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ON THE NEED FOR AN INTERNATIONAL LENDER OF LAST RESORT

STANLEY FISCHER

INTERNATIONAL ECONOMICS SECTION

DEPARTMENT OF ECONOMICS
PRINCETON UNIVERSITY
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International Economics Section

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CONTENTS

ON THE NEED FOR AN INTERNATIONAL LENDER OF LAST RESORT

The frequency, virulence, and global spread of financial crises in emerging-market countries in the period from 1994 to 1999,[1] coupled with the 1998 U.S. congressional debate about the increase in International Monetary Fund (IMF) quotas, has led to the most serious rethinking about the structure of the international financial system since the breakdown of the Bretton Woods system in 1971 (De Gregorio et al., 1999; Hills, Peterson, and Goldstein, 1999; Meltzer, 2000).

As a result of this reflection, governments and the international institutions have begun to put in place a series of changes designed to strengthen the international financial system. In emerging-market countries, the emphasis is being put on improving economic policies with respect to, among other considerations, the choice of exchange-rate system, debt management, corporate governance, the strengthening of

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This essay was originally prepared for delivery at the joint luncheon of the American Economic Association and the American Finance Association in New York on January 3, 1999. A revised and shortened version was published in the *Journal of Economic Perspectives* in the fall of 1999. I have in places drawn on that version for this essay and would like to thank Timothy Taylor for his excellent editing in the *JEP*. This present, more complete, version has been revised as of April 2000 to reflect developments in the international monetary system and clarifications of the issues since the end of 1998. I am grateful to my MIT colleague Charles Kindleberger for sparking my interest in this question many years ago, for his support, and for the pleasure provided by a fresh reading of his book *Manias, Panics, and Crashes* ([1978] 1996). I also thank Michel Camdessus for his advice and support; Mervyn King for helpful discussions during the writing of the essay; Olivier Blanchard, Jack Boorman, Guillermo Calvo, J. Bradford DeLong, Peter Diamond, Eduardo Fernandez-Arias, Curzio Giannini, Charles Goodhart, Stephen Grenville, Bengt Holmstrom, Alexandre Kafka, Arend Kapteyn, Peter Kenen, Martin Mayer, Allan Meltzer, Frederic Mishkin, Jacques Polak, Andrei Shleifer, Robert Solow, John Spraos, Onno Wijnholds, and David Williams for helpful comments and discussions; and Claire Adams for excellent research assistance. The views expressed in this essay are mine and do not necessarily reflect those of the International Monetary Fund.

[1] Crises occurred in 1994 in Mexico, with the subsequent tequila contagion in Latin America and for a day or two in East Asia; in 1997 and 1998 in East Asia, with contagion spreading across the region; and in 1998 in Russia, which was affected by Asian contagion and from which contagion spread to the rest of the former Soviet Union and to Eastern Europe, as well as to Latin America, especially to Brazil.

banking and financial systems, and the ability to deal with reversals of capital flows. In the industrialized countries, where the capital flows originate, measures are being considered to improve the regulation of, and information about, the activities of international investors, including highly leveraged institutions, among them, hedge funds. Two new international fora have been established for this purpose. One is the Financial Stability Forum, which includes officials from the Group of Seven (G-7) countries, representatives from the international financial institutions and from banking, insurance, and the securities markets, as well as accounting regulators and members of professional institutions. The other is the Group of Twenty (G-20), consisting of officials of the G-7 plus other systemically important countries, including emerging-market countries. No less important, at the end of 1998, the leading central banks, in recognition of the feedback between the emerging-market and the industrial economies, cut interest rates, taking actions in the interests of their own countries that helped stabilize the world economy. The international financial institutions are seeking to improve surveillance, including surveillance of short-term capital flows; to encourage the adoption of banking and other international standards in emerging-market countries and monitor their implementation; to encourage the development of standards in areas where they do not exist; to improve the information provided to markets and the public more generally; and to consider making changes in their institutional lending practices by providing guarantees and, possibly, by precautionary or contingency lending (for details, see Fischer, 1998).[2]

The vision that underlies most proposals for reform of the international financial system is that the international capital markets should operate at least as well as the better domestic capital markets. To say this is to emphasize the point that volatility and contagion cannot be banished, because asset prices inevitably move sharply, and there are significant correlations among the prices of assets, particularly in related industries. But although volatility and contagion will always be with us, we can surely do better in reducing the frequency and intensity of emerging-market financial crises, as well as the extent of contagion, than we did during the 1994–99 period.

It is natural at such a time to seek guidance in the debates leading up to the creation of the Bretton Woods system. Those debates shed little light on the present difficulties, however, because the Bretton Woods

[2] The World Bank was originally expected to play a more active role than it so far has in providing guarantees for international investments.

participants were, for the most part in their work on the IMF,[3] dealing with current-account problems,[4] whereas recent crises have been driven by the capital account, by sudden and massive reversals of capital flows. Rather, as we consider how to make the global capital markets operate better and how to reduce the frequency and virulence of financial crises, I would like to revisit an older literature on the lender of last resort, a literature that emerged from the financial crises of the last century.

We are all familiar with the classic contribution of Walter Bagehot ([1873] 1906), whose most famous lesson is that *in a crisis, the lender of last resort should lend freely, at a penalty rate, on good collateral*. But thinking on this issue neither started with Bagehot nor ended with him. As many have pointed out, Henry Thornton's 1802 (1978) analysis of monetary policy and the role of lender of last resort is remarkably sophisticated (Humphrey and Keleher, 1984). Sir Francis Baring ([1797] 1967) may have been the first to refer to the concept in the British banking literature: he refers to the Bank of England as the "*dernier ressort*," a term that Kindleberger ([1978] 1996, p. 146) explains is the legal jurisdiction beyond which it is impossible to take an appeal (the court of final appeal). Contributions in the last two decades, in particular, have sought to build on and to develop the analysis of the lender-of-last-resort role. Notable among these are discussions by Solow (1982), Mundell (1983), Benston et al. (1986), Garcia and Plautz (1988), Schwartz (1988), Goodhart (1995), Meltzer ([1986] 1995), Kindleberger ([1978] 1996), Goodhart and Huang (1998), Holmstrom and Tirole (1998), and Freixas (1999). In the international context, following Kindleberger's work two decades ago, recent contributions by Calomiris (1998), Calomiris and Meltzer (1998), Capie (1998), and Giannini

[3] As noted by Meltzer (1999), the World Bank was established to deal with the anticipated shortage of capital flows for reconstruction and for development.

[4] This statement holds even though the IMF's Articles of Agreement contain provisions relating to the capital account. These specify (Article VI) that the IMF should not finance "a large or sustained outflow of capital," and that it can ask countries to impose controls to prevent such movements. The capital account was a point of contention in the early debates between the U.S. and British treasuries. A 1943 joint statement of experts on what later became the IMF contains in Section 9 (Keynes, [1943] 1980, p. 385) alternate wording by the two sides, with the U.S. versions being more accepting of the possibility of the Fund's financing some capital movements.

Although the British originally argued for far larger quotas in what later became the IMF than did the U.S. Treasury, the British concerns were about expected current-account problems, not capital-account movements (see, for instance, Keynes, [1943] 1980, p. 216; see also Boughton, 1998).

(1999), discuss the potential role of the IMF as a lender of last resort, with Forrest Capie arguing that the Fund's inability to create money makes it impossible for the IMF to operate as a lender of last resort.[5]

The present essay begins by reviewing the case for a lender of last resort in the domestic economy and the set of rules that the lender of last resort is supposed to follow. It then discusses the moral-hazard problem that is created by the existence of a lender of last resort, as well as measures to mitigate it.[6] It argues that the international system needs a lender of last resort. It also argues that the IMF, although it is not an international central bank, has undertaken certain important lender-of-last-resort functions within the current system, generally acting in concert with other official agencies, and that this role can be made more effective within a reformed international financial system.

1 The Domestic Lender of Last Resort

The lender-of-last-resort role of the central bank is associated with the prevention and mitigation of financial crises. A financial crisis is typically a sudden actual or potential breakdown of an important part of the credit system. Financial crises and panics have been taking place for centuries (Kindleberger, [1978] 1996; MacKay, [1841] 1996); they are associated with a loss of confidence in the standing of some financial institutions or assets, and because the chain of credit is based on tightly interlinked expectations of the ability of many different debtors to meet payments, they can spread rapidly through the financial system and have significant effects on the behavior of the real economy if unchecked. In economic theory, panics can be modeled as cases of multiple equilibria,[7] possibly dependent on herd behavior.

Surprisingly, there is no accepted definition of the term "lender of last resort,"[8] and there is no general agreement about what the lender of last resort should do. The more traditional Bagehot conception, as

[5] See also the analysis of the Asian crisis in Mishkin (1999) and Radelet and Sachs (1998). Claassen (1985) provides an interesting discussion of the roles for international and domestic lenders of last resort in an international context.

[6] Hirsch (1977) calls this problem "the Bagehot problem."

[7] The classic reference is Diamond and Dybvig (1983). For a related model in the international context, see Chang and Velasco (1998).

[8] In some formulations, the lender of last resort is expected to prevent the problems of an individual institution from causing a decline in the aggregate money supply (Kaufman, 1991, quoting Humphrey and Keleher, 1984).

summarized and developed by Meltzer ([1986] 1995, p. 83) states that "the central bank is called the lender of last resort because it is capable of lending—and to prevent failures of solvent banks, must lend—in periods when no other lender is either capable of lending or willing to lend in sufficient volume to prevent or end a financial panic." Meltzer lists (pp. 83–84) five main points, the first four derived from Bagehot:

- The central bank is the only lender of last resort in a monetary system such as [that of the United States].

- To prevent illiquid banks from closing, the central bank should lend on any collateral that is marketable *in the ordinary course of business when there is no panic* [emphasis added]. It should not restrict lending to paper eligible for discount at the central bank in normal periods.

- Central-bank loans, or advances, should be made in large amounts, on demand, at a rate of interest above the market rate. This discourages borrowing by those who can obtain accommodation in the market.

- The above three principles should be stated in advance and followed in a crisis.

- Insolvent financial institutions should be sold at the market price or liquidated if there are no bids for the firm as an integral unit. The losses should be borne by owners of equity, subordinated debentures, and debt, by uninsured depositors, and by the deposit insurance corporations, as in any bankruptcy proceeding.

Meltzer's statement agrees, for the most part, with other formulations, but it does not emphasize the view, summarized by Humphrey (1975), for example, and attributed to Thornton ([1802] 1978), that the overriding objective of the lender of last resort should be to prevent panic-induced declines in the money stock,[9] and that there is thus no conflict between its monetary control and its duties as lender of last resort.[10] In some more recent formulations, this view has been ex-

[9] There is no reason to think that Meltzer would disagree with this precept. In private conversation, he has indicated that he sees no advantage to the rule that the central bank should lend only to the market rather than also to individual institutions on occasion if necessary.

[10] Humphrey (1975) also notes Bagehot's view that the lender of last resort exists not to prevent the occurrence of financial shocks, but rather to neutralize their impact. It is not clear how this coexists with the maxim that the lender-of-last-resort rules should be spelled out in advance; possibly it relates to the position advanced by Goodfriend and King (1988) that the central bank should not have a banking (supervisory) policy role.

tended to the precept that in the event of a panic, the central bank should provide liquidity to the market, but not to individual institutions.

I want now to consider six questions: (1) Has the central bank been or is it now the only lender of last resort? (2) Must the lender of last resort have the ability to create high-powered money? (3) Should the central bank only lend against collateral that is good *during noncrisis periods* (a critical notion)? (4) Should there be a penalty rate? (5) Should the lender of last resort lend to the market but not to individual institutions (the Thornton-Humphrey view)?[11] and (6) Should the principles of lender-of-last-resort lending be stated in advance?

- First, is the central bank the only lender of last resort? As a historical matter, no. The literature describes two other institutions that fill this role: (1) the *crisis lender*, which provides the financing to deal with a crisis; this financing may be provided to the market or to individual institutions, and (2) the *crisis manager*, which takes upon itself the responsibility for dealing with a crisis or potential crisis, whether or not it itself lends for that purpose. At times, institutions such as the U.S. Treasury, and even private establishments, such as clearing houses—and in 1907, J. P. Morgan—have played one or both of these roles (Kindleberger, [1978] 1996, pp. 133–135).[12]

Let me expand on the role of the crisis manager. In a panic, it is necessary to find some means for dealing with the collective-action problem. A panic is the realization of a bad equilibrium when a good equilibrium is possible, and it is necessary in such situations for some agency or group of institutions to take the lead in trying to steer the economy to the good equilibrium. This can be done in two ways. First, the crisis lender can, through its lending activities, act as a leader, thereby inducing or allowing others to follow in a manner that mitigates or prevents the crisis. Second, a crisis manager can play a facilitating or coordinating role to encourage other agents or institutions to act in the right way, for instance by their extending a loan to an institution the

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This view appears to be shared by Schwartz (1988) and might have been shared by Bagehot had he considered such a role.

[11] Goodhart and Huang (1998) argue that to adopt this view is to reject the notion of lender of last resort.

[12] Although some have pointed with approval to the role of clearing houses in financial panics, note Kindleberger's quotation (p. 134) from Jacob Schiff in 1907: "The one lesson we should learn from recent experience is that the issuing of clearinghouse certificates in the different bank centers has also worked considerable harm. It has broken down domestic exchange and paralyzed to a large extent the business of the country."

failure of which could have systemic consequences. If authority and access to resources are necessary for assuming this coordinating role, a treasury may be as able as a central bank is to act as crisis manager. In many countries, the central bank is formally charged with the responsibility for maintaining the stability of the financial system, and it therefore tends to act as crisis manager (as, for example, in the Long-Term Capital Management [LTCM] case). But although the central bank is generally both the crisis manager and the crisis lender, neither role *must* be carried out by the central bank.[13]

• Second, does the lender of last resort need the ability to create high-powered money? There is no question that the ability to create money helps, most obviously when a panic takes the form of a run from bank deposits into currency. In such a case, the central bank can create the currency needed to deal with the panic, and at no first-round cost to the taxpayer. However, as emphasized by George Kaufman (1988), Anna Schwartz (1988), and others, panics caused by a demand for currency are rare, and many banking problems result in shifts of deposits among banks, from those deemed unsound to those thought to be healthy.[14]

More generally, a panic may take the form of a run—possibly enhanced by contagion—from the liabilities of one set of institutions to those of another. In this case, it may be possible to recirculate the liquidity from the institutions gaining high-powered money back to those losing it. In principle, this can be done by the market if it is able to distinguish the merely illiquid from the insolvent companies. Still, and this is a critical point, because the line between solvency and liquidity is not determinate in a crisis (it depends on how well the crisis is managed), the task of distinguishing insolvent from illiquid becomes more difficult, and an official lender of last resort is likely to be needed to help restore normalcy.

The central bank is better equipped to deal with such a challenge than is an institution that cannot create high-powered money, not least because rapid intervention is frequently necessary in order to stem a crisis and the central bank is best placed to intervene rapidly. It is possible, however, to set up an agency to deal with potential banking-sector problems and to endow it with sufficient funds—perhaps from the

[13] As a definitional matter, I assume that the term "lender of last resort" refers to the institution that is both the crisis lender and the crisis manager; I use the terms "crisis lender" and "crisis manager" when the functions are separated.

[14] Accordingly, Schwartz argues that the central bank should act as lender of last resort only in the event of a run from bank deposits into currency.

treasury—to cover the anticipated costs of normal crises. In any case, the costs of significant financial-system difficulties will one way or another be borne by the fiscal authority, either explicitly or implicitly, in the form of lower central-bank profits over an extended period of time.[15]

We should also note that in dealing with banking crises, the lender of last resort has more often acted as crisis manager—that is, as coordinator, without putting up its own funds—than as lender. Charles Goodhart and Dirk Schoenmaker (1995) show that in the twenty-year period ending in 1993, taxpayer or deposit-insurance money was used in over half of the 120 bank-rescue packages covered in their study—in part, because the central bank simply did not have the resources that were required to deal with the banking problem.

All this is straightforward, provided the country in question has a floating exchange rate. We should recall, however, that at the time Bagehot's *Lombard Street* ([1873] 1927) was written, the Bank of England was bound by gold-standard (or currency-board) rules, and the bank did not have the ability to create gold. It did not, moreover, have sufficient gold to meet all the potential demands on Britain's gold reserve—should there be what was then called an "external drain," a demand for gold to export. It frequently had to borrow from the Banque de France (and vice versa). Nonetheless, Bagehot enjoined the bank to act as lender of last resort. In practice, during the three crises preceding *Lombard Street*, the Bank of England was given permission to break the gold-standard rule, and because Bank of England credit was in the event accepted as being as good as gold, it managed to stay the panics. The key was not the legal right to create high-powered money, but the effective ability to provide liquidity to those who wanted it. That function could also be exercised by other institutions the credit of which was accepted in preference to the liabilities of institutions in trouble, for instance, in the United States, the U.S. Treasury.

The question of a lender of last resort arises in similar forms today in countries with currency boards. If the question is how to deal with domestic financial institutions that may suffer liquidity problems, one solution, adopted in Bulgaria, is to set up an agency endowed with sufficient resources to lend in the event of a panic or banking-sector

[15] In principle, not all financial crises need ultimately to be costly to the public sector. Indeed, if the lender of last resort steps in in the midst of a pure panic, it should expect to come out ahead. Apparently, both the Swedish and Norwegian bank-restructuring agencies established during the crises of the early 1990s have come close to meeting this criterion (I am indebted to my colleague Stefan Ingves for this information).

problem. In Bulgaria, the banking department of the central bank is assigned the task of (limited) lender of last resort.[16] If the problem is how to deal with a potential external shock that puts pressure on the domestic banking system, then the country may either hold excess foreign-exchange reserves or, as in the case of Argentina, borrow from the markets and the official sector and establish international lines of credit. In these cases, the private- and public-sector lenders to the central bank are acting together as the country's lender of last resort.[17] More generally, a country seeking to maintain a fixed exchange rate will need foreign reserves or access to foreign financing to deal with potential external shocks.

In sum, in a modern system, with a flexible exchange rate, the central bank is best placed to operate as lender of last resort, because it can create liquidity as needed. But although this ability is desirable, it is not an essential prerequisite for a lender of last resort, particularly one acting as crisis manager. In a fixed-rate system, the central bank is well placed to deal with what used to be called an internal drain, but not necessarily well placed to deal with external shocks.

• Third, why does Bagehot insist that the lender of last resort lend against collateral, and that the test be whether the collateral is good in normal times? The availability of collateral is a rough but robust test of whether the institution in trouble is likely to be solvent in normal times.[18] By applying this test, the lender of last resort avoids the need to form a judgment on the solvency of the institution applying for liquidity, while retaining the capacity to operate at the speed necessary to stay a panic.[19] At the same time, by basing the decision to lend on the availability of acceptable collateral, the lender of last resort reduces the moral hazard that the potential borrower would take excessive risks in its portfolio by holding assets that would not be accepted as collateral.

[16] Domingo Cavallo, the former finance minister of Argentina, once remarked that one of the benefits of a currency board is that the fiscal consequences of what are thought to be monetary-policy actions become transparent.

[17] The question may arise of why there is any need for financing if the rules of the currency board are strictly applied. The answer is that the monetary authority may want to mitigate the adverse effects on the banking system and the economy of a massive reduction in the money stock caused by a large external shock.

[18] This argument is very similar to the real bills doctrine. It differs from it, however, in specifying the equilibrium within which the quality of the claims is to be judged.

[19] In September 1866, describing the Overend crisis in May, the governor of the Bank of England said, "We did not flinch from our post . . . we made advances which would

The requirement that the collateral be good *in normal times* is the critical insight. Bagehot's implicit view is that there is a good, normal, equilibrium toward which the lender of last resort is trying to steer the system. By urging lending on the basis of the value of collateral in normal times, he ensures that the lender of last resort does not allow the panic in the market to become self-fulfilling. The further suggestion that the rules of collateral be applied generously goes in the same direction, albeit at the cost of increasing moral hazard.[20]

• Fourth, should there be the penalty rate? The penalty rate is intended to limit the demand for credit by institutions that are not in trouble; it can be interpreted as one of the ways of dealing with borrower moral hazard, the risk that financial institutions will take excessive risks in normal times, secure in the knowledge that they will be able to borrow cheaply in difficult times.[21] But we need to ask: relative to what rate is the penalty? Following the logic that the lender of last resort should try to achieve the good, nonpanic, equilibrium, the penalty must be *relative to the interest rate during normal times*. It is not necessarily a penalty rate relative to the rate at which institutions would lend to each other in the market during a panic. In practice, the lender of last resort has frequently lent at a nonpenalty rate (Giannini, 1999).

• Fifth, should the lender of last resort lend only to the market, and not to individual institutions? This Thornton-Humphrey precept presumably is designed to help deal with the moral hazard of official lending to individual institutions, which might be inappropriately saved from bankruptcy by such lending. On this view, given the provision of

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hardly have been credited . . . before the Chancellor of the Exchequer was perhaps out of his bed we had advanced one-half of our reserves. . . . I am not aware that any legitimate application for assistance made to this house was refused" (quoted in Clapham, 1944, pp. 283–284).

[20] In a famous passage bearing on this point, Bagehot ([1873] 1906, p. 53) quotes the Bank of England in 1825: "We lent it by every possible means and in modes we had never adopted before; we took in stock on security, we purchased Exchequer bills, we made advances on Exchequer bills, we not only discounted outright but we made advances on the deposit of bills of exchange to an immense amount, in short by every possible means consistent with the safety of the bank, and we were not on some occasions over-nice."

[21] Lloyd Mints (1945, p. 191), however, attributes Bagehot's advocacy of a high lending rate to his view that internal and external drains typically accompany each other; the high rate was designed to stop the external drain, and lending freely would stop the internal drain—a reading that is consistent with Bagehot. (This discussion bears on the controversy about the interest-rate policy that is appropriate during a currency crisis.)

sufficient liquidity to the markets, the private sector will be able to decide which institutions should be saved. This worthy idea should be followed when possible, as it was the day after the 1987 stock market crash, which posed a generalized threat to the market, rather than a specific threat to individual institutions. The precept cannot be accepted as a general rule of conduct for the lender of last resort, however, given the externalities that may follow from the failure of a large institution and the uncertainties during a panic about subsequent market conditions and thus about which institutions should survive.

• Sixth, should the principles of lender-of-last-resort lending be stated in advance, as Bagehot wanted? The notion is that the knowledge of the availability of lender-of-last-resort facilities in the event of a crisis will reduce the incentive to run on otherwise healthy institutions, just as the availability of deposit insurance will prevent runs. Another tradition, however, that of *constructive ambiguity*, has become more widely accepted. Proponents of constructive ambiguity fear that the existence of the lender of last resort creates moral hazard, and they therefore seek to leave potential borrowers in doubt as to whether they will be able to borrow if in trouble. The uncertainty makes lenders more likely to exercise caution in their lending and portfolio decisions, but it also makes them more likely to withdraw their lines of credit sooner if they anticipate a crisis.

Which is the right view: spelling out the rules or constructive ambiguity? This question leads us deep into issues of moral hazard, to which I now turn.

2 Moral Hazard

"'Moral hazard' . . . refers to the adverse effects, from the insurance company's point of view, that insurance may have on the insuree's behaviour" (Guesnerie, 1987, p. 646).[22] The standard but extreme example is that of an individual with fire insurance who burns down his property; the less extreme example is that of an insurance holder who takes less care than he otherwise would to prevent the fire against which he is insured.

[22] As noted by Guesnerie, modern economic terminology uses the term "moral hazard" to mean the unobservability of contingencies about which information is needed to design first-best efficient contracts; to remove the value judgment suggested by "moral hazard," the term "hidden actions" is sometimes used instead. The literature also discusses "hidden knowledge" models; the case of "adverse selection" occurs when the knowledge is hidden before a contract is signed (see Tirole, 1988, and Kreps, 1990, for further details and models).

It is important in considering moral hazard to recognize that in the presence of hidden actions, there is no perfect solution to the problem. It will not generally be optimal in a situation of risk to suppress moral hazard entirely. Rather, the optimal solution will generally combine the provision of insurance with measures to limit moral hazard. One aspect of the solution is "the use of incentives—structuring the transaction so that the party that undertakes the actions will, in his own best interests, take actions that the second party would (relatively) prefer. For example, fire insurance is often only partial insurance so that the insuree has a financial interest in preventing a fire" (Kreps, 1990, p. 577). Partial insurance, risk sharing, is a general feature of the solutions to problems involving moral hazard. So is the use of regulations to try to reduce the risks, for instance by requiring buildings to be equipped with smoke detectors and water sprinklers.

In the case of the domestic lender of last resort, moral-hazard problems could arise with respect to both the actions of managers of financial institutions who expect to receive loans from the lender of last resort during a crisis and the actions of investors in those financial institutions. We have to be careful, however. If the lender of last resort were able to distinguish perfectly and to intervene only to stop unwarranted panics, allowing institutions that would be insolvent in normal times to fail, the managers of these institutions and their investors would face the right incentives. But because the lender of last resort is unlikely to be able to distinguish perfectly between warranted and unwarranted crises, and because deposit insurance and the too-big-to-fail doctrine create the presumption of moral hazard, measures that attempt to offset the moral hazard of both managers and investors will be helpful.

How do we, and how should we, deal with moral-hazard problems in the domestic economy that may arise from both deposit insurance and the presence of a lender of last resort? First, we should have official regulation;[23] second, we should encourage private-sector monitoring and self-regulation; third, we should impose costs on those who make

[23] Regulation was not part of Thornton's or Bagehot's solutions to the moral-hazard problem. Rather, as Giannini (1999) argues, bank regulation grew out of the banking failures of the Great Depression and was later seen as a partial solution to the moral-hazard problem. Although this is true of the United States, the supervisory role of the central bank in Europe can be more closely tied to the fact that central banks often started as private banks, which then became—in Goodhart's term—the "secretary of the club," the crisis manager, and, eventually, the rule setter. (I am indebted to Mervyn King for this point.)

mistakes, including, when appropriate, through enforced bankruptcies. Let me address these in turn.

First, to be eligible for the use of the discount window, banks are expected to obey restrictions on their activities that are designed to limit the riskiness of their portfolios.[24] Although some banks have been allowed to apply their own risk-control systems, there is no disagreement on the necessity for controls on their risk-taking activities and little disagreement on the need for official-sector monitoring in the form of bank supervision. Although regulation extends across the board in the financial markets, the relative reliance on the provision of information to investors increases as institutions become less critical to the operation of the payments system. These regulations are intended to limit the likelihood of panics and the need for a lender of last resort, while not preventing well-informed risk-taking by investors.

Second, the system seeks to encourage private-sector monitoring, particularly by sophisticated investors. The limit on the size of bank accounts covered by deposit insurance is one such device, albeit one that—because of the practice of too big to fail—rarely operates when large institutions get into trouble. In addition, when the lender of last resort as crisis manager arranges a rescue package financed by the private sector, it encourages more careful future monitoring by the financing institutions and similar firms.

Third, the lender of last resort should seek to limit moral hazard by imposing costs on those who have made mistakes. Lending at a penalty rate is one way to impose such costs. Short of bankruptcy, losses incurred should be borne by equity holders and holders of subordinated claims on the firm, and management should generally be replaced.[25] Insolvent institutions should be sold or liquidated, with losses borne in the first instance by owners, and then in reverse order of legal precedence. All this is made much easier by the existence of bankruptcy laws, which help ensure that workouts for insolvent firms are carried out in an orderly way. In general, the crisis manager is expected to take

[24] Some have supported narrow banking as the solution to the moral-hazard problems created by both deposit insurance and the lender of last resort. Banks have demonstrated great ingenuity, however, in extending the range of their liabilities that can function as a means of payment, so that the narrow banks would continually tend to become broader. In addition, the too-big-to-fail problem would result in the lender of last resort occasionally acting to save large near-bank institutions.

[25] In some cases, the current managers may have specialized expertise that makes them difficult to replace.

account of the moral-hazard impact of its actions and is frequently judged on those grounds.

How well do these devices to limit moral hazard work? A first judgment, based on the frequency of domestic financial crises around the world during the last two decades, is not very well. But as we consider this question more carefully, we should remind ourselves that moral hazard is something to be lived with and controlled, rather than fully eliminated; that some crises are bound to happen in any system that provides appropriate scope for private-sector risk-taking; that, as proved by the long history of financial crises well before there were lenders of last resort and deposit insurance, some financial crises are caused by simple errors of judgment and waves of euphoria and depression, rather than by moral hazard; and that the right question is how well the financial system and the economy operate in such a regime, compared with a relevant alternative such as one in which there is neither a lender of last resort nor deposit insurance. Although I am not aware of careful studies that have attempted to make this more sophisticated judgment, it is fair to guess that such studies would conclude that we must in future do a better job of controlling moral hazard in the domestic financial system.

I return now to the issue of constructive ambiguity as compared with specific rules for the operation of the lender of last resort. By leaving private-sector agents to consider the risk that they will not be rescued in a crisis, constructive ambiguity is one way of dealing with moral hazard. The main benefit of spelling out the rules—provided they are good rules and are understood to be implementable—should be a reduction in the frequency of panics. This benefit must be compared with the lesser risks that are likely to be taken by investors under constructive ambiguity, and the possibly greater frequency of crises. Further, in a rational-expectations equilibrium with constructive ambiguity, there will be occasions when the private sector is disappointed because the putative lender of last resort fails to deliver—and *ex post*, the economic costs of any given crisis are likely to be greater when the potential lender of last resort fails to act.[26]

[26] Guttentag and Herring (1983, p. 24) describe as the worst possible system one in which it is expected that there will be a lender of last resort but in which the relevant institution proves unable to function. The extent of, and contagion from, the Russian crisis of 1998 provides some support for their view. Freixas (1999) develops a model in which the lender of last resort follows a mixed strategy in deciding which institutions to save; this is one possible definition of constructive ambiguity. The optimal policy of the lender of last resort in the Freixas model also features the too-big-to-fail doctrine.

Although the central bank or lender of last resort will never be able to spell out the precise circumstances under which it will act as either a crisis lender or crisis manager, it should specify the general principles on which it will act. For instance, it should announce that it will be willing to act as crisis lender in the event of a systemic crisis and should specify the rules that it will follow—for instance some of the Bagehot rules—as both crisis lender and crisis manager. There are three reasons to spell out the rules: first, and this is Bagehot's justification, by specifying a good set of rules, the central bank reduces the likelihood of unnecessary self-justifying crises; second, by announcing and implementing a particular set of rules, the bank provides incentives for other stabilizing private-sector behavior (for instance, in the holding of assets good for collateral); and third, by spelling out the rules in advance, the bank somewhat limits its own freedom of action after the event.[27]

In sum, although our inability to describe precisely the circumstances of any future crisis ensures that some ambiguity will inevitably remain about the actions of the lender of last resort in future crises, it is preferable to specify as clearly as possible the general principles under which the lender of last resort will act.

3 The International Lender of Last Resort

Is there likely to be a need in the reformed international financial system for an international lender of last resort, for an institution that takes the responsibility to deal with potential and actual crises, either as crisis lender, crisis manager, or both?

This is not the Kindleberger question of whether there is a leading central bank that accepts some responsibility for the performance of the global economy. For instance, when Kindleberger (1986) blames the Great Depression on the absence of an international lender of last resort, he means that no agency—and the natural candidates were the Bank of England, the Banque de France, and the Federal Reserve—pursued a monetary policy that took account of the international dimensions of the crisis in which it found itself. Kindleberger would probably say, approvingly, that in the fall of 1998, the Federal Reserve *did* act as international lender of last resort in that sense, even though

[27] Of course, *in extremis*, the rules can be broken, as they were by the Bank of England during nineteenth-century crises. Spelling out the rules would nonetheless serve a useful purpose, because the lender of last resort would hesitate before incurring the cost of breaking them.

in cutting interest rates, it was taking actions in the interests of the United States.

Rather, the question is whether there is a need for an agency that will act as lender of last resort for countries facing an external financing crisis. In such a crisis, a country—and by this I mean both the official and private sectors within the country—usually faces a massive demand for foreign exchange. Because the country's own central bank cannot produce this currency, the fact that the central bank is operating as the domestic lender of last resort is typically irrelevant to the solution of an external financing problem.

There is a potential need for such assistance to a country, not only because international capital flows are extremely volatile, but also because that volatility is contagious, reflecting the instability inherent in financial panics.[28] An international lender of last resort can help mitigate the effects of this instability and, perhaps, the instability itself. At the macroeconomic level, a country faced with a sudden demand for foreign exchange can permit its exchange rate to adjust, can restrict domestic demand to generate a current-account surplus, or can do both. At the microeconomic level, foreign creditors can attempt to collect on obligations, and financial institutions and corporations can, if necessary and if the domestic legal system is adequate, be put into bankruptcy. During a panic, however, all such measures are likely to result in a considerable overshooting of the needed adjustment, and there is, accordingly, a case for the public sector both to provide emergency foreign-exchange loans and to assist the domestic authorities in attempting to manage the crisis.

This argument also rests on the view that international capital mobility is potentially beneficial for all of the world economies, including those of the emerging-market and developing countries.[29] But this potential

[28] For models showing multiple equilibria in an international context, see Chang and Velasco (1998) and Zettelmeyer (1998).

[29] It has been argued that neither theory nor evidence supports the view that international capital flows are potentially beneficial. The theoretical case, at the simplest level (with a relabeling of axes) is the same as the case for free trade. To this should be added the fact that countries that close the capital account also typically protect the financial sector from foreign competition, thereby reducing the efficiency of this important industry. At this stage, there is little empirical evidence bearing on the benefits or costs of open capital markets, and the fact that both China and India were less affected by the Asian crisis than were other countries in the region is cited in favor of the view that the capital account should be kept closed. This suggests two comments: first, the argument must be about transitional arrangements, because the most advanced countries have open

can only be realized if the frequency and scale of capital-account crises can be reduced. The founders of the Bretton Woods system provided for the use of capital controls to deal with capital flows. Some controls—particularly market-based controls that seek to limit short-term capital *inflows*—can be envisaged as a useful part of a transitional regime while the macroeconomic framework and financial structure of the economy are being strengthened. The use of controls to limit capital *outflows* was advised in the recent crises by several academics. Malaysia accepted that advice, but it is surprising how few other countries did. Indeed, policymakers in Latin American countries that generally had such controls in the 1980s explicitly rejected them in 1998, emphasizing that controls were inefficient, were widely avoided, and had cost them dearly in terms of capital-market access.

It remains an open question whether these crises will result in the more frequent use of controls on capital outflows in the midst of crises.[30] The answer will depend to an important extent on the success of the reforms now under way that are intended to improve the performance of the international financial system.

My argument is not only that the international system needs a lender of last resort, but that the IMF is increasingly playing that role.[31] Changes now being considered for the international system—particularly those relating to efforts to involve private-sector creditors in crisis resolution—should make it possible for the IMF to exercise that function more effectively.

In focusing on the Fund's potential lender-of-last-resort role, I leave aside its other important functions, among them: "[promoting] international monetary cooperation through a permanent institution which provides the machinery for consultation and collaboration on interna-

capital accounts; second, I suspect, but cannot establish, that with regard to empirical work on the benefits of capital-account liberalization, we are just a little behind where we were in the late 1980s on trade liberalization, when empirical work showing its benefits was widely regarded as highly suspect.

[30] The original version of this essay stated that it was also an open question whether the recent crises would lead to the greater use of controls on capital outflows *in normal times*. I believe the evidence of 1999 points to a negative answer, although it is possible that capital-account liberalization in some countries will now advance more slowly than it otherwise would have done. It is likely that the operations of hedge funds and other institutions engaging in similar activities will come under closer supervision as a result of the recent crises.

[31] Boughton (1998) traces the development of the IMF's role as crisis manager during the last two decades.

tional monetary problems";[32] lending for current-account purposes to countries that lack market access; providing surveillance and information; and providing technical assistance, including policy advice and monitoring. Although these functions are no less important than the Fund's potential lender-of-last-resort role, they are beyond the scope of this essay.

Let me immediately dispose of the argument that the IMF cannot act as a lender of last resort because it is not an international central bank and cannot freely create international money. As already discussed, the domestic lender of last resort—whether as crisis lender or crisis manager—is not necessarily the central bank. As crisis lender, the IMF, the financial structure of which is close to that of a credit union, has access to a pool of resources, which it can lend to member countries.[33] As crisis manager, it has been assigned the lead in negotiating with member countries in a crisis, and it cooperates in arranging financing packages.

The question arises whether the IMF as crisis lender has sufficient resources to do the job. The IMF has reached its present size as a result of a series of quota increases, approximately once every five years. Relative to the size of the world economy, it has shrunk significantly since 1945. If the IMF were the same size today as it was in 1945, relative to the output of its member states, it would be more than three times larger than it will be when the present quota increase is completed.[34] If the quota formula applied in 1945 were used to calculate actual quotas today, the IMF would be five times its current size, and if the size of the IMF had been maintained relative to the volume of world trade, it would be more than nine times its current size—that is, the size of the IMF would be over $2.5 trillion.[35] The decline relative to the likely borrower base is smaller, however, for whereas all members except the United States and probably Canada were potential borrowers in 1945, most of the rich countries are at present unlikely to borrow from the IMF.

[32] This statement from Article I(i) of the IMF's Articles of Agreement is the first of six purposes, which have remained unchanged since 1944.

[33] The analogy is Peter Kenen's (1986).

[34] Following the completion of the eleventh general review of quotas, on which agreement was reached in 1998, total quotas will reach approximately $275 billion. The effective availability of resources to lend is smaller, because the weaker currencies held by the IMF are not, in practice, usable for lending. (Note that here and throughout, "billion" equals one thousand million.)

[35] Because the IMF was established at a time when private capital flows were very small, it is safe to conclude that its size relative to private capital flows has declined even more than its size relative to trade flows.

Despite this significant shrinkage relative to its original size, the IMF as lender of last resort is still able to assemble a sizable financial package in response to a crisis. In case of systemic problems, the IMF can borrow from the New or General Arrangements to Borrow. Further, as demonstrated in the Brazilian and East Asian packages, member governments and other international financial institutions may add significantly to these packages when they deem cases to be of systemic importance or of particular importance to them. Whether the IMF will in future be large enough relative to the size of the challenges facing it will depend on the future scale and volatility of international capital flows, which will in turn depend on the effectiveness of reforms, including measures to deal with problems of moral hazard.

As noted in the domestic case, although it is not essential that the lender of last resort be the central bank, it is helpful. Would it be useful for the IMF to be able to create reserves? Under Article XVIII of the Articles of Agreement, the IMF can, by an 85 percent majority, allocate special drawing rights (SDRs) "to meet the long-term global need, as and when it arises, to supplement existing reserve assets." It is possible—indeed it seemed to be the case in the fall of 1998—to envisage circumstances under which a general increase in reserves would be useful, for instance if flows of credit in the world economy were to cease. However, a general allocation of SDRs has to be made in proportion to quota holdings and would not in its current form be well suited to dealing with a problem that affects a specific group of countries, such as emerging-market countries.[36]

The IMF thus has the capacity to act as crisis lender to individual countries and, in specific circumstances, through an issue of SDRs, could lend more broadly. It also acts as crisis manager. Kindleberger ([1978] 1996, p. 188) complains that the IMF is too slow in emergencies, but it has in recent years demonstrated the ability to move very rapidly, using the Emergency Financing Mechanism introduced after the Mexican crisis. The main constraint on the IMF's ability to act in time to avert a crisis is that governments delay too long in approaching the IMF, in part because excessive delay is a characteristic of governments that get into crises, but also because these governments hope somehow to avoid taking the actions that a Fund program would require.

[36] A general allocation of SDRs is analogous to the concept in the domestic case of the lender of last resort lending to the market, rather than to individual institutions (in this case, countries). Control over national money supplies, however, would still rest with the national central banks.

4 Reforming the International System

Although the IMF is not an international central bank, it acts in important respects as an international lender of last resort. The job can surely be done better, but before addressing that issue directly, I shall discuss four central elements in the reform of the international system: exchange-rate systems; reserve holdings; measures to involve the private sector; and international standards.

Over a century of controversy has failed to produce a clear answer to the question of which exchange-rate system or monetary regime is best. A country's history, particularly its history of inflation, is a critical consideration in determining its choice of exchange-rate regime. Nonetheless, it is striking that the major external crises during the period from 1994 to 1999—in Brazil, Indonesia, Korea, Mexico (1994), Russia, and Thailand—affected countries that had in some way pegged the exchange rate in the period leading up to the crisis. The assumption, moreover, that the exchange rate was stable profoundly affected economic behavior in those countries, especially in the banking system, and contributed to the severity of the postdevaluation crises. It is equally striking that some countries with flexible rates, among them Mexico (1998), South Africa, and Turkey, although severely affected by the global economic crisis, did not suffer as badly as did countries that had pegged exchange rates.

At the same time, we should not forget that two economies with hard-pegged rates, Argentina and Hong Kong, succeeded in holding the line.[37] And we should not forget that many countries benefited from using the exchange rate as a nominal anchor in disinflating, and that the fear of devaluation often provides the best discipline for weak governments.

Flexible or Fixed Exchange Rates?

The virulence of the recent crises is shifting the choice of exchange-rate system for countries actively involved in international capital markets toward two poles: toward flexible exchange-rate systems or toward very hard pegs, including through use of a currency board. But although we shall probably see fewer nominal pegs for countries with open capital accounts in the coming years, we are unlikely to move to a system in which exchange rates for all countries float.[38] We are also likely to see

[37] China, too, held its pegged exchange rate throughout the crisis, but in contrast to the other cases mentioned, China's rate was largely dependent on capital controls.

[38] In the longer run, if EMU succeeds, as it will, there will probably be a shift toward currency blocs, with more currency unions and fewer currencies.

a shift of exchange-rate regimes toward floating as countries open their capital accounts.

A shift toward floating rates is likely to reduce the frequency of sharply defined foreign-exchange crises. But because some countries will continue to peg their rates, because unstable debt dynamics and inappropriate management of external debt are possible also for a country with a flexible exchange rate, and because sharp shifts in the sentiments of international investors regarding even a country with a floating rate can set off a panic and contagion, there may still be a need for an international lender of last resort.

International Reserves

The first line of defense in dealing with capital-flow reversals, aside from macroeconomic-policy and exchange-rate responses, is to use the foreign-exchange reserves. There has been surprisingly little emphasis, in discussions of the recent crises, on the fact that the countries with very large reserves have been more successful in dealing with the crises than have countries with small reserves. But that is a fact, and it is very likely that countries seeking to draw lessons from the recent crises will decide that they should hold much larger reserves than before. This is already happening in Korea, which, in the two years after its crisis, accumulated nearly $70 billion in reserves, and Korea will not be the only country to move in that direction.

Should countries hold larger reserves and rely less on the lender of last resort?[39] In many models, and in practice, the ratio of reserves to short-term external liabilities is an important factor in determining the likelihood of a financial crisis (Calvo, 1995). This finding suggests that countries need to set their reserve holdings on the basis of capital, as

[39] In considering how much the system should rely on reserve holdings, as opposed to the lender of last resort, we are close to a minor theme that runs through Bagehot's ([1873] 1906) *Lombard Street*: the view that it would have been better had the English banks held their own reserves, rather than rely on the Bank of England. Bagehot (1866) maintains that "it is very important to perceive that the system which makes one bank not as a source of circulation but as a bank predominant over others, which entrusts the total banking reserve to its custody, which makes it the ultimate lending house in adversity—is not a natural, an expedient, or an universal system, or one which we should prescribe where a country has its banking system to choose, and is not controlled by an imperious history."

In addition, there are models that, by analogy with the fact that drivers who wear seatbelts may drive faster, show that countries with larger reserves pursue riskier policies and possibly experience more, or worse, foreign-exchange crises.

well as current-account, variables.[40] It is therefore likely that the demand for reserves will increase as capital accounts become more open and as international capital flows more readily. We should recognize that a general desire by emerging-market countries to build up reserves by running current-account surpluses in the next few years will impart a deflationary impact to the world economy.

Reserves can be obtained not only through a current-account surplus,[41] but also by international agreement on, for example, an issue of SDRs. Aggregate demand as well as the distribution of seigniorage differ in these two approaches; recipients of a general reserve issue may spend the funds, rather than hold them.[42] Another possibility is to rely more on the lender of last resort or on precautionary lines of credit of the Argentine type. It is not possible without a more detailed analysis to decide which approach is preferable, but it is likely that the recent experience of crises will lead to larger holdings of reserves, one way or another.

Private-Sector Involvement in the Solution of Financial Crises

A first and constructive possibility for private-sector involvement is the already noted strategy followed by Argentina and a few other countries of establishing precautionary lines of credit from private-sector lenders. This is a useful supplement to the holding of reserves and might be cheaper than increasing reserves. A second and very important strategy, suggested in a report by the G-10 deputies after the Mexican crisis, is the proposal that bond contracts should be modified to permit a country to reschedule payments in the event of a crisis. The United Kingdom has recently included such a clause in a euro issue, in the hope that other countries will follow suit. More generally, clauses on collective representation and majority decisions by creditors could be included in bond and other contracts to facilitate agreements with creditors in times of crisis.[43] Another suggestion, most prominently associated with

[40] It also makes clear the need to monitor and, if necessary, limit the volume of a country's short-term external debt. This is an important element in the new international architecture, but not one I shall pursue here.

[41] Of course, reserves can be borrowed in the short run, but the intertemporal budget constraint requires that they be paid for sometime, provided they are costly to hold—which they are.

[42] An issue of reserves without an increase in their demand would add to aggregate demand and contribute to global inflationary pressures. This would not be a pressing concern at a time of global recession.

[43] This possibility is developed in the Group of Twenty-Two (G-22) "Report of the Working Group on International Financial Crises" (1998) and in the speech by Gordon Brown (1998). Although some developing countries object that changes in bond contracts

Jeffrey Sachs, is the possibility of a formal imposition of a stay on payments by a country in crisis.[44] In addition, the executive board of the IMF has agreed that the IMF may lend to countries in arrears to private creditors, provided they are pursuing appropriate policies and making good-faith efforts to cooperate with the creditors.

As critical as the issue of private-sector involvement is, it has to be approached carefully, lest proposed solutions increase the frequency of crises. For instance, the formalization of a requirement that the banks, or any other set of creditors, always be forced to share in the financing of IMF programs would be destabilizing for the international system. If such a condition were required, the creditors would have a greater incentive to rush for the exits at the mere hint of a crisis. This is a real dilemma, one that suggests not only a role for a lender of last resort, but also the need for a differentiated approach to involving the private sector that depends on the circumstances of each country. A formal approach might sometimes be necessary, as in Korea at Christmas in 1997, when central banks and supervisory agencies encouraged banks to maintain their lines of credit through the use of moral suasion; less formal discussions might serve better at other times, as in Brazil in March 1999, when the commercial banks voluntarily agreed to maintain their lines of credit. On occasion, if a country enters a program sufficiently early, there might be no need to approach the creditors.

The issue of private-sector involvement has arisen recently in IMF programs with Ecuador, Pakistan, Romania, and Ukraine, and the executive board of the IMF has discussed the matter more generally on the basis of those cases and related experience in recent years. The IMF is seeking to establish a general framework for dealing with such cases that addresses their considerable variety. Among the principles likely to be followed is that the IMF will need first to determine if the country's external debt burden is manageable in the medium term. If it is not, the country will have to approach its creditors directly to undertake debt exchanges or to find other means of dealing with the burden. In cases where stabilization does not require more than the normal scale of IMF

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would make borrowing more expensive for them, such changes would reflect a more appropriate pricing of risks.

[44] This often goes under the name of "international bankruptcy." In the normal course of events, national bankruptcy laws should apply to private-sector debtors who cannot make payments; if debtors can pay in local currency, the stay could permit a delay in converting these payments into foreign currency.

assistance, it should be possible to rely on the IMF's catalytic role, without formally requiring concerted private-sector involvement.

International Standards

Work is under way to define a set of international standards and to encourage countries to adopt them. The best-known current standards are those for banking, as defined by the Basle Committee on Banking Supervision, and including the *Core Principles* set out in 1997. The IMF's Special Data Dissemination Standard (SDDS) went into full operation in 1998. Codes of fiscal transparency, and of monetary and financial transparency, have been prepared by the IMF in cooperation with other institutions. Other important international standards already developed or in the process of development include international accounting standards, standards for the operation of securities markets, and an international standard for bankruptcy regulations.

If countries adopt such standards, their financial systems should work better, and the likelihood and intensity of crises will be reduced. At this point, the main incentives for a country to adopt international standards are the expectation that its economy will operate more efficiently and the hope that international investors will treat it more favorably. The fact that most leading emerging-market countries have subscribed to the IMF's SDDS suggests that these incentives will have a positive effect. In addition, a significant (currently still experimental) international effort is being made to strengthen financial systems through financial-sector assessments made by joint IMF and World Bank teams, together with experts drawn from central banks and other financial supervisory agencies. An experimental program to strengthen and formalize surveillance of standards and codes involves the development of Reports on the Observation of Standards and Codes (ROSCs) by relevant international agencies for each specialized area, with the goal of assembling the reports in modular form to provide a full description of actions in each country. Reporting on the observation of codes and standards should encourage their adoption; further incentives would be both useful and efficient—for instance, the risk weights assigned by regulators in creditor countries could reflect the recipient country's observance of the standards.[45]

[45] The Financial Stability Forum has recently prepared a useful report on the adoption and monitoring of international standards and codes (available at www.fsforum.org/Reports/RepIOS.html).

5 Improving the Functioning of the International Lender of Last Resort

At the end of 1997, the IMF introduced the Supplemental Reserve Facility (SRF), which is subject to policy conditionality and can make large short-term loans at penalty rates to countries in crisis.[46] Such SRF loans have been made to Brazil, Korea, and Russia. In April 1999, the IMF's executive board established the Contingent Credit Line (CCL) facility, which was designed to provide a line of credit to countries struck by contagion from an external crisis. To qualify for a CCL, a country must be pursuing good macroeconomic policies, have a strong financial sector, and either meet, or be moving toward meeting, international standards in a variety of areas. The CCL is thus intended to provide an element of insurance and reassurance for countries following good policies; by requiring prequalification, moreover, it provides incentives for countries to pursue good policies and to strengthen the structure of the economy in normal times. It thus prevents crises, rather than focusing, as other facilities do, on coming to the assistance of countries that are already in trouble. The lending terms for the CCL are similar to those for the SRF.

The reforms of the international system now on the agenda will have to be implemented in order for these lender-of-last-resort-like facilities to operate effectively. In particular, the strengthening of macroeconomic policies, including the shift toward flexible exchange rates, the improvement of standards, and increased transparency and access to relevant information,[47] together with improved procedures to draw in the private sector, will reduce the frequency and scale of crises.

What about the Bagehot lessons that in a crisis, the lender of last resort should lend freely, at a penalty rate, on good collateral, but that institutions that would be bankrupt in normal times should not be saved? Both the penalty rate and the notion of lending freely—in excess of normal access limits—are incorporated into the SRF. Policy conditionality can be interpreted as an additional element of the penalty, as seen from the viewpoint of the borrower country's policymakers. Of course, access under the SRF, although possibly broader than under normal facilities, is limited. Given that loans have to be made to an individual country, however, some caution about excessive financing is warranted in the light of moral hazard. "Lending freely" in the interna-

[46] The access limits for normal IMF loans do not apply to the SRF.

[47] See the G-22 "Report of the Working Group on Transparency and Accountability" (1998).

tional context perhaps translates into the condition that the international lender of last resort should stand ready to lend early and in sufficient amounts to countries that are not in crisis but that may be affected by contagion from a crisis. This is a feature of the CCL.

With regard to bankruptcy, private-sector debtors in the crisis country should be covered by national bankruptcy laws. There is no bankruptcy status for a sovereign debtor, but workout procedures, including those of the Paris and London Clubs, and possibly the further development of procedures to involve the private sector in crisis resolution might play a similar role. The economics of such a quasi bankruptcy for a sovereign debtor are complex, because the ability to generate repayments is more a matter of political than of economic feasibility.

The IMF's Articles of Agreement permit the Fund to ask for collateral, but it has rarely done so.[48] The IMF and the World Bank are regarded as preferred creditors, with a first claim on payments made by countries in debt to them, and their collateral is the denial of market access to countries that would default. In considering the explicit provision of collateral for IMF programs, it has been argued that there is a tradeoff between the amount of policy conditionality that accompanies a loan and the amount of collateral, and that policy conditionality is the more important consideration.

How would these changes in the system deal with the problem of moral hazard? Recall that three mechanisms were discussed in the domestic context: official regulation, private-sector monitoring and self-regulation, and the imposition of costs on those who make mistakes. The adoption of international standards would raise the quality of official regulation. Improvements in transparency, the provision of information by the public sector, and improved regulation, together with bail-in procedures that set the right incentives, would encourage better monitoring and self-regulation by the private sector. The charging of a penalty rate would discourage borrower moral hazard, and improved procedures to involve private-sector creditors in crisis reduction should reduce investor moral hazard.[49]

[48] Article I(v) of the Articles of Agreement enjoins the IMF "to give confidence to members by making the general resources of the Fund temporarily available to them *under adequate safeguards*" (emphasis added). Policy conditionality is regarded as the safeguard.

[49] Although investor moral hazard is more serious than borrower moral hazard, we should recall that the great bulk of investors in the East Asian crisis countries, and also those who held claims on Russia, suffered considerable losses. Borrower moral hazard is of much less concern and is deterred by policy conditionality: governments seek to avoid going to the IMF (indeed, they frequently delay too long), and policymakers who get

In considering how to limit moral hazard, we should also distinguish the hazards associated with different types of international lending.[50] The problem is far more serious for interbank lines of credit than, say, for equity investment. The responsibility for dealing with the moral-hazard problem for interbank lines of credit lies as much with the government of the lender as with that of the borrower, because it is the former that supervises and protect its banks. To reduce moral hazard, lender supervisory authorities will need to recognize the responsibilities of their institutions to participate in bail-ins and workout procedures.

The SRF and the CCL, together with the changes to the international system now under discussion, would go a long way toward making the international capital markets operate as well as the better domestic capital markets. But there remains the question of how to strengthen incentives for countries to adopt the necessary international standards.

An important suggestion in this regard has been made by Charles Calomiris and Allan Meltzer (1998) and Calomiris (1998); elements of their suggestion are included in the Meltzer Commission report (Meltzer, 2000). The authors recommend that the IMF act only as lender of last resort, under Bagehot rules, and only to countries that prequalify by meeting a stiff set of requirements, most importantly with respect to the banking system. Among these conditions is the requirement that foreign banks be allowed to operate within the country, a change that should be adopted in any case. Loans would be made to qualifying countries on the basis of collateral and without policy conditionality.

In order for the pure Calomiris-Meltzer approach to work,[51] lender-of-last-resort loans would have to be denied to countries that do not prequalify. Loans the IMF makes in other than its role as lender of last resort serve an important systemic function by providing both commitment and signaling technologies to countries that need them.[52] In addition, too-big-to-fail makes the commitment not to lend to countries that fail to prequalify dynamically inconsistent, and contagion makes too-big-to-fail a rational strategy.

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their country into a crisis and then agree to an emergency program with the IMF are generally forced out of office, as occurred in the Asian crisis countries and in Russia.

[50] I am grateful to Mervyn King for emphasizing this point.

[51] Although the Calomiris-Meltzer emphasis on prequalification is useful, I note for the record that the suggestion to have the IMF operate only as lender of last resort either overlooks or grossly undervalues the other functions carried out by the IMF (as noted in Section 3).

[52] I expand on this point in my evidence to the Meltzer Commission, available on the IMF website at www.imf.org/external/np/speeches/2000/020200.htm.

The notion of prequalification is, however, important, and it is embodied in the CCL. No country has yet applied for a CCL, perhaps because it is not yet clear what signals the market will read into such an application. The designers of the facility hoped that it would be read as a sign of strength: certification that relevant standards are being met and assurance that additional financing would be available in the event of a crisis caused by contagion. Some country representatives have said that application for a CCL could, instead, be read as a sign of weakness, a fear that the country's own defenses are inadequate. I believe the more important reason that no country has yet applied for the CCL is that the incentives to do so are inappropriate. In particular, a country that prequalifies for a CCL will pay the same penalty rate to borrow during a crisis as another country that has not prequalified and instead has to apply for the SRF. Given the desirability of prequalification and the incentives it provides for strengthening economic policies and structures, it would make more sense to charge a lower rate for CCL than for SRF borrowing. In November 2000, the IMF's executive board agreed to a number of changes to the CCL that address these issues.

6 Concluding Comments

The crises of 1994 to 1999 have revealed important weaknesses in the structure of the international economy. Much good work has been done to analyze the sources of these weaknesses and to present potential solutions, and the work of reforming the international financial system and the IMF is well under way.

Through its activities as crisis lender and crisis manager, the IMF has, in important respects, already been acting as an international lender of last resort. Its role in this regard is necessarily limited, because it lacks the ability freely to create international liquidity, but in light of the problem of moral hazard, this limit is necessary. Nonetheless, the IMF has been able, when needed, to help assemble sizable lending packages to countries suffering panics and speculative attacks. Its role as international lender of last resort can be strengthened through the further development of the SRF and, particularly, the CCL, and that strengthening, together with other changes now under way in the international financial system, should help reduce the frequency and virulence of the crises the system has experienced as international capital mobility has increased.

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