBR, 7/5/99, p. 18.*

BANK AND THRIFT PERFORMANCE

Second-Quarter 1999 Results for Commercial Banks and Savings Institutions

FDIC-insured commercial banks earned $17.0 billion during the three months from April through June 1999, which represents the second-highest quarterly earnings ever reported by the industry. The earnings were $1 billion lower than earnings in the first quarter of 1999, primarily because of higher expenses at one large institution that was acquired during the second quarter. Noninterest expenses were $1.2 billion higher than in the first quarter and merger-related expenses at that one institution caused all but $52 million of the increase. Banks' annualized return on

assets (ROA) was 1.25 percent in the second quarter, which is the same as in the second quarter of 1998, but down from 1.32 percent in the first quarter of 1999. The number of problem banks dropped to 62 from 64 in the first quarter of 1999. There was one bank failure during the quarter.

FDIC-insured savings institutions reported profits of $2.9 billion in the second quarter, which is the second-highest quarterly total in the industry's history. Strong growth in noninterest income and lower expenses for future loan losses were two of the main sources of improved earnings. The industry's ROA for the second quarter was 1.03 percent, an improvement from the 0.98 percent average of the first quarter of 1999, but below the 1.09 percent average in the second quarter of 1998. The number of problem thrifts decreased from 16 institutions at the end of the first quarter to 14 institutions at the second-quarter end. *The FDIC Quarterly Banking Profile, Second Quarter 1999.*

RECENT ARTICLES AND STUDIES

According to an FDIC study released to the House and Senate Banking Committees on September 7, 1999, consolidation in the banking industry during the 1990s has made the Bank Insurance Fund (BIF) two-thirds more likely to fail than it was at 1990 bank consolidation levels. The study concludes that the consolidation that took place between 1990 and 1997 increased the risk of BIF insolvency by approximately 50 percent, and megamergers that took place between year-end 1997 and midyear 1999 increased the risk of insolvency further. The paper was written by Robert Oshinsky, a financial economist in the FDIC's Division of Research and Statistics. *Working Paper 99-3, FDIC, 9/7/99; AB, 9/8/99.*

A companion study released by the FDIC on September 7, 1999, and also written by Robert Oshinsky, concludes that a merger of the BIF and the SAIF would reduce the chances of either fund becoming insolvent. The study reports that a larger, combined insurance fund would be less at risk than either the BIF or the SAIF separately. The study is entitled *Merging the BIF and the SAIF: Would a Merger Improve the Funds' Viability*? *Working Paper 99-4, FDIC, 9/7/99.*

An August 1999 study from the Federal Reserve Bank of New York concludes that large companies have come to rely less on banks for their day-to-day credit needs, however they still utilize banks when economic conditions are bad. The report, entitled *Are Banks Still Important for Financing Large Businesses*?, was written by Marc R. Saidenberg and Philip E. Strahan. They found that, as securities markets have grown over the past 25 years, businesses depend less on banks. More companies use commercial paper instead of bank loans because the rates are usually better. The share of credit extended to non-financial businesses from bonds and commercial paper grew from approximately 45 percent in the mid-1970s to approximately 55 percent in the mid-1990s. In addition, banks' share of assets held by financial intermediaries declined approximately 50 percent in the past 15 years. *BBR, 8/23/99, p. 279.*

INTERNATIONAL DEVELOPMENTS

Basel Committee

On July 27, 1999, the Basel Committee on Banking Supervision released four papers providing guidance to banks and banking regulators on credit risk. The guidance is part of the Basel Committee's ongoing effort to improve risk-management procedures in banks and create a sounder global banking system. The first paper, *Sound Practices for Loan Accounting and Disclosure*, was issued in final form and addresses a range of issues facing banks and bank supervisors in the accounting for loans and loan losses. The Basel Committee is seeking comment on the three other papers. One of the three papers, *Principles for the Management of Credit Risk*, offers 17 risk-reduction practices that banks are advised to adopt. The second paper, *Best Practices for Credit Risk Disclosure*, recommends 24 ways for banks to help investors and other market players judge asset quality. The third paper, *Supervisory Guidance for Managing Settlement Risk in Foreign Exchange Transactions*, recommends that banks have a formal process for handling settlement risk. *NR 99-69, OCC, 7/27/99; AB, 7/27/99; BBR, 8/2/99, p. 197.*

Canada

Canadian legislation permitting the direct operation of foreign bank branches took effect on June 28, 1999, allowing foreign banks to set up commercially focused branch operations in Canada. Under the new legislation, foreign banks are able to open full-service or lending branches that would have the same powers as branches of domestic banks except for restrictions on deposit-taking. The full-service branches would be restricted to accepting deposits larger than C$150,000, and lending branches would not be permitted to accept any deposits or to borrow money other than from other financial institutions. The Bank Act had previously required foreign banks to operate branches in Canada through a separate Canadian subsidiary. *BBR, 7/5/99, p. 34.*

Mexico

On July 7, 1999, the president of Mexico's bank bailout agency announced that the agency will inject 13 billion pesos (approximately $1.4 billion) into Banca Serfin in order to recapitalize the bank, which is the third-largest bank in Mexico. The bailout agency, Instituto para la Proteccion al Ahorro Bancaria (IPAB), will assume temporary control of Serfin, and will determine the bank's status and ready it for sale. *BBR, 7/19/99, p. 114.*