Institutions and Policies for Maintaining Financial Stability

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When journalists from other countries would ask me in the 1980s how the United States could suffer such embarrassingly large losses in its savings and loan, and later its banking, industry, I would be somewhat embarrassed myself, as an American citizen, trying to explain how things could go so wrong in such a developed country. A decade later, the tables seemed to have turned. Many countries have since experienced serious banking problems, and when measured against the size of the economy, the losses suffered by the United States (about 3 percent of the nation's GDP) actually turn out to have been quite *low*.[1]

Economists and historians certainly will argue whether the problems in any of these countries constituted a "systemic crisis," or whether the transmission of financial information, and thus the efficient channeling of resources, was disrupted quickly enough and on a large enough scale to have caused significant harm to the real economy.[2] The consensus view in the United States is that we avoided such a crisis through effective financial firefighting equipment—deposit insurance—which automatically poured money into the hands of depositors of failed institutions, thus preventing any flames of financial distress from spreading to other depository institutions. Similarly, the Federal Reserve's prompt provision of liquidity following the October 1987 stock market crash has been

widely recognized for limiting any damage to the real economy that the sharp decline in equity prices might otherwise have produced.

Elsewhere, the story is different. In virtually all other countries that have experienced major banking problems, the banking industry performs most of the intermediation between savers and investors—unlike the United States, where nonbanking institutions and the capital markets play a dominant role. As a result, when banks catch cold in most other countries, their economies can get the equivalent of a harsh flu, and in fact, many have suffered significant recessions or slowdowns in their growth rates as a consequence of their banking difficulties (Goldstein).

The immediately preceding paper and session in this conference attempt to draw lessons from various systemic or near-systemic episodes to help guide policy responses in the event of another crisis in the future. My purpose here is different: rather than focus on the financial firefighting equipment, I want to examine various means of preventing and containing financial fires so that they do not endanger the financial system as a whole.

I concentrate almost exclusively on measures suitable for the United States, because that is the terrain I know especially well, but I hope that the general thrust of the paper has applications for certain other financial systems, especially those in industrialized countries. I also concentrate heavily on the banking system, but try not to ignore other segments of the financial system—the securities markets in particular—that pose systemic risks.

In brief, my main message is to urge a shift in emphasis from what I call the "prevention-safety net" approach to maintaining financial stability that has characterized U.S. policy since the Depression toward what I label the "competition-containment" paradigm that I submit should govern policy in the future. The post-Depression prevention model has attempted to ward off systemic danger in large part by sheltering *individual depository institutions* from competition, an approach that has failed, has been costly to consumers, and in any event, is being outmoded by market developments. The safety

nets—deposit insurance and emergency liquidity provided by the Federal Reserve—have been more successful in preventing and containing financial crises, but can be both addictive and seductive, causing institutions and policymakers alike to tolerate excessive risks that are damaging to taxpayers who foot the bill for the safety nets.

Accordingly, I claim that the time is ripe to move in a different direction, one that provides a much greater role for competition and market forces, while taking appropriate steps to ensure that any financial mishaps along the way—as there inevitably will be with more competition—do not threaten the rest of the financial system. This new "competition-containment" approach is both feasible and desirable. It need not and should not mean that government supervision is no longer necessary. To the contrary, markets cannot work effectively without accurate and timely information, and government supervision is still required to ensure that it is provided. But the quicksilver pace of change in the financial marketplace is putting government regulators increasingly at a disadvantage. One challenge for policymakers is to find ways to harness market forces so that not all of the burden of ensuring stability rests on the shoulders of the government.

Similarly, the shift in emphasis suggested by the paradigm offered here does not mean that prevention—a linchpin of the traditional paradigm—should be discarded as an important objective of financial policy. It shouldn't be. But it is vital that the object of preventive policies be *systemic crises*, not the failure of individual institutions. In a competitive economy, failure of some firms is the price one pays for competition. The job of "containment" policy is to ensure that the failure of some institutions can be tolerated in finance without bringing down the entire system.

Sources of systemic risk

Although other papers in this conference address this issue as well, I believe it is useful before proceeding with policy recommendations to recap what I see as the three main sources of systemic risk—and thus the dangers policy should seek to avoid. In designing

institutions and policies for maintaining overall financial stability, it is especially important to distinguish the phantom from the real concerns; otherwise, unnecessary and costly regulation and intervention may be the result.

Cascades

The first source of systemic risk is from what may be called a *cascade*, or the prospect that the failure of a large bank or other type of financial enterprise could trigger, in domino-like fashion, the collapse of other firms that are owed money by the failed institution. For example, because federal policymakers feared that many small banks that had uninsured accounts at Continental Illinois Bank when it failed in 1984 would also be put at risk if their accounts were not guaranteed, the federal safety net was extended to all depositors of Continental. As it turns out, this fear was misplaced: the uninsured depositors at Continental, including the small banks, lost only a small fraction of their deposits. In any event, one provision in the Federal Deposit Insurance Corporation Improvement Act of 1991 (FDICIA) substantially reduces the future threat that the failure of a large bank could produce liquidity problems for smaller banks. The FDIC is now explicitly authorized to give uninsured depositors their funds based on its average recovery experience, which in recent years has been about 90 percent, implying that uninsured depositors are at risk for only about 10 percent of their funds.

A relatively new source of interlinkages among the largest banks and securities firms has been the explosive growth in the volume of off-exchange or over-the-counter derivatives contracts and the heavy concentration of trading in those contracts among the largest banks, insurance companies, and securities firms.[3] Optimists take comfort from this concentration, pointing out that each of the participants in the derivatives markets has strong incentives to be careful in its dealings with the others. Pessimists suggest that the concentration of derivatives activity in the largest institutions may in fact increase, rather than reduce, systemic risk, because the inability of one of the counterparties to honor its obligations would affect only a small circle of institutions.[4] This debate cannot be

settled without some empirical evidence—namely, a financial scare—that society would be better off not experiencing.

There is one potential source of financial cascades, however, that policymakers can and should agree on to be of principal concern: the possible disruption that the failure of one or more large institutions could cause to any one of the various systems for clearing and settling transfers of funds and securities. Clearing and settlement—the plumbing of the financial system—is a relatively unknown and little discussed subject among the media and politicians who occupy themselves with financial affairs. Yet for those concerned with systemic risk, it is the subject that, in my view, merits the most attention because it is through clearing and settlement systems that the welfare of financial institutions and their customers are interlinked.

For banks, the two most important clearing and settlement systems are the large-dollar transfer operations of the Federal Reserve (Fedwire) and the Clearing House Interbank Payments Systems (CHIPS), which is privately run on behalf of approximately 100 of the world's largest banks. Together, Fedwire and CHIPS process transfers of several trillion dollars each day, including more than $1 trillion in foreign exchange transactions, which link the safety of the U.S. financial system with the fortunes of major banks abroad.

The systemic risks entailed under the two systems are very different, however. Under Fedwire all transfers are settled simultaneously in "real time" and are guaranteed by the Federal Reserve, which means that no systemic risk exists at all (although the Fed bears some risk of loss). In contrast, CHIPS settles on a "net basis," sending instructions at the end of each day to the Federal Reserve to add or deduct the "net" amounts due to or owed by each participating bank.

While netting vastly reduces the number of accounting instructions and is therefore more efficient, it also entails a risk of possible cascades: that the failure of one or more very large members could trigger a chain reaction forcing CHIPS to erase (or "unwind") all of the many transactions posted on it during the course of the day. At

least for a time, many participants could be unsure of their financial positions, and confusion could reign. The end result could be a generalized loss of confidence in the system, temporarily freezing up or otherwise impairing the commercial and financial exchanges on which the economy depends. This is not a theoretical concern. In 1974, the failure of Bankhaus Herstatt in Germany, due largely to foreign-exchange losses, sent tremors through CHIPS and the international interbank market, causing funding difficulties for Japanese and Italian banks in particular.

As will be discussed later in the paper, to its credit, CHIPS has taken a number of steps in recent years that significantly reduce its risks of collapse; the system can now withstand the simultaneous failure of its two largest members. But even more safety can and should be engineered into CHIPS by moving to more rapid settlement.

There are also risks in the various systems for settling and clearing trades of securities and other financial instruments, notably options and futures. In fact, during the 1987 stock market crash, the Options Clearing Corporation in Chicago was threatened with collapse because of liquidity problems experienced by at least one of its largest members. The crisis was averted largely because the Federal Reserve induced large banks to continue lending to the securities industry (Borio, Mishkin).

Contagion

A second, perhaps more familiar, source of systemic risk is *contagion*, such as a deposit run on a troubled bank that can become "contagious" when depositors at other banks run as well. At its core, contagion arises because of a *lack of accurate and timely information*. Depositors run, for example, because having seen one prominent institution fail, they cannot readily determine whether their own bank is safe.

Deposit insurance has solved the contagion problem for insured depositors. Beginning with the failure of Franklin National in the 1970s, policymakers also have extended the safety net to uninsured

depositors at various large banks that have failed, such as Continental Illinois, the Bank of New England, and the MCorp banks of Texas. Yet because stretching the safety net in this manner undermines market discipline, provisions were added to FDICIA in 1991 to make it more difficult for federal authorities to protect uninsured depositors against loss (doing so now requires the approval of the Fed, the FDIC, and the Secretary of the Treasury). The new limits, coupled with tighter capital standards and the act's requirement for prompt corrective action (PCA) when banks get into trouble, should reduce the likelihood of large bank failures in the future. Significantly, uninsured depositors at a number of failed banks have not been bailed out since FDICIA was enacted, without causing systemic consequences. Nonetheless, policymakers cannot ignore the possibility that a large bank failure in the future could trigger a run by uninsured depositors at other banks, which could temporarily curtail the ability of the affected institutions to extend credit and produce a generalized loss of confidence, which could rattle financial markets and, at least for a time, induce consumers to cut back their spending.

Contagion is not limited to runs on banks. In 1970, the Penn Central defaulted on its commercial paper (CP), triggering fears that investors would run from the CP market and thereby make it impossible for some firms to roll over their CP when it was due. Indeed, the Fed was sufficiently concerned to have encouraged banks to supply credit to borrowers who found themselves in that situation (Brimmer). With the rapid growth of the CP market since then, some may be concerned that the failure of a large corporate issuer of CP today could have even more serious consequences for CP borrowers. Moreover, since many money market mutual funds have invested heavily in CP, might not many investors in these funds mount a run if they saw a large firm default on its CP, fearing that the losses on the investment would force their fund to "break the buck" (and not honor redemptions at the $1 par value at which the shares are issued)?

There are several reasons, however, for discounting the threat of CP contagion. For one thing, with more than $700 billion in debt

outstanding, the CP market today is far deeper and more advanced than in 1970 (when less than $40 billion was issued), with many more issuers and investors. With greater size has come much more liquidity and sophistication on the part both of buyers and sellers, who have become accustomed to assessing the financial health of issuers and distinguishing the strong from the weak. In addition, most corporations that issue CP have the backing of a bank guarantee or commitments by the bank to lend should the issuer become unable to meet its CP obligations (Edwards). As a result, the CP market has been undisturbed by the defaults in recent years of several large issuers (Drexel, Burnham in 1970 and Olympia and York in 1992). Similarly, the municipal bond market did not tank when the Washington Public Power System (WPSS) defaulted on its bonds in the 1980s.

The risks of contagion were much more evident in early 1995 during Mexico's peso crisis, which confirmed the proposition advanced earlier—that when investors do not have accurate and timely information, they may not bother to distinguish between the financial health of different institutions, or in this case countries. As a result, even though the United States organized a lending package to prevent Mexico from exhausting its foreign exchange reserves, many investors ran from investments in other developing and emerging market countries.[5] A similar pattern has been observed in the wake of Thailand's banking and financial difficulties this summer, although fortunately, the effects so far have been more limited.

Perhaps no potential source of contagion has been more widely discussed in the media than the possibility that the millions of investors who have poured record volumes of their assets into mutual funds will one day panic and take their money out, literally sucking the lifeblood out of the capital markets and creating another market crash like October 1987 (or even worse). Fortunately, the market has provided some empirical evidence on this issue in the last thirteen months, in each case rebutting those who are fearful: both the 7 percent plunge in the Dow Jones Industrial Average in July 1996 and the 10 percent drop in March and April of 1997 were quickly followed by market rebounds and new highs. Nonetheless,

no one can really be certain that investors, whether individuals or managers of large pension funds, will be so patient in the event of a future market drop.

Optimists point to the fact that much of the buying of mutual funds in recent years has come through self-managed retirement accounts, which presumably are being managed for the long-term. Moreover, mutual funds have taken various measures since the 1987 crash to minimize the need to sell their positions even if they are suddenly swamped with requests for redemptions.[6] Pessimists respond that even long-term investors can and will move their funds out of equity funds into bond and money market funds if they fear continuing price declines. And money managers, under pressure not to be outperformed by their peers, can act like lemmings and run for the door at the same time, whether or not they need to in order to meet redemptions. The bottom line is that the most recent data points may have been the products of luck; the next one could be the event that proves the pessimists to be right.

Asset implosions

A final source of systemic risk is a sudden and sustained drop in asset values, whether of real or financial assets, that causes a rash of bank failures and/or a collapse in stock prices. Moreover, the originating event may lead to a cascade or contagion, or both, further aggravating the systemic effects.

I will not speculate on the likelihood of a future crisis in real estate, financial, or other markets, except to note that overshooting of prices seems to be characteristic of many markets and so the possibility of a future collapse in asset values remains. For example, the recent budget agreement creates new tax incentives for capital gains, which could eventually lead to the kind of over-investment in commercial real estate that led to banking troubles in the 1980s. Fortunately, however, this time around the banking system is much better capitalized and in a stronger position to weather any such storm.

The possibility of a future stock market collapse and the threat of

contagion have already been addressed in part. A related concern of some is that the proliferation of exchange-traded derivatives—futures and options—make the U.S. capital markets, in particular, more susceptible to a deep drop in asset values than they once might have been. Those who believe they have point to the fact that derivatives both lower the costs of betting on market movements and allow investors to take advantage of leverage—factors which can make it easier for investors who fear further price declines in a falling market to act on those fears and thereby make them self-fulfilling prophecies. Similarly, while formal portfolio insurance has been formally out of fashion since the 1987 crash, many investors now use "dynamic hedging" or "momentum investing" strategies that effectively amount to the same thing—selling futures or buying put options as securities prices fall, which can obviously deepen any initial downturn in prices.

A number of factors point in a more optimistic direction, however. A recent survey of five major market scares over the last decade (including the stock market crash of October 1987) concluded that in no case did mutual fund managers—who collectively control the largest holdings of equities among all institutional investors—resort to panic selling (Remolona, and others, 1997). A contributing factor to the crash of 1987—the episode pessimists fear could be repeated—was that the exchanges physically could not handle the heavy trading volume, which meant that prices were not up to date, causing many investors to bail out because of the uncertainty in their positions. Since 1987, the computer infrastructure has been vastly upgraded so that much heavier trading volume can be accommodated.[7] And finally, some (but not all) observers may draw comfort from the various circuit breakers that have been introduced since 1987 in order to provide breathing space for investors to calm down during a major stock market crisis.

Summary

To summarize, one can worry about endless sorts of events which might trigger a financial panic or major systemic event, but it is useful for policymakers to concentrate primarily (if not exclusively)

on a few, which may or may not occur simultaneously under extreme circumstances. These include: a possible breakdown of any one or more of the major clearing and settlement systems (primarily CHIPS); a run by uninsured depositors on major banks triggered by any number of possible events (not restricted to problems in the derivatives markets); and another stock market crash, deeper and more sustained than the one experienced in 1987.

The prevention-safety net paradigm for ensuring financial stability

The Depression has cast a long shadow over the policies and institutions that have been erected to protect the economy from systemic crisis, and understandably so. The experience—and now memory—of 9,000 banks failing over a span of four years is one that is not easily forgotten, nor should it be.

Broadly speaking, the post-Depression paradigm for maintaining financial stability has had two legs: measures that have sought to *prevent* individual depository institutions from failing and an expanding *safety net* that has insulated depositors (and in some cases, other creditors) from loss when failures have occurred. As argued below, however, the "prevention-safety net" paradigm has had mixed success, at best. Moreover, as the next section will demonstrate, the paradigm is being subjected to increasing stress by various forces that are reshaping the world of finance. Accordingly, the time is ripe for moving toward a new approach for ensuring financial stability in the future, one that is outlined in the concluding portion of the paper.

Activity limits

Historically, one of the first instincts of policymakers seeking to prevent a replay of the Depression has been to limit what banks or their affiliates can do. The best known restrictions, perhaps, are those of the Glass-Steagall Act, which erected (porous) walls between commercial and investment banks. But even before Glass-Steagall, national and state banking laws generally restricted banks

to lending money and did not permit banks to invest in other businesses, largely for "safety and soundness" reasons. In addition, Congress placed ceilings on the interest banks and thrifts could pay depositors, ostensibly to prevent them from competing "excessively" and thereby contributing to another round of failures.

Depositories also have been subjected to activity restraints in order to reach social objectives unrelated to ensuring stability. Until relatively recently, the law restricted banks and thrifts from freely operating in all fifty states, largely to protect locally based institutions. The Bank Holding Company Act, which restricted both the geographic reach and business activities of bank holding companies, was enacted in 1956 primarily to prevent excessive concentrations of economic power—and in the case of the 1970 amendments to the act, the emergence of American "zaibatsus"—rather than to safeguard the financial system against breakdown. And Congress created a federal thrift charter, buttressing it with deposit insurance and a specialized lender to provide liquidity (the Federal Home Loan Bank System), in order to promote home ownership. To ensure that thrifts carried out this mission, Congress tightly controlled what they could do, restricting their investments primarily to long-term fixed-rate mortgages funded by shorter-term deposits subject to interest rate ceilings.

For much of the postwar era until the late 1970s, these various restrictions, in conjunction with capital standards and supervision discussed below, appeared successful. Only a handful of banks, almost always smaller ones, failed each year. There were no major systemic crises. But appearances can prove deceiving. The restrictions on competition penalized consumers over many decades, depriving them of market interest rates on their deposits and the benefits of greater competition between banks in local markets that interstate banking will eventually allow (albeit with some greater degree of national concentration) and the potential improvements in innovation and efficiency that combinations of banks and other types of financial institutions would make possible, if permitted.

Moreover, by the 1980s (if not earlier) certain of the restrictions

not only failed to promote financial stability, but actually proved to be *destabilizing*—the best illustration, of course, being the initial stages of the thrift crisis in the early 1980s. The interest rate ceilings on thrift deposits and the restriction that thrifts invest their funds almost exclusively in long-term, fixed-rate mortgages placed both policymakers and savings and loans in an impossible situation when market interest rates soared into double digits in the late 1970s and early 1980s. If the institutions were not allowed to pay higher interest rates on savings accounts, then depositors would flee, crippling the thrifts and potentially creating a systemic crisis. But if the institutions were freed from the interest rate ceilings, they would then face deep operating losses because the short-term rates they would need to offer in order to attract deposits would have been well above the rates they were earning on their portfolios of fixed-rate mortgages. Fearing the possible systemic effects of picking the first option, policymakers chose the second horn of the dilemma and deregulated interest rates, which sure enough not only led to huge operating losses but also wiped out the economic net worth of virtually every thrift by causing the market value of its mortgage portfolio to plunge.

Policymakers and regulators took a variety of steps, certain of which I discuss below, in order to avoid closing most of the thrift industry and shelling out more than $100 billion in deposit insurance payments (from a fund that had nowhere close to this amount). One set of measures—liberalizing the restrictions on thrift investments and thus freeing the institutions from the straightjacket that contributed to the initial stage of the thrift crisis—has been criticized in some quarters as having demonstrated that "deregulation" was an erroneous policy to pursue. This is because many thrifts that subsequently took advantage of the liberal authority to invest in commercial real estate loans (and even directly in such projects) later failed, contributing to a significant portion of the roughly $130 billion it took to eventually resolve the thrift crisis.

It is inappropriate, however, to use the thrift experience as a reason for limiting the diversification opportunities for depository institutions. As discussed in greater detail below and has been widely

confirmed by various post-mortems on the thrift crisis, the asset-side deregulation of thrifts in the early 1980s was extremely poorly timed. Thrifts were freed of their asset restrictions at a time when capital standards had been essentially eviscerated so that owners of thrifts had every incentive to use the new powers to gamble for resurrection. Moreover, many of them had little or no experience in utilizing these powers. The key lesson to take away from the thrift episode is *not* that asset deregulation was unwise in principle, but that *in practice* doing so without accompanying safeguards—strong supervision and effectively enforced capital standards that are essential to prevent insured institutions from abusing the safety net—was the policy mistake (National Commission on Financial Institutions Reform, Recovery, and Enforcement Act {FIRREA}).

At this writing, Congress is again debating whether and how to lift remaining activity restrictions on banks and thrifts and their holding companies. Although there is apparent consensus that restrictions preventing banks from affiliating with and even owning other financial enterprises should be lifted—indeed, the Comptroller of the Currency issued a rule in December 1996 permitting national banks, in principle, to own subsidiaries in any aspect of the financial services business—there is broad disagreement whether and to what extent depository institutions should be permitted to own or be owned by commercial enterprises. To a limited degree, this debate has been settled for companies that own a single thrift, or "unitary thrift holding companies," where there are no such restrictions. But commerce and banking continue to be strictly separated.

I do not believe that resolution of the banking-commerce issue, however it comes out, will have a material effect on the exposure of the financial system to systemic risk. Or, to put it more bluntly, I think the critics of mixing banking and commerce have significantly exaggerated the safety and soundness concerns. At the same time, I am also skeptical that there are substantial synergies between banking and most commercial enterprises (with the possible, if not likely, exception of activities relating to information technology, since finance is, at its core, very much an information technology business).

Perhaps the most important reason for my "pox-on-both-your-houses" view is that while a number of diversified unitary thrift holding companies continue to operate (twenty-eight as of mid-1996 according to the FDIC, 1997), the market has already rendered a negative verdict on two of the largest marriages between commercial companies and thrifts. Both Ford Motor and Sears have dumped their thrift units after several years of searching for the claimed synergies. Similarly, very few sizable large banking-commercial conglomerates existed before they were prohibited by the Bank Holding Company Act (Shadow Financial Regulatory Committee).

Meanwhile, the claim that banks could take excessive risks by owning or affiliating with commercial entities can be met with several responses. Regulators can and should require the nonbanking activities to be separately capitalized from the bank. This is done automatically if the nonbank activity is carried out through the holding company, whose capital is not counted as capital of the bank. The Comptroller's "operating subsidiary" rule authorizing bank ownership, in principle, of other financial activities accomplishes the same end by requiring banks to deduct any investments in their subsidiaries from regulatory capital. Furthermore, conflicts of interest can be and are governed by rules (backed by stiff fines for violations on bank officials in their *personal capacities*) requiring bank lending to affiliates and subsidiaries to be on arms-length conditions, to be fully collateralized, and to be limited in amount (tied to the capital of the bank).[8] In the end, the objections to the mixing of banking and commerce center on vague fears of excessive concentration of "economic power"—fears which are unrelated to my present topic and which would not be realized in any event if such marriages are few, which for reasons already given, I believe is most likely.

Capital standards and supervision

Unlike activity restrictions, which in large part have been misguided as a way to prevent both the failure of individual depositories and wider systemic problems, capital standards that are backed by aggressively prudent examination are fundamentally necessary to

accomplish these objectives. Until the 1980s no significant questions were raised about these key components of the prevention paradigm, nor were they subjected to stress.

This, of course, changed radically during the 1980s for both thrifts and banks. In each case, political leaders and regulators clung to useless and misleading measures of capital based on *historical costs* rather than *market values*, and thus allowed institutions that had little or no *economic net worth* to gamble for resurrection. This forbearance strategy proved disastrous for thrifts, which proceeded to run up new credit-related losses by the end of the decade of even greater magnitude than the interest-rate related losses they had suffered in the early part of the 1980s. They were allowed, indeed encouraged, to do so by legislative and regulatory decisions made in the early part of the decade that not only continued to ignore market value measures of institutional capital, but through a variety of technical rules that effectively waived capital standards based even on historical cost accounting standards (National Commission on FIRREA).

Both regulators and Congress engaged in forbearance for problem banks during the 1980s as well. Regulators did so by not aggressively forcing the money center banks that had large outstanding debts to developing countries to establish loan loss reserves that were commensurate with the value of the debt that was then traded in the secondary market (Sachs and Huizinga). Meanwhile, Congress authorized forbearance for problem banks that engaged heavily in agricultural and energy lending. There is some evidence that the latter policy "worked," in the sense that it permitted a number of institutions to recover (Hane). But it is difficult to defend the regulatory forbearance strategy followed for large banks, many of which used the breathing space to dig their way out of their less developed countries (LDC) lending problems by going head first into commercial real estate lending, and to a lesser extent lending for leveraged buyouts—only to incur substantial losses in the process. Fortunately, no money center bank failed (other than Continental Illinois), but the loans that went sour represent misallocated capital that could have been much more productively invested elsewhere in the economy.

I have heard over the years some knowledgeable observers argue that, faced with the simultaneous LDC lending difficulties at virtually all of the money center banks in the early 1980s, policymakers had no other choice except to forbear. In particular, these observers claim that had policymakers attempted to take over or liquidate all of the institutions simultaneously, as would have been required had the prompt corrective action provisions of FDICIA then been in effect, they could have panicked the markets, depositors at other banks, and consumers. In fact, banking regulators could have followed a different, and I believe more productive, course had they replicated the policy the FDIC took in the early 1980s toward the many insolvent savings banks that belonged to its insurance fund. While it did not close them down (lacking the funds to do so), it did restrict the institutions' growth until their capital positions were restored (Isaac). Had the same policy been followed for the large money center banks that were plagued by problem LDC loans in the early 1980s, much of the over-lending and excessive development of commercial real estate properties that occurred later in the decade would never have taken place. Moreover, had this been the case, the banking system would not have been as weakened as it was during the 1990-91 recession, and accordingly, the subsequent recovery would not have so been weighted down by many inadequately capitalized banks that were then unable to lend.

Government safety nets

The foregoing measures—activity limits, capital standards, and supervision—were and still are aimed at preventing financial calamities. But if misfortune strikes, the government's safety net has been there to keep any crisis from spreading. The success of deposit insurance, both formal and informal (as extended to technically uninsured depositors), has already been noted. In addition, intent on not repeating its mistake of the 1930s when it failed to provide sufficient liquidity for the financial system, the Federal Reserve, on several occasions over the past two decades, has stepped in to provide a safety net of its own: actually pumping in liquidity (during the 1987 stock market crash), promising to do so (after a "mini" stock market drop in 1989), and encouraging banks to lend

to firms in need of liquidity (Penn Central in 1970 and the 1987 stock market crash).

The major problem with safety nets is that, like candy to a child, they are too alluring. For private actors, they create the well-known problem of moral hazard, which if not properly offset can result in losses to taxpayers and to the economy (through misdirected investments). But even for policymakers, safety nets can provide a false sense of comfort. This is not to say that if it is truly needed, a massive injection of reserves by the Federal Reserve cannot significantly mitigate any systemic problem. Enlarging the money supply can prevent sharp increases in interest rates on government obligations, and thereby enhance the relative attractiveness of equities, commercial paper, or any other financial instrument whose market shows signs of imminent (or current) collapse. Moreover, if generalized liquidity proves inadequate, the Federal Reserve can also intervene directly as a truly last resort (and in unprecedented fashion), by lending to troubled enterprises or clearinghouses (rather than just to banks).

Nonetheless, such extreme interventions can have costs (apart from moral hazard) or face limits of their own. For example, monetary authorities may hesitate before pumping in liquidity if the inflation rate is already high and accelerating. Even if they do not feel so limited, markets themselves might supply their own constraints. Although lower interest rates on short-term government bonds can stimulate demand for alternative instruments, they can also depress demand for dollar-denominated assets in general, and thus under the right conditions, trigger flight from the dollar. Knowing that a plummeting dollar can fuel inflation, investors might then also demand sharply *higher* interest rates on *long-term* bonds, which could more than offset any stimulus provided by the monetary injection.

There also is always the possibility that the Federal Reserve could find itself facing a Keynesian "liquidity trap," which would significantly limit its ability to stimulate the economy through temporary monetary ease in any event. Japanese policymakers may have faced

just such an impasse in the 1990s as they have tried, with only limited success, to use monetary policy to nudge their economy toward recovery.

In short, while both generalized and particularized liquidity support from the Federal Reserve can help rescue the economy from financial crisis, both should be viewed as very last resorts. Such help comes with a price, and in certain albeit rare conditions, may not be as effective as desired. A central challenge for policymakers, therefore, is to develop shock-absorbing mechanisms for containing financial calamities that neither rely entirely on the Federal Reserve nor are themselves undercut by a fundamental flaw, in principle (as are most activity limits) or as implemented (as was the case with capital standards in the 1980s).

Forces of change

Finance is one sector of the economy where the mutually reinforcing trends of the information revolution and of globalization are meeting head-on. Unlike goods, which must be physically transported from seller to buyer, or many services that can only be delivered at home, money or financial instruments can be and are sent around the world, instantaneously and cheaply, by phone, computer, and modem.

A detailed discussion of the many trends that are changing the financial landscape is beyond the scope of this paper. However, it is useful, before outlining a new paradigm for maintaining financial stability, to discuss briefly how four of the most important forces shape views on this subject.

The information revolution

That advances in information processing and communication have affected finance is both understandable and obvious. Finance is an industry organized around information: the collection of billions of "bits" of knowledge and where money is, who wants to lend it, and who needs to borrow it. Clearly, therefore, revolutionary changes in

computer technology, which are making information cheaper to store and faster to transmit have direct impacts on all aspects of the financial business. To observe the most sophisticated of uses, one needs only to enter any commercial or investment bank's trading room, lined with the latest computer technology using cutting-edge software to exploit complicated trading strategies. Meanwhile, in the back room of most financial enterprises, computers churn away processing vast quantities of data about customers and their financial transactions. And for ordinary consumers, the information processing revolution is leading to a steady replacement of paper (checks) with various forms of electronic means of payment—credit and debit cards, the coming smart cards, and the future transmission of funds over the Internet.

While the continuing advances in computers and communications are benefiting consumers, they have different implications for policymakers concerned about maintaining financial stability. On the negative side, faster communications also can facilitate contagion—a lesson demonstrated over a decade ago when Continental Illinois failed. Policymakers were forced to act not by depositors lining up to withdraw their funds—the "old-fashioned" kind of run experienced during the Depression—but instead by large depositors who mounted an "electronic run," which threatened to drain the bank of its liquidity within hours. Similarly, with investors from around the world plugged into the markets through their computer terminals, the equivalent of a run can occur on any market—equities, debt, and derivatives—in very short order. Meanwhile, the Internet may lead indirectly to a new set of risks to the extent it permits the creation of the "frictionless capitalism" envisioned and championed by Bill Gates (Gates, 1995). While the proliferation of new services is unambiguously good for consumers, such as electronic trading of securities and search engines that will permit increasing numbers of users to use the Internet to locate the cheapest loans and highest yielding instruments, they are driving down the margins traditional financial institutions have been accustomed to earning. Some may compensate by looking for riskier ways to make money.

Fortunately, the same technologies that may generate more risk

may also help policymakers contain it. Continuing advances in computer processing will lower the costs of operating payments systems in "real time," as well as eventually allowing the monitoring of the health of financial institutions on the same basis, goals which are discussed in greater detail in the next section. Similarly, more powerful computers enable exchanges to handle substantially larger trading volumes, a development which as already noted, helps insulate the financial markets against a repeat of a crash like the one witnessed during October 1987.

Financial innovation

Innovations in computers and communications technologies are also facilitating financial innovation—or the development of new instruments and trading strategies, which also have their pluses and minuses. On the positive side, more powerful computing has facilitated the growth of the mutual fund industry and has made it possible for Wall Street to "securitize" a steadily expanding portion of the banking balance sheet: mortgages, auto and credit card, and increasingly, business loans. By turning individual, illiquid loans into components of far more liquid securities, the securitization process is lowering the cost of credit for millions of borrowers. Meanwhile, the explosion of volume and variety of financial derivatives—another area of rapid financial innovation—has made it easier for investors and institutions to manage and reduce the risks they confront from constantly fluctuating rates of interest and foreign exchange.

The potential downsides of the innovative process are several, however. While securitization has enhanced the liquidity of the asset side of the banking balance sheet, it also lowers returns and thus, like the coming electronic revolution, may lead some institutions to take increased risks in nonsecuritized lending and trading activities. Although derivatives have made it easier for institutions and investors to hedge their risks, the concentration of derivatives activity in a small number of institutions has aroused safety concerns, as noted earlier. In addition, the speed with which institutions can use derivatives to change their risk exposure, as well as the complex nature of

some of the instruments themselves, has considerably complicated the task of examiners and regulators in monitoring the riskiness of banks in particular. Indeed, the fast pace in the financial arena is reducing the value of static measures of an institution's financial health; of considerably greater importance is knowing how susceptible institutions are to changing macroeconomic conditions, or their risk exposures.

Globalization

It has become commonplace to speak of the "globalization" of economic activity and finance in particular. But with respect to finance, the buzzword is quite accurate. Cross-border financial activity, whether measured by investment, the volume of derivatives transactions, or the volume of foreign exchange traded daily, has been growing faster than trade or economic activity for some time.

The expanding locus of financial activity, quite clearly, complicates the lives of national regulators and policymakers, whose jurisdiction is bounded by the borders of the countries in which they reside. Of necessity, therefore, globalization has required regulators from individual countries—especially those in the industrialized world—to meet and talk with each other more often, and to exchange information about markets and the status of individual institutions. Moreover, because the globalization of finance has demonstrated how financial sectors and economies are increasingly interlinked—beginning with the Herstatt scare of the 1970s—it has led the industrialized countries to agree on minimum (and theoretically, harmonized) capital standards for banks, an effort that some now would like to see duplicated for other countries (Goldstein).

Enhanced competition

Finally, the financial sector in the United States and elsewhere around the world is becoming more competitive. The walls that have separated banks from other financial institutions as well as from competition in other jurisdictions (whether from other states, as in this country, or from other countries) have been steadily coming

down or clever institutions have been finding ways around them. At the same time, at least when measured by on-balance sheet activity, depositories have been growing relatively less important (at least in this country) as intermediaries between savers and investors, compared to such other institutions as mutual funds, pension funds, and insurance companies.

More competition is unequivocally good for users of financial services. And despite the relaxation of many restrictions here and elsewhere, there is room for more liberalization. Japan has announced a "Big Bang" package of financial reforms, which if actually implemented, could provide large benefits to consumers in that country, as well as open opportunities for financial firms from elsewhere around the world to crack the Japanese market. Meanwhile, Europe has yet to fully digest the various directives of the European Union that are forging a common financial market there. As consolidation proceeds, inefficiencies should be wrung out of the European financial system. The arrival of economic and monetary union (assuming it occurs) will also enhance competition in Europe, as it will make much more transparent the differentials in prices among financial services, which are now quoted in different currencies.

Here in the United States, even with the various incremental reforms that have been adopted over the past decade, a number of studies have found that there still are sizable inefficiencies in the financial services industry. For example, a preliminary analysis by economists at the Federal Reserve Board has estimated that costs of banking services could be reduced by as much 20 percent if all inefficiencies among banks were removed (Berger and Meste). Even larger inefficiencies—exceeding 50 percent—have been estimated for the life insurance industry (Gardner and Grace). And there is a wealth of evidence that deregulation and the accompanying innovations it has spawned have led to major cost reductions in other industries that have been deregulated—airlines, railroads, and trucking. As interstate branching proceeds, and if the cross-industry barriers between banks and other financial service firms are removed, the elimination of the remaining inefficiencies in the financial sector could be accelerated, as competition forces them out

and as entry by new firms brings new and cheaper ways of delivering financial services to consumers.

Increasing competition brings new challenges to policymakers concerned with reducing systemic risk, the most important of which is to *refrain from the impulse to reverse course* in the misguided belief that less competition can promote financial stability. Some may also believe that the relative shrinkage of the banking sector complicates the life of the monetary authorities, who exert their influence over the economy most directly through banks (although I don't believe this to be the case, since the Fed can still directly control short-term interest rates, which anchor the yield curve, even if banks' relative share of financial assets has fallen).

Toward a more stable and competitive financial marketplace for the future

If the financial system were analogized to a road system, then the dominant policy assumption since the Depression has been that a traffic accident anywhere can bring disaster everywhere. Accordingly, a "prevention-safety net" paradigm was developed that, figuratively speaking, set a 35 mile per hour speed limit, separated cars into types and then put each type in its own lane, demanded that no one leave home without a full tank of gas and a spare tire, and promised a free tow and repairs to anyone who got dangerously stranded.

What happens, however, when new sorts of vehicles are appearing at ever shorter intervals? When new technologies and faster cars make low speed limits not only harder to enforce but inimical to innovation? When free towing seems to encourage reckless driving? Considering this problem, a thoughtful traffic engineer might note that a few accidents will inevitably happen, even after reasonable safety precautions have been put in place. Similarly, some intersections will suffer gridlock at rush hour, even after roads have been made as wide and as well marked as sensibly possible. Anyway, predicting either the cause or the location of the next accident is growing hopeless as new vehicles and routes proliferate. So this

engineer might increasingly turn to another sort of strategy, one that works no matter where or how the next accident happens—one that looks for ways to ensure that an accident at any one intersection will not paralyze the others.

In short, the aim would be to *isolate and contain mishaps*, localizing, and so minimizing, the systemwide effects of crashes. Emphasis would shift toward early quarantine of problem cases, rather than last-minute rescues; toward the use of timely information, rather than just flat mandates, as a safety system; toward buffers and shock absorbers designed by market participants and enforced by the marketplace as well as by the government, rather than one-size-fits-all standards enforced only by regulators; and, finally, toward real-time settlement mechanisms that insert control rods, so to speak, in the path of chain reactions.

That, in a nutshell, is the essence of the "competition-containment" paradigm that is suggested here as the way to think about maintaining financial stability in the more competitive and dynamic financial marketplace that exists today and will characterize the next century. As stated at the outset, adopting the paradigm does not mean that government supervision is to be abandoned; it can't and shouldn't be. An external check is still required to validate the accuracy of the information produced by insured depository institutions for several reasons. Private actors—accounting firms and rating agencies—are complements to, but not complete substitutes for, regulatory supervision. Neither has the legal weapons that can compel depository institutions to disclose information they may not want revealed or punish them if they fail to disclose it. And rating agencies in particular only examine publicly traded institutions and thus cannot validate information for the many thousands of banks and thrifts that are privately held.

Explicit endorsement of the competition-containment model also takes some courage because it implicitly accepts that more competition may lead to some failures of depository institutions. Inside the Beltway, more institutional failures may be viewed as the fault of the regulators. There are several ways to mitigate this perception.

One is to take the prompt corrective action provisions of FDICIA seriously by taking control of depositories before their market value net worth has been totally exhausted. Early detection of trouble and reaction to it will minimize and even avoid losses to the deposit insurance funds, which are the key events that spell trouble for regulators on Capitol Hill (Benston and Kaufman).

The other step is to acknowledge to political leaders at the outset that in a more competitive environment, some institutions may fall through the cracks; trouble will be detected too late; and some institutions will fail and cause some insurance losses. Nonetheless, if properly limited—as I argue shortly they can be—then these risks should be significantly outweighed by the benefits to consumers of a more competitive, dynamic financial marketplace. Forthrightness avoids creating false expectations, which when dashed, can boomerang in undesirable ways. As an analogy, consider the way the way the North American Free Trade Agreement (NAFTA) was sold by many of its proponents: that it would create more jobs. Yet any well-trained economist knows that the real reason for liberalizing trade is to promote efficiency (static and dynamic) and so raise overall standards of living; employment is determined by macroeconomic factors and policy. As events turned out, the peso crisis made a mockery in the popular media of the jobs argument and, in the process, soured much of the public on freer trade in general, a legacy that supporters of fast-track legislation now are fighting to overcome. It would be a shame if a similar outcome happened in the financial services arena—if, after more than a decade of debate, Congress finally enacts financial modernization legislation only to reverse course several years later because of some financial mishap that arguably would have happened anyhow but politicians would use as an excuse to say they were not forewarned.

Since the case for more competition has already been made, I review below two broad components of a financial *containment* policy: improved safety of clearing and settlement systems and various ways of harnessing market forces to prevent individual institutions from failing while ensuring that the effects of any failures remain isolated and do not trigger others. I conclude with

some thoughts about how the increasing globalization of finance should shape our containment policy.

Clearing and settlement

It is vital to begin with clearing and settlement mechanisms, as they are the central nervous systems of finance and as such cannot be allowed to malfunction, especially as financial markets grow and globalize. The volume of transfers on the various systems continues to outpace the growth of the economy; and, at least as important, not only are transactions growing in size, they are also giving markets, and regulators, less time to react.

At bottom, as a Group of Thirty Task Force chaired by John Bachman reported in 1992, the key equation to associate with all clearing and settlement systems is very simple: TIME=RISK. The shorter the time between the initiation of a transaction and settlement of accounts, the lower is the risk that one of the parties may have insufficient funds when the time for settlement arrives, thus triggering a chain reaction among other parties on the system whose financial fortunes are interlinked.

As already noted, Fedwire solves the timing problem by eliminating it: settling all transactions in "real time" and guaranteeing their finality. So far, CHIPS has substituted a combination of other measures for real-time gross settlement (RTGS) to reduce its risk: tightening its membership standards, imposing limits on its members' intraday liabilities, building a reserve against losses, and so forth. Ultimately, however, if policymakers want to avoid sleepless nights, they will encourage CHIPS to take the next step and move toward RTGS, if not immediately then at least by settling more frequently than once every twenty-four hours, eventually increasing the frequency so that time lags are totally removed.

Moving in this direction is not without its costs, to be sure. The current net-settlement arrangement offers member banks free intraday credit, which they understandably enjoy, but which exposes the financial system as a whole to risk for which no one

pays *at the margin* (members do have to post collateral, but this is a fixed rather than a marginal cost of putting more transfers through the system). Several years ago, the Federal Reserve recognized that it was granting banks free "float" by letting them borrow intraday on the strength of the Fed's guarantee of settlement finality; now the Fed charges banks for the privilege. If CHIPS adopted RTGS, its member banks would also pay for intraday credit at prices determined by the market, just as many European banks must do under the RTGS systems of those countries (Eisenbeis). Alternatively, member institutions could post liquid assets as collateral to cover their largest daylight overdrafts. Once banks began paying for the privilege of running up intraday debts on CHIPS, then as a matter of parity, it should be possible for the Federal Reserve to consider dropping its guarantee of finality on Fedwire, while implementing a "true" market in intraday funds (so that all participants either must have positive clearing balances or obtain explicit loans from other institutions to cover any intraday overdraft balances). A market rate for intraday loans almost certainly would exceed the 15 basis-point-annual-rate equivalent charged by the Fed on Fedwire, as it is far below the federal funds rate banks charge each other for overnight loans.

With real-time settlement, it will still be possible for a big bank failure or other financial problem to roil the markets. But it will be much less likely that a chain reaction in the payments system would spread the shock far and wide. In effect, where the prevention-safety net paradigm tried to stick financial dominoes in glue, the competition-containment paradigm seeks to move the dominoes farther apart, so that the fall of one need not bring down all the rest. And, when the system as a whole is less vulnerable to the failure of one of its parts, regulators need not rush to treat every failure as a systemic threat and their promises not to rescue the foolish are more likely to be believed—which means that financial institutions are more likely to be careful. *Thus a system that is safer for failure may also be one in which failure is less likely to happen.*

A second set of clearing initiatives should focus on foreign exchange transactions in particular. Many U.S. banks now routinely

settle foreign exchange trades worth well in excess of $1 billion to a single counterparty every day; indeed, some institutions' exposure in foreign-exchange transactions can exceed their capital during the course of *each day* (Bank for International Settlements). Moreover, foreign-exchange transactions take longer to complete—and to settle—than those involving only domestic institutions because they are settled at different times in different countries (Crockett).

The Federal Reserve, commendably, has taken steps to address the timing risk associated with foreign-exchange transactions by extending the opening time of Fedwire each day to 12:30 a.m. (Eastern time), from 8:30 a.m., so that the system can receive and process transactions while both European and Asian markets are also open. This will do much to reduce "Herstatt risk" (payment lags due to the different hours of operation of settlement networks in different time zones). So will a related, and welcome, initiative by banks from twenty large industrialized countries which are working to create a limited-purpose bank to clear foreign-exchange transactions, one of the most important sources of risk to CHIPS. Participating banks would maintain accounts at this bank in various currencies; these accounts would be used to settle foreign-exchange transactions instantaneously.[9]

There have also been advances in reducing risks associated with the mechanisms for clearing and settling securities. Most importantly, after much deliberation, the Securities and Exchange Commission in June 1995 shortened the time for settling trades in corporate and municipal securities from five days to three days (known as "T+3"). The shorter settlement time reduces credit and liquidity risks, as well as financing costs (since trades are settled over a shorter period). The following year, in February 1996, the securities industry converted to a "same-day funds settlement system," which means that payments are made in funds that are immediately available at the time the securities are actually transferred. Also reducing clearing risks have been the execution of various cross-margining and cross-guarantee agreements among major securities and futures clearing systems, larger reserves and capital requirements at the major clearing organizations, and improvements

enabling clearing systems to better monitor the risks of their participants (Lindsey and Pecora, 1997).

Still, more could be done to wring out much of the remaining risks by moving toward even shorter settlement times, most notably next day or T+1 settlement. In fact, this is already standard for futures and options. Faster settlement is not without its costs and controversy as well. Securities firms must upgrade their backroom infrastructure to meet the faster target. And many smaller investors can be expected to object to faster settlement, which would require securities to be registered in book-entry form, thus effectively eliminating the use of paper stock certificates. Accordingly, a possible compromise would be to move to T+1 initially for larger transactions, leaving smaller trades at T+3 for the time being. Finally, accelerating securities settlement times would put the American markets even further ahead of counterparts elsewhere in the world, which are now struggling just to get to T+5 from even much longer settlement lags. While this may be cause for technological gloating, it also may exacerbate frictions between securities regulators here and in those countries.

Harnessing the market

If the prompt corrective action (PCA) provisions of FDICIA worked perfectly and all the time—so that all troubled institutions were recapitalized or sold to other parties before they became insolvent on a market-value basis—then arguably there would be little need for additional containment measures, at least with respect to banking problems. To date, however, PCA hasn't been given a stern test. The banking system as a whole is better capitalized than it has been for at least two decades and only a handful of banks have been failing each year over the past several years. A key unanswered question, therefore, is how effective PCA will be during the next economic downturn when presumably banking problems will resurface.

Will regulators be tempted to engage in forbearance again, especially if faced by the need to take over many large banks at the same

time? Even if they make every effort to avoid forbearance, will regulators nevertheless be too late in intervening because the information on which they are relying is out of date? The information problem may be especially acute with respect to derivatives, which have given banks and other financial institutions the ability to change their risk exposure within hours, if not minutes.

Given continuing rapid advances in communications and information technology, in theory, and perhaps someday in practice, regulators and private actors may be able to monitor the financial health and risk exposures of all financial institutions (not just banks) on a real-time basis, much as a doctor may use a heart monitor on a patient. But until that day arrives, and even when it does, it would advance the cause of containment and indeed of prevention if regulators found ways to harness market forces to stiffen two sets of spines: those of depository institutions to avoid excessive risks and to improve their timely disclosure of relevant financial information and those of the regulators themselves so that they will not be too easily tempted to engage again in forbearance.

In fact, bank regulators have already taken several steps in the market direction, or in the words of Federal Reserve Board Chairman Alan Greenspan, to make their rules and policies more "incentive-compatible" (Greenspan). Faced with the various ways of measuring trading risks, regulators have recently allowed (beginning January 1, 1997) large banks that engage heavily in trading activities to use their own models for estimating risk rather than mandating that they all use a uniform (and almost certainly arbitrary) model. The Federal Reserve Board has proposed for comment an even more innovative way of ensuring that large banks active in securities trading and in the derivatives market have sufficient capital to back those activities: a policy of "pre-commitment" whereby banks would periodically specify the maximum losses that they believe they might accumulate from certain of their trading activities.[10] If losses exceeded the specified amount, the bank would pay penalties, which would be made public. Assuming the Fed implements the concept, which I believe it should, and actually imposes the penalties when appropriate—a big "if"—the pre-commitment approach has several advantages.

It lets institutions themselves tailor their capital requirements, while giving them an incentive to do so carefully by releasing data on banks' chosen pre-commitment levels. And it gives the markets information about the amount of risk that an institution is expecting to incur. The policy represents the kind of thinking that can advance policy beyond inflexible, uniform requirements that are not well suited to dynamic and innovative markets.[11]

Regulators should not stop with these market-based innovations. If they want to harness market forces in a way that is not destabilizing, they should require banks belonging to the large banking organizations whose failure might generate systemic consequences—say, those with assets exceeding $10 billion—to back a limited portion of their assets with uninsured, subordinated debt (or unsecured debt that is "subordinate" to the interests of depositors).[12] A key virtue of subordinated debt is that it provides a *stable* source of discipline: its purchasers cannot "run," like depositors, but instead must wait until their debt instruments mature. Moreover, unlike shareholders who have upside potential, debtholders only have downside risk—that their principal and interest may not be paid—and thus they have a much stronger interest in encouraging banks to avoid excessively risky endeavors. Interestingly, Argentina has recently recognized these virtues and mandated that its banks include some amount of subordinated debt in their capital structures.

To be sure, banks are already allowed to count subordinated debt toward meeting part of their risk-based capital requirements, and, indeed, a number of larger banking organizations that have access to the capital markets have issued such instruments. But as long as they can do so voluntarily, large banks can avoid subjecting the expansion of their activities to a regular market test. If instead, big banks could only expand by selling additional subordinated debt in the marketplace every quarter (rather than backing expansion with additional reported earnings that add to shareholders' equity and that can be manipulated by clever accounting), they would have much stronger incentives than they do now to avoid imprudent risk taking and thus advance the objective of prevention. Equally important, because the debt of banks the markets determine to be troubled

would carry a premium interest rate observable by all, regulators could not as easily resort to forbearance by looking the other way when the banks (and their accountants) do not establish an appropriate level of loss reserves.

In many, if not most cases, private actors—including rating agencies and investors in such instruments as subordinated debt—have every bit as much, or nearly as much, information as regulators. But in some cases they don't. The failure of the Bank of New England in early 1991 provides a stark example. Not only did the bank fail to report its problems promptly to investors, but even managers *inside the company* bought stock in the bank as late as the year before its failure. They apparently were unaware of the bank's problems or regulators' severe concerns about the bank's commercial real-estate loans, in particular. As a result, there is a strong case for having regulators regularly and promptly disclose to the public the overall CAMEL ratings they assign to banks. Such a policy need not impair the ability and willingness of banking supervisors to provide frank written assessments of the banks and managers they supervise because the details behind the overall ratings would continue to be kept confidential. But I see no reason why the markets should not have the benefit of the regulators' overall numerical assessments (even if doing so would render the rating agencies' reports about publicly traded banks irrelevant).[13]

In fact, a subordinated debt requirement itself would prod market participants toward better and perhaps more timely disclosure. Because subordinated debtholders have much to lose from risky bank behavior (their investments are not insured) and only limited room to gain (the interest rate on their bonds is fixed), they would form an important constituency for timely and accurate information. They might press banks to use market values rather than historical costs in reckoning their financial health, and push them to report in much greater detail the concentrations of their risks by counterparty, region, and industry, as well as by type of loan.

There may be some who believe that more timely information about financial institutions can be destabilizing, precipitating the

contagion that policymakers so strenuously seek to avoid. The Mexican peso crisis proves otherwise. In that case, the failure to issue timely economic data created a backwash of bad news, which, when it finally hit the markets, caused a sudden rush for the exits. Indeed, having learned that lesson, the International Monetary Fund has encouraged (at the insistence of the U.S. government) countries to publish economic data more frequently and according to agreed-upon standards—and, more to the point, is also posting on the World Wide Web up-to-the-minute lists of the countries that meet those standards, along with details of the data each country provides. There is no reason why financial institutions should be treated any differently.

Finally, there may be a useful role for some limited amount of self-regulation, or more accurately, self-education. A recent Group of Thirty report recommends that representatives of the world's largest financial institutions—banks, securities firms, and insurers—develop voluntary risk-management guidelines, aimed at standardizing methods for monitoring and managing risks (Group of Thirty). Such a step would be useful in ensuring that the staff and managers have a common base of understanding about devices for controlling risk, and "rogue" traders and operators in particular, but it is unlikely it could ever do more than that, such as supervising the institutions to ensure that they actually complied with the guidelines. That job would remain within the province of regulators, who could nevertheless benefit from having a set of guidelines against which to measure the performance of the banks they examine.

What role for harmonization?

Given the increasing globalization of finance and financial institutions, and thus the possibility that financial problems in one country can spill over into others, it is understandable and welcome that regulators in this country have been working with their counterparts to exchange information, coordinate regulation and supervision, and at least in the case of bank capital standards in industrialized countries, actually to harmonize rules. As already noted, similar justifications are now being invoked to extend Basle-

like standards for bank safety and soundness regulation generally among developing and emerging-market countries as well.

It is important, however, to recognize a key distinction between *minimum* and *harmonized* standards. The desire to avoid financial externalities only justifies minimum standards—that is, a base set of rules that ensure a minimum degree of safety—or failing that, then coordination of policy action. The Basle standards, however, were also intended to harmonize formerly disparate capital standards to ensure a *level playing field*—so that banks in less restrictive regimes would be unable to take advantage of greater leverage and thus a lower cost of capital, to the competitive detriment of banks headquartered in other countries. While this goal has not been completely attained—primarily because important differences between countries in tax rules and accounting standards remain—the playing field for banks is measurably more level across countries than it was before the Basle standards were set.

In some cases, the market can lead or encourage harmonized outcomes—without proactive leadership by governments—where regulated activities can easily move across national boundaries in response to relatively small differences in regulatory regimes. A good example is margin requirements on stock-index futures, which are traded not just in the United States, but in London and Asian markets. Given the ease with which traders and their brokers can and do move to markets in different countries, U.S. exchanges are heavily constrained in their ability to set margins that are significantly higher than those in other markets where U.S. investors also feel secure. Similarly, Japanese policymakers are feeling pressed to open up their financial markets to greater competition because traders are moving to other Asian financial centers such as Singapore and Hong Kong.

To what extent, therefore, should U.S. policymakers in the future seek to harmonize our rules with those of other countries as a way of advancing the cause of containment? Some actions, such as real-time settlement for CHIPS, do not require international harmonization or even coordination. Others, such as implementing

a pre-commitment approach to requiring capital for trading purposes or mandating large banks to issue subordinated debt, could be placed on the international negotiating agenda, since they are modifications to existing capital standards. I believe, however, it would be a mistake to permit any desire for a "level playing field" to stand in the way of improving the resiliency of the U.S. financial system. We should do so on our own and if other countries want to follow, fine (Herring and Litan).

The international nature of markets, and the rapid movement of capital and contracts between them, nevertheless make a compelling case for attempting to harmonize, or at a minimum coordinate, disclosure and accounting rules, a recommendation advanced in a recent Group of Thirty report as well (Group of Thirty). Common accounting rules would significantly enhance transparency and allow investors and regulators around the world, for the first time, to make truly valid comparisons of the financial health of institutions. This would advance the cause of both efficiency and containment. It would also, by the way, facilitate the listing of foreign bank shares on our securities exchanges, which would further solidify the leading international role played by our markets.

I recognize the difficulties involved in achieving consensus on such standards, let alone on mandating their application to all banks. One possible interim compromise is to apply any minimum standards that are developed—which the International Accounting Standards Committee is actively working on—initially only to "internationally-active" banks, and then only as a *supplement* to current national rules.

The Group of Thirty report offers two additional recommendations, prompted by the recognition of the increasingly important role played by global financial firms. One set of suggestions, with which it is difficult to quarrel, is for governments to harmonize their legal rules for collateral, insolvency, and netting arrangements—all with a view to facilitate the orderly resolution of failed globally active institutions and to minimize any cascade or contagion effects that might flow from the uncertainty in the arrangements that now exist.

The other recommendation is to formally or informally move to a model of "umbrella supervision" of internationally active banks. Under this model, while a bank would be subject to supervision of its constituent parts in each host country, its home country regulator would be responsible for overseeing all of the banks' global operations, or presumably all cross-border loans as well as foreign currency derivatives, wherever they may be booked. The Group also urges every globally active bank to commission annual external audits of their worldwide operations.

I find it difficult to assess the practicality or the novelty of the umbrella supervision recommendation. My understanding is that since the BCCI affair, bank regulators have intensified their coordination and supervision of internationally active banks, and recently, leaders in G-7 countries have endorsed even more information-sharing among their financial regulators. It is unclear to this outside observer, therefore, how much beyond existing practices an umbrella approach would extend, and how much improvement an umbrella approach could actually produce. And if such an approach were adopted, it is not clear how much "on-the-ground" examination of international banks a home country supervisor would have to conduct in other countries, or whether the umbrella supervisor could simply rely on the examination reports from host countries. My guess is that the Group of Thirty would rely on the latter, but if so, it is not then so clear how much value is added by labeling the home country regulator the "umbrella supervisor."[14]

Nonetheless, the Group of Thirty makes a valid point that in a world of financial conglomerates active in all phases of the financial services industry, it will be essential for at least one organization to have some kind of umbrella responsibility for supervising the entire entity. Such supervision need not duplicate the monitoring of the health of each of the constituent parts of the organization (the bank, the securities firm, the insurer, and so forth), but instead should concentrate on intercompany transfers to ensure that they are not violating regulatory guidelines.

Conclusion

Time and circumstances now call for a shift in emphasis toward a new model of financial policy regulation: one that moves away from the post-Depression "prevention-safety net" model toward one that features "competition-containment." This does not mean abandoning the worthy goal of prevention nor jettisoning the safety net. But it does and should mean paying greater attention to promoting competition, while relying on a combination of prompt corrective action, elimination of the time lags remaining in clearing and settlement systems, and the implementation of constructive ways of harnessing market forces and market-like devices to both prevent and contain financial misfortunes.

Author's Note: This paper draws on a report I have prepared (with Jonathan Rauch) for the U.S. Treasury Department on the future of the financial services industry and its regulation. The views expressed here are my own and not necessarily those of the Brookings Institution (its trustees, officers, and staff) or of the U.S. Treasury Department.

Endnotes

[1]By contrast, estimated losses in certain Latin American countries have ranged between 12 percent and 55 percent of country GDP; in Africa, between 10 percent and 25 percent; in Bulgaria and Japan, 10 percent; and in Hungary, 14 percent.

[2]The definition is adapted from Bartholomew, Mote, and Whalen (1997).

[3]At the end of 1996, the total outstanding "notional" amount of derivatives held in all U.S. commercial banks reached $20 trillion, more than double the amount four years earlier. Just eight banks accounted for 94 percent of the total bank volume.

[4]Although this risk is mitigated by various buffer devices, including collateral requirements and "netting arrangements" between counterparties (which balance out contracts counterparties may have with each other and thereby reduce overall net credit exposure), it is not clear whether particular netting arrangements will be enforceable in all jurisdictions. Moreover, derivatives contracts often contain "early termination" clauses, which the counterparties may be able to invoke in a crisis. And so the default of a major player in the market could expose that player's counterparties to heavy losses. Perhaps more important, default by a large institution could trigger any number of other dealers to withdraw from the market entirely to wait for the dust to settle—in the meantime, drying up liquidity in the market.

[5]Moreover, the foreign exchange crisis itself was a direct product of troubles in Mexico's banking system, which the government attempted to paper over by substituting on a massive scale dollar-indexed debt (tesobonos) for peso-denominated securities. This effort kept peso interest rates down and prevented even more bank borrowers from defaulting on their loans, but it eventually contributed to capital flight to the dollar instead as Mexico's foreign currency reserves dwindled (Calvo and Goldstein).

[6]Equity funds now maintain a cash reserve of 3 percent to 10 percent of assets and large funds in particular generally have arranged for backup lines of credit with banks.

[7]The NYSE, in particular, is now capable of handling daily trading volume of almost 2.5 billion shares, or more than four times the peak volume during the 1987 crash, with plans to increase capacity to three billion shares before the end of the year.

[8]Out of an abundance of caution, one could justify some phasing of any authority to combine banking and commercial activities. One approach that the Congress is currently debating is to limit the percentage of revenue that any combined entity can earn from banking. In addition, the same cautious approach could justify limits on what activities banks can own as subsidiaries, such as the "financial only" restrictions of the Comptroller's operating subsidiary rule and even limitations against such proven risky activities as real estate development (which are written into the financial modernization bill passed by the House Banking Committee during the summer of 1997).

[9]Chase Manhattan is working with other international banks on another innovative idea—creating a foreign exchange derivative through which the counterparties would only exchange the difference in the relative value of two currencies between the time of the transaction and the time of settlement. This netting procedure could vastly reduce the amounts at risk in foreign exchange contracts where the parties are in different continents and thus in very different time zones (the situation which gives rise to "Herstatt risk").

[10]Under the Fed's proposal, pre-commitment would apply to banks' dealings in securities, foreign exchange, and derivatives in their "trading accounts" (instruments bought to hedge the trading of the underlying securities). Derivatives related to the hedging of risks in the rest of the bank—for example, in the traditional lending activities of the "bank" proper—would not be covered by the pre-commitment approach (just as they are not covered by the current "market risk" amendment to the capital rules).

[11]Because regulators may be reluctant, for good reason, to impose penalties on institutions when they face severe losses, the Fed's proposal explicitly contains a "systemic risk" exception, much like FDICIA's exception to the rule that uninsured depositors are not to be protected against loss. The pre-commitment approach will not work unless regulators resort to this exception sparingly.

[12]For an early advocacy of such a requirement, see Horvitz.

[13]Commendably, the FDIC has recently made available on-line call report data for all commercial banks. This is only a step away from actually releasing the aggregating CAMEL ratings.

[14]Fed Chairman Alan Greenspan has also raised the possibility that designating a formal umbrella supervisor or information coordinator could mislead the market as to how much knowledge such an individual or institution has about specific banks. In addition, he has indicated that the proposal risks expanding the safety net to overseas subsidiaries because market participants would expect regulators to support these operations in times of difficulty (Seiberg).

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