

## On the Need for an International Lender of Last Resort

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**T**he frequency, virulence, and global spread of financial crises in emerging market countries in the last five years—Mexico in 1994, with the subsequent tequila contagion in Latin America and for a day or two in east Asia; east Asia in 1997 and 1998, with contagion spreading crisis within the region; Russia in 1998, itself affected by Asian contagion, with the Russian contagion spreading to Latin America in addition to eastern Europe and the rest of the former Soviet Union—has led to the most serious rethinking of the structure of the international financial system since the breakdown of the Bretton Woods system in 1971. In the coming months and years, governments and international institutions will be putting in place a series of changes designed to strengthen the international financial system.

The vision that underlies most proposals for reform of the international financial system is that the international capital markets should operate as well as the better domestic capital markets. To express the goal in this way is to drive home the point that volatility and contagion cannot be banished, for asset prices inevitably move sharply, and in ways that are significantly intercorrelated. But while volatility and contagion will always be with us, we can surely do better in reducing the frequency and intensity of emerging market financial crises, and the extent of contagion, than we have in the last five years.

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 a literature that emerged out of the financial crises of the last century, that on the lender of last resort. The best-known classic writing on the lender of last resort is

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Walter Bagehot's (1873) *Lombard Street*.<sup>1</sup> The most famous lesson from Bagehot is that *in a crisis, the lender of last resort should lend freely, at a penalty rate, on the basis of collateral that is marketable in the ordinary course of business when there is no panic.*

I will start 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. I will then discuss the moral hazard problem that is created by the existence of a lender of last resort—that is, the problem that the existence of a lender of last resort may create incentives for risky behavior which raise the chances of financial crises—and measures to mitigate it. I then turn to the international system and will argue that it too needs a lender of last resort. I will argue that the International Monetary Fund, although it is not an international central bank, has undertaken certain important lender of last resort functions in the current system, generally acting in concert with other official agencies—and that its role can be made more effective in a reformed international financial system.<sup>2</sup>

## The Domestic Lender of Last Resort

The role of lender of last resort for the central bank is associated with the prevention and mitigation of financial crises. Financial crises and panics have been taking place for centuries (Kindleberger, 1996; MacKay, 1841). They are typically associated with a sudden loss of confidence in the standing of some financial institutions or assets. Because the chain of credit is based on tightly interlinked expectations of the ability of many different debtors to meet payments, a sense of panic can spread rapidly, contagiously, through the financial system, and if unchecked, have significant effects on the behavior of the real economy. The role of the lender of last resort is to offer an assurance of credit, given under certain limited conditions, which will stop a financial panic from spreading—or better still, stop it from even getting started.<sup>3</sup>

While there is considerable agreement on the need for a domestic lender of last resort, some disagreements persist about what the lender of last resort should

<sup>1</sup> Henry Thornton's (1802) analysis of the role of lender of last resort is also remarkably sophisticated. For an historical discussion of the lender of last resort, see Humphrey and Keleher (1984).

<sup>2</sup> Among those who have sought to build on and develop the analysis of the role of lender of last resort in recent years, see Benston et al. (1986), Freixas (1999), Garcia and Plautz (1988), Goodhart (1995), Goodhart and Huang (1998), Goodfriend and Lacker (1999), Holmstrom and Tirole (1998), Kindleberger (1996, first edition 1978), Meltzer (1986), Mundell (1983), Schwartz (1988), Solow (1982), and Wijnholds and Kapteyn (1999). Claassen (1985) provides an interesting discussion of the role of an international and domestic lenders of last resort in an international context. Recent discussions of the potential role of the IMF as an international lender of last resort include Calomiris (1998), Calomiris and Meltzer (1998), Capie (1998), Chari and Kehoe (1999), Giannini (1998), Jeanne (1998), and Meltzer (1998). Mishkin (1999) and Radelet and Sachs (1998) take up lender of last resort issues in the context of the Asian crisis.

<sup>3</sup> In economic theory panics can be modeled as cases of multiple equilibria, possibly dependent on herd behavior. The classic reference is Diamond and Dybvig (1983). For a related model in the international context, see Chang and Velasco (1998).

do. I will start with the traditional Bagehot (1873) conception, as summarized and developed by Meltzer (1986, pp. 83):

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. 83–4) five main points concerning a lender of last resort, 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, uninsured depositors, and the deposit insurance corporations, as in any bankruptcy proceeding.

Meltzer's (1986) statement for the most part agrees with other formulations, but does not emphasize the view, summarized for instance by Humphrey (1975) and attributed to Thornton (1802), that the overriding objective of the lender of last resort should be to prevent panic-induced declines in the aggregate money stock, and thus that the lender of last resort role can be viewed as part of a central bank's overall task of monetary control. In some more recent formulations, this view has been extended to what could be considered a sixth precept, which could be added to the above list: "In the event of a panic, the central bank should assure liquidity to the market, but not necessarily to individual institutions."<sup>4</sup>

With this notion of the lender of last resort in mind, I will take up six questions about the role of the domestic lender of last resort.

### **Is the Central Bank the Only Lender of Last Resort?**

Lenders of last resort have generally undertaken two roles: *crisis lender* and *crisis manager*. The crisis lender provides financing to deal with a crisis. The crisis

<sup>4</sup> In private conversation, Meltzer has indicated that he sees no advantage to the rule that the central bank should lend only to the market rather than on occasion if necessary also to individual institutions.

manager takes responsibility for dealing with a crisis or potential crisis, whether or not the institution itself lends for that purpose. In the midst of a financial crisis, there is often a potential managerial (or facilitating or coordinating) role in which other agents or institutions may be encouraged to act in the right way, for instance by extending a loan to an institution whose failure could have systemic consequences.

While historically the central bank has generally been both the crisis manager and the crisis lender, neither role has to be carried out by the central bank. If a certain authority, and access to resources, are necessary for taking this coordinating role, then a Treasury may be able to do it as well as a central bank. At various times in U.S. history, institutions other than the central bank have played one or both of these roles, including: the U.S. Treasury; private institutions, such as clearinghouses; and in 1907, J.P. Morgan (Kindleberger, 1996, pp. 133–35).<sup>5</sup> Indeed, the separation of the roles of crisis lender and crisis manager could become more frequent as the task of supervision of the financial sector is separated from the central bank, as it has been in the United Kingdom and elsewhere.

### **Does the Lender of Last Resort Need the Ability to Create Money?**

There is no question that a lender of last resort will often find it useful to have the power to create money. The clearest example is when a panic takes the form of a run from bank deposits into currency. Then the central bank is well-positioned to create quickly the currency needed to deal with the panic, and at no first-round cost to the taxpayer.<sup>6</sup>

However, panics caused by a demand for currency are rare (Kaufman, 1988; Schwartz, 1988). More generally, a panic may take the form of a run, possibly enhanced by contagion, in which deposits shift from those banks and financial institutions deemed unsound to those thought to be healthy. In these cases, creating additional money may be unnecessary. At least in principle, the liquidity can simply recirculate from the institutions gaining money back to those losing it. Again in principle, the market can accomplish this shift, if it is able to distinguish the merely illiquid from the insolvent companies.

But—and this is the critical point—the *line between solvency and liquidity is not determinate during a crisis*. If a crisis is well-managed, the number of bankruptcies may remain small; if it is badly managed, it may end in general illiquidity and insolvency. A skilled lender of last resort, able to assure the markets that credit can and will be made available to institutions that would be solvent in normal times, can help stem a panic and reduce the extent of the crisis.

All this is straightforward, provided the central bank is free to create money.

<sup>5</sup> Although some have pointed with approval to the role of clearinghouses in financial panics, note Kindleberger's quotation (1996, 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."

<sup>6</sup> Accordingly, Schwartz (1988) argues that the central bank should act as lender of last resort only in the event of a run from banks into currency.

However, at the time that Bagehot (1873) wrote *Lombard Street*, the Bank of England was bound by gold standard rules; that is, money could only be created in accordance with the amount of gold held by the Bank, and the Bank did not have the ability to create gold. Nonetheless, Bagehot enjoined the Bank to act as lender of last resort. In the three financial crises preceding the writing of *Lombard Street*, the Bank of England was given permission to break the gold standard rule, and since Bank of England credit was accepted as being as good as gold, it managed to stay the panics. The key was not the legal right to create money, but the effective ability to provide liquidity to the market.

A similar question, of whether there can be a lender of last resort when the central bank is constrained in the creation of money, arises today in countries with currency boards, where foreign exchange holdings constrain the domestic money supply. If the question is how to deal with domestic financial institutions that may suffer liquidity problems, one solution adopted in Bulgaria, where the banking department of the central bank is assigned the task of (limited) lender of last resort, is to set up an agency that is endowed with sufficient resources to lend in the event of a panic or banking sector problems. 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 put in place international lines of credit. In these cases, the private and public sector lenders to the central bank are acting as the crisis lender, while the central bank is acting as crisis manager.<sup>7</sup>

These examples make the point that lender of last resort need not have the power to create money, as long as it can provide credit to the market or to institutions in trouble. It is possible to set up an agency to deal with potential banking sector problems and endow it with sufficient funds—perhaps from the Treasury—to cover the anticipated costs of normal crises. In dealing with banking crises, the lender of last resort has more often acted as crisis manager, as coordinator, without putting up its own funds, than as outright lender. In the 20-year period ending in 1993, taxpayer or deposit insurance money was used in over half the 120 banking rescue packages studied by Goodhart and Schoenmaker (1995), in part because the central bank simply did not have the real resources that were required to deal with the banking problem. In any case, the costs of major 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.<sup>8</sup>

This point—that while it is advantageous for the lender of last resort to be able

<sup>7</sup> Of course, the question arises why any external financing is needed in response to a currency shock if the rules of the currency board are strictly applied. The answer is that the monetary authority may want to mitigate the adverse effects of an external shock on the banking system and the economy.

<sup>8</sup> Not all financial crises need ultimately to be costly to the public sector; indeed, if the lender of last resort intervenes in a pure panic and manages to stabilize the situation, it should expect to come out ahead when its lending is repaid. Apparently both the Swedish and Norwegian bank restructuring agencies that were set up in the crises of the early 1990s have come close to meeting this criterion. (I am indebted to my colleague Stefan Ingves for this information.)

to create money, it is not an essential attribute of the lender of last resort—is both central to the argument of this paper, and controversial. I make the argument on logical and historical grounds, namely, that it is possible to conceive of an institution that does not have the ability to create money acting usefully as both crisis manager and crisis lender and that as a historical matter, such institutions have usefully undertaken such roles. Others would argue that without the ability to create unlimited amounts of money, the would-be lender of last resort lacks credibility and thus cannot stabilize a panic. Those who take the latter view should interpret the argument of this paper as being that there is a useful role to be played by an institution that can be both crisis manager and crisis lender, even if—according to their own definition—it cannot be a lender of last resort.

### **Why Should a Lender of Last Resort Lend Only Against Collateral, Especially Collateral Evaluated at its Value in Noncrisis Times?**

By basing the decision to lend on the availability of acceptable collateral, the lender of last resort applies a rough but robust test of whether the institution is in trouble because of the immediate panic, or because of an insolvency that will persist even after the panic. Moreover, when financial institutions know that the lender of last resort will demand collateral, they have an incentive to reduce risks in their portfolios by holding assets that would be accepted as collateral.

The requirement that the collateral be good in normal times is the critical insight. The implicit view behind the requirement that the lender of last resort require collateral, and that the collateral be valued at noncrisis levels, is that there is a good equilibrium towards which the lender of last resort is trying to steer the system. By lending on the basis of the value of collateral in normal times, the lender of last resort helps prevent the panic in the market from becoming self-fulfilling.

More broadly, this rule also suggests that the lender of last resort should apply the rules of collateral generously. In a famous passage bearing on this point, Bagehot (1873 [1924 edition, p. 52]) 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.” In a similar spirit, the Governor of the Bank of England described the Bank’s reaction to the Overend financial crisis in May 1866 (as quoted in Clapham, 1944, Volume II, pp. 283–4): “We did not flinch from our post . . . we made advances which would 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.”

### **Why Should the Lender of Last Resort Charge a Penalty Interest Rate?**

The penalty interest rate serves several functions. It limits the demand for credit by institutions that are not in trouble. It reduces 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 tough times. It encourages institutions to repay the lender of last resort as soon as possible after the crisis, in preference to other outstanding loans.<sup>9</sup>

But just as the requirement for collateral is not intended to stifle the lender of last resort, neither is the application of penalty interest rates. The penalty rate need not be defined relative to the rate at which institutions would lend to each other in the market during a panic. Instead, the penalty must be relative to the interest rate during normal times. In practice, the lender of last resort has frequently lent at a nonpenalty rate (Giannini, 1998).

### **Should the Lender of Last Resort Lend Only to the Market, and Not to Individual Institutions?**

This view holds that, given the provision of sufficient liquidity to the markets, the private sector will be able to decide which institutions should be saved. Moreover, by providing liquidity to the market, the lender of last resort avoids the political hazards of lending to individual institutions.

This idea is a worthy one that should be followed when possible. But given the uncertainties in the midst of a panic over what market conditions will exist in the future, and thus over which institutions should survive, the precept cannot be accepted as a general rule of conduct for the lender of last resort. Almost by definition of a financial panic, a market in the throes of a panic will not do a sound job of allocating credit across institutions. Indeed, Goodhart and Huang (1998) argue that adopting the view that the lender of last resort should lend only to the market is to reject the notion of the lender of last resort.

### **Should the Principles on Which the Lender of Last Resort Would Lend be Clearly Stated in Advance?**

During a crisis, the knowledge that there is an effective lender of last resort should tend to reduce the incentive for runs on otherwise healthy institutions. However some, who fear that market participants will have an incentive to take excessive risks if they believe a lender of last resort will always be available to stem panics, argue for *constructive ambiguity* about the circumstances in which a lender of last resort will step in to seek to stabilize a crisis. The uncertainty generated by such ambiguity should encourage market participants to take fewer risks.<sup>10</sup>

*Some* ambiguity is simply unavoidable: no central bank or lender of last resort will ever be able to spell out precisely in advance the circumstances under which it would act as either a crisis lender or crisis manager and the conditions it will lay down at that time. But unnecessary ambiguity is not constructive, for it implies that

<sup>9</sup> Mints (1945, pp. 191) attributes Bagehot's advocacy of a high lending rate to his view that internal and external drains typically accompany each other; that is, an internal financial panic under a gold standard was often accompanied by gold leaving the country. The high interest rate was designed to stop the external drain of gold, and lending freely would stop the internal drain—a reading that is consistent with Bagehot.

<sup>10</sup> Freixas (1999) develops a theoretical case for constructive ambiguity by the lender of last resort.

occasions will occur when the putative lender of last resort is expected to deliver, but does not—for example in the Russian crisis of August 1998, when many market participants expected the official sector to prevent a Russian devaluation. In such a setting, ambiguity makes the economic costs of a given financial crisis worse; indeed, Guttentag and Herring (1983, pp. 24) describe as the worst possible system as one in which a lender of last resort is expected to take action, but the relevant institution cannot or does not provide the function.

There are three reasons for a lender of last resort to spell out its rules to the extent possible. First, by specifying a good set of rules, the central bank reduces the likelihood of unnecessary self-justifying crises. This was Bagehot's (1873) justification. Second, by announcing and implementing a particular set of rules, the lender of last resort provides incentives for other stabilizing private sector behavior; for instance, in the holding of assets good for collateral. Third, by spelling out the rules in advance, the lender of last resort somewhat limits its own freedom of action after the event, which reduces risks of politically motivated or spur-of-the-moment actions. Of course, *in extremis* the rules could be broken as they were by the Bank of England when it violated the gold standard rules to provide additional credit during crises in the 19th century. Spelling out the rules would nonetheless serve a useful purpose, since the lender of last resort would hesitate before incurring the cost of breaking them.

Much of the discussion of these six questions revolves around a common topic, the issue of moral hazard, to which I will now turn.

## **Moral Hazard**

“Moral hazard,” notes Guesnerie (1987, pp. 646), “refers to the adverse effects, from the insurance company’s point of view, that insurance may have on the insuree’s behaviour.” The standard but extreme example is that of an individual with fire insurance who burns down the property; the less extreme example is of a fire insurance holder who, after becoming insured, takes less care to prevent a fire. More generally, the idea of moral hazard applies to any situation where a perceived reduction in the risk it faces leads a party to take riskier actions, or to neglect precautionary measures.

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 believe they are better protected against risk because they would receive loans from the lender of last resort during a crisis, and the actions of investors in those financial institutions (Hirsch, 1977). If the lender of last resort was able to intervene only to stop unwarranted panics, leaving institutions that would be insolvent in normal times to fail, the managers of these institutions and their investors would face the right incentives and there would be no moral hazard created by the existence of the lender of last resort. But the lender of last resort is unlikely to be able to distinguish perfectly between warranted and unwarranted crises. Moreover, financial institutions already know that because of the existence of deposit insur-

ance and the too-big-to-fail doctrine that the government has an incentive to prevent them from failing and thus already have a moral hazard motivation to believe that a government rescue of some sort will be forthcoming. For all these reasons, measures to offset the moral hazard of both managers of financial institutions and investors would be helpful.

In considering how to reduce moral hazard, it is important to recognize that the problem has no perfect solution. Instead, appropriate policies will generally combine the provision of insurance with measures to limit moral hazard. In the case of moral hazard resulting from the existence of a lender of last resort (as well as resulting from deposit insurance and too-big-to-fail provisions), there are three categories of measures to limit moral hazard: official regulation; encouragement for private sector monitoring and self-regulation; and the imposition of costs on those who make mistakes, including enforcement of bankruptcy procedures when appropriate (Stern, 1999). I consider these in turn.

First, to be eligible for loans from a lender of last resort, banks' portfolio activities are regulated. The 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 of financial institutions, particularly by sophisticated investors. Requirements for the provision of information to investors are helpful in this regard. The limit on the size of bank accounts covered by deposit insurance is intended to provide an incentive for large depositors to monitor banks (along with limiting government liability in the case of a bank failure); however, because of concerns that large institutions are too big to fail without threatening financial contagion, these limits rarely operate when large institutions get into trouble. In addition, when the lender of last resort, acting as crisis manager, arranges a bank rescue package financed by the private sector, it encourages more careful monitoring by such institutions in the future.

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. Changes in management of an institution that is being helped should typically occur, and, as specified in Meltzer's fifth law stated above, equity-holders and holders of subordinated claims on the firm should suffer losses. In the case of insolvency, institutions should be sold or liquidated under the provisions of well-defined bankruptcy laws, which help ensure that workouts for insolvent firms are carried out in an orderly way.

How well do these devices work to limit moral hazard work? A first judgment, based on the frequency of financial crises around the world during the last two decades, is this: Not very well. But this answer is too sweeping. Moral hazard is something to be lived with and controlled, rather than fully eliminated; some crises are bound to happen in any system that provides appropriate scope for private sector risk taking; and many financial crises have been caused by waves of euphoria and depression, not by the existence of a lender of last resort—for after all, the long history of financial crises predates lenders of last resort and deposit insurance. The right comparison is not between the real world and a hypothetical world with no

financial crises, but rather between the operation of a system with a lender of last resort (and deposit insurance) and one without them. I am not aware of careful studies that have attempted to make this more sophisticated judgment. However, I suspect that such a study, while likely to absolve the presence of various official forms of financial insurance, including the assumption that there is a lender of last resort, from blame for much financial instability, would conclude that it is important to do a better job of controlling moral hazard in the domestic financial system.

### **An International Lender of Last Resort?**

The case for a domestic lender of last resort is broadly accepted. In the aftermath of the global financial turmoil of the last five years, the question arises of whether the international financial system needs a lender of last resort.

The issue is whether there is a useful role for an institution that takes responsibility for dealing with potential and actual crises, either as a crisis lender, or as a crisis manager, or both. This differs from the question that is sometimes asked as to whether leading central banks should accept some responsibility for the performance of the global economy, along with their national 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 U.S. 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 late 1990s, the Fed *has* acted as international lender of last resort in that sense, even though it was taking actions in the interests of the United States.

I will focus specifically on the case for an international agency to 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—faces a typically massive demand for foreign exchange. The domestic central bank cannot produce this currency. Thus, the fact that the country may have its own central bank capable of creating the domestic currency is typically irrelevant to the solution of an external financing problem.

There is a potential need for such assistance to a country both because international capital flows are not only extremely volatile but also contagious, exhibiting the classic signs of financial panics,<sup>11</sup> and because 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 and/or can restrict domestic demand to generate a current account surplus. At the microeconomic level, foreign creditors can attempt to collect on obligations and financial

<sup>11</sup> For models with multiple equilibria in an international context, see Chang and Velasco (1998) and Zettelmeyer (1998).

institutions and corporations can—if necessary, and if the domestic legal system is adequate—be put into bankruptcy. However, all such measures are likely in a panic 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.

The argument rests also on the view that international capital mobility is potentially beneficial for the world economy, including for the emerging market and developing countries. Critics of this view argue that neither the theoretical nor empirical evidence supports a positive link between openness to international capital markets and growth. Indeed, both China and India have grown rapidly during the 1990s with only limited openness to international capital markets and appeared relatively immune from the east Asian financial crisis. It is true that there is as yet little convincing econometric evidence bearing on the benefits or costs of open capital markets. However, all the economically most advanced countries are open to international flows of capital, which suggests that this should be the eventual goal for other countries. In addition, countries that close themselves off to international flows of capital also thereby protect the financial sector from foreign competition, which reduces the efficiency of this important industry. Finally, I suspect, but cannot of course establish, that with regard to empirical work on the benefits of capital account liberalization, the economics profession is a little behind where we were a decade ago on trade liberalization, when empirical work showing its benefits was widely regarded as highly suspect, too.

But the critics of international capital mobility are correct to this extent: its potential for economic benefit can only be realized if the frequency and scale of financial crises can be reduced. The founders of the Bretton Woods system provided for the use of controls on international capital flows to reduce the likelihood of such crises. Some controls—particularly 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 an economy are strengthened. The use of controls to limit capital *outflows* has been advocated in the recent crises by several academics and adopted by Malaysia. But it is surprising and impressive how few countries have enacted capital controls in recent years. Indeed, policymakers in Latin American countries that often had such controls in the 1980s have rejected them this time around, emphasizing that the controls were inefficient, widely avoided, and had cost them dearly in terms of capital market access. It remains an open question whether more countries will turn to capital controls in the next few years, either in normal times or in the midst of crises. The answer will depend to an important extent on the success of other financial reforms that are implemented in the next few years.

I will argue not only that the international system needs a lender of last resort, so that the global economy can reap greater net benefits from international capital mobility, but also that the IMF has increasingly been playing the role of crisis manager for the last two decades (Boughton, 1998). Changes in the international system now under consideration—particularly those relating to efforts to bail in the

private sector—should make it possible for the IMF to exercise the lender of last resort function more effectively.

In focusing on the Fund's potential role as lender of last resort, I leave aside its other important functions. For example, Article I(i) of the Articles of Agreement, as enacted in 1944, describes the first of its fundamental purposes as being: "[t]o promote international monetary cooperation through a permanent institution which provides the machinery for consultation and collaboration on international monetary problems." Other functions of the Fund include lending for current account purposes to countries that lack market access; surveillance and the associated provision of information; and technical assistance, including policy advice and monitoring.

Let me immediately turn to 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 discussed earlier, even the domestic lender of last resort—whether as crisis lender or as crisis manager—is not necessarily the central bank. The IMF has resources to act as a crisis lender, because its financial structure, close to that of a credit union,<sup>12</sup> gives it access to a pool of resources which it can lend to member countries. The IMF also has been assigned the lead as crisis manager in negotiating with member countries in a crisis and helping to arrange financing packages. Finally, as will be discussed below, it also has the ability—not so far used—to create international reserves in a crisis.

The question arises whether the IMF, as crisis lender, has sufficient resources to do the job. The Fund has reached its present size as a result of a series of increases in countries' quotas—that is, the amount which members of the IMF agree to deposit in the Fund in their own currencies. Relative to the size of the world economy, the IMF has shrunk significantly since 1945. If the Fund were today the same size relative to the output of its member states as it was in 1945, it would be more than three times larger.<sup>13</sup> If the quota formula applied in 1945 were used to calculate actual quotas today, the Fund would be five times its present size. If the size of the Fund had been maintained relative to the volume of world trade, it would be more than nine times larger; that is, the size of the Fund would be over \$2.5 trillion. Since the Fund was set up at a time when private capital flows were very small, its scale relative to private capital flows has declined even more than its size relative to trade flows.

Despite this significant shrinkage relative to the original conception, the Fund as lender of last resort is still able to assemble a sizeable financial package in response to a crisis. In case of systemic problems, the Fund can augment the use of its own resources by borrowing. Further, as demonstrated in the recent Brazilian and east Asian financial rescue packages, member governments and other international financial institutions may add significantly to these packages in cases they deem to be of particular importance. Whether the Fund will in future be large

<sup>12</sup> The analogy is due to Kenen (1986).

<sup>13</sup> Total quotas are approximately \$300 billion. The effective availability of resources to lend is smaller, since the weaker currencies held by the Fund are not in practice usable for lending.

enough relative to the scale of problems 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.

The earlier discussion noted in the domestic case that while 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 Executive Board of the Fund 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.” These SDRs would augment the reserves of member countries. It is easy to envisage circumstances under which a targeted increase in reserves would be useful to prevent a seizing up of flows of credit in the world economy; indeed, for a short period that seemed to be the case in the fall of 1998. However, a general allocation of SDRs has to be made in proportion to quota holdings and so this mechanism would not in its current form be well-suited to dealing with a problem that affects a specific group of countries.

The IMF thus has the capacity to act as crisis lender to individual countries, and in specified circumstances, through an issue of Special Drawing Rights, could lend more broadly. It also acts as crisis manager. Kindleberger (1996, p. 188) complains that the Fund is too slow in emergencies, but in Korea in late 1997 the IMF has demonstrated an ability to move very rapidly, using the Emergency Financing Mechanism introduced after the Mexican crisis in 1994. The main constraint on the IMF’s ability to react speedily in a crisis is that governments suffering a financial crisis delay too long in approaching it, in part because excessive delay is a common characteristic of governments that experience financial crises, but also because they hope to avoid taking the actions that would be needed in a Fund program.

## **The Evolving Context of the International Financial System**

The IMF already acts in important respects as international lender of last resort, but the job can surely be done better. However, before addressing that issue directly, I will discuss four central elements in the ongoing evolution of the international financial system: exchange rate systems; reserve holdings; measures to bail in the private sector; and international standards.

In regard to the first subject, over a century of controversy has produced no clear answer to the question of which exchange rate system or monetary regime is best. The best exchange rate for a country seems to depend on the country’s economic history, particularly its history of inflation. Nonetheless, it is striking that the major external financial crises of the last three years—in Thailand, Korea, Indonesia, Russia and Brazil—have affected countries with more or less pegged exchange rates. Further, the assumption within these countries that the exchange rate was stable profoundly affected economic behavior and certain kinds of risk taking, especially in the banking system, and contributed to the severity of the post-devaluation crises.

The link between pegged exchange rates and susceptibility to crisis is far from ironclad, however. Several countries with very hard pegs, particularly Argentina and Hong Kong, have succeeded with fixed exchange rates. Some countries with flexible rates, among them Mexico, South Africa and Turkey, have been severely affected by the global economic crisis. Nor should we forget that many countries benefitted from using a pegged or fixed exchange rate as a nominal anchor in disinflation efforts and that the fear of devaluation is often a vital discipline for weak governments. Nonetheless, the virulence of the recent crises is likely to shift the balance towards the choice of more flexible exchange rate systems, including crawling exchange rate pegs with wide bands.

But while the number of nominal exchange rate pegs may decline in the coming years, the world is unlikely to move to a system in which exchange rates for all countries float freely. If countries desire to fix their exchange rates, they may well want to do so definitively, through a currency board. In the longer run, if Europe's move to a single currency succeeds, the result may be additional currency unions and fewer currencies. Because sharp shifts in international investor sentiment regarding even a country with a floating rate can set off a panic and contagion, and because some countries will continue to peg their rates, the need will still exist for an international lender of last resort.

Second, regarding the issue of reserves, there has been surprisingly little emphasis on the fact that countries with very large foreign exchange reserves have generally fared better in the recent economic crises than those with small reserves. However, a number of countries, particularly Korea, have recognized that ratio of reserves to short-term external liabilities is an important factor determining the likelihood of a financial crisis (Calvo, 1995), and are accumulating reserves accordingly.<sup>14</sup>

Foreign exchange reserves can be built up in several ways. The most obvious approach is to run a current account surplus; indeed, it is likely that a general desire by emerging market countries to build up reserves by running current account surpluses will impart a deflationary impact to the world economy in the next few years. Reserves can be borrowed, although the interest costs are typically well above the return on reserves. Argentina and a few other countries have put into place a variation on the idea of borrowing reserves, which is to arrange for precautionary or contingent lines of credit, which can be drawn on at short notice if needed. International reserves might also be increased by international agreement on, for example, an issue of Special Drawing Rights. It is not possible without a more detailed analysis to decide which approach is preferable: the approaches differ in terms of effects on aggregate demand, the distribution of seigniorage and other variables. However, I expect that one way or another, the recent experience of crises will lead to larger holdings of reserves.

Third, no topic in the new international financial architecture has received as

<sup>14</sup> The focus in the text is on the numerator of the ratio of reserves to short-term debt; however, countries need also to ensure that the denominator stays under control. This element plays an important role in the evolving international architecture, but I shall not pursue it here.

much public attention as the need to involve the private sector in the resolution of financial crises. The arguments are simple and compelling. At the economic level, as the role of private capital flows in the international economy increases, the public sector should not take upon itself the full responsibility for financing countries from which the private sector is withdrawing, for to do so is to court moral hazard on a major scale, to set the wrong incentives for private sector investors and to accept an impossible task—since the public sector will not in the end have enough resources to carry out such a commitment. At the political level, elected officials are unwilling to make public money available for unlimited bailouts of previously incautious private investors.

One approach, just mentioned, is to put in place precautionary lines of credit from private sector lenders. Such lines of credit can serve as a useful supplement to the holding of reserves, and might well be cheaper than actually increasing reserves. A second approach, suggested in a report by the G-10 deputies after the Mexican crisis, is the proposal that bond contracts should be modified to facilitate the rescheduling of payments in the event of a crisis, including by permitting creditors to make decisions by majority rather than unanimity.<sup>15</sup> Yet another suggestion, associated with Jeffrey Sachs, is the possibility of a mechanism which would formally impose or allow a stay on payments by a country in financial crisis, a proposal which is sometimes referred to as international bankruptcy. Some developing countries object that such measures would make it more expensive for them to borrow, but most likely that would reflect a more appropriate pricing of risks.

Private sector involvement in external financing crises needs to be approached carefully, lest proposed solutions increase the frequency of crises. For instance, it is sometimes proposed that banks (or other creditors) should always be forced to share in the financing of IMF programs. But if such a condition were insisted on, the creditors would have a greater incentive to rush for the exits at the mere hint of a crisis. This problem suggests that even with private sector involvement, a lender of last resort will continue to be necessary. It also suggests that the involvement of the private sector should differ according to the circumstances of each country: sometimes a formal approach may be necessary, as in Korea at the end of 1997; at other times less formal discussions could serve better; and on occasion, if a country enters an IMF program sufficiently early, perhaps private creditors need not be approached at all.

Fourth, because weaknesses in financial sectors and in the provision of information were such an important factor in the recent crises, a major effort is now underway to encourage emerging market countries to meet agreed international standards of financial and corporate sector behavior, as well as the provision of information. The best-known standards are those for banking, defined by the Basel Committee on Banking Supervision. The IMF's Special Data Dissemination Standard has just gone into full operation. Codes of fiscal practice and monetary and financial transparency are also being prepared by the IMF in cooperation with other institutions. A major international effort will be undertaken to improve

<sup>15</sup> This possibility is developed in the report of the [G-22] Working Group on *International Financial Crises*. See also the speech by Gordon Brown (1998).

banking standards, in part through international monitoring and IMF surveillance in cooperation with the World Bank. Among other important international standards already developed or in the process of development are international accounting standards, International Organization of Securities Commissions (IOSCO) standards for the operation of securities markets, and an international standard for bankruptcy regulations.

The main incentives for a country to adopt any of these standards are the expectation that the economy would operate more efficiently and the hope that international investors would treat the economy more favorably. In fact, most leading emerging market countries have subscribed to the IMF's Special Data Dissemination Standard, which suggests that these incentives may suffice to encourage participation in international standards. Nonetheless, further incentives may prove useful; for instance, the risk weights assigned by regulators in creditor countries could reflect the recipient country's observance of the standards. Further incentives can be provided by the appropriate design of official lending facilities.

### **Improving the Functioning of the International Lender of Last Resort**

At the end of 1997, the IMF introduced the Supplemental Reserve Facility (SRF), which can make short-term loans in large amounts at penalty rates to countries in crisis. SRF loans have been made to Korea, Russia, and Brazil, subject to conditions that certain economic policies be followed. In addition, in April 1999, the Executive Board of the IMF established the Contingent Credit Line (CCL) facility, designed to provide countries with a line of credit that can be drawn on in the event they are 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 towards meeting international standards in a variety of areas. The CCL is thus intended to provide an element of insurance and reassurance for countries with good policies, and incentives for others to pursue good policies, rather than to come to the assistance of countries that are already in trouble. The lending terms for the CCL are similar to those for the SRF. No CCLs have yet been arranged.

Calomiris (1998) and Calomiris and Meltzer (1998) recommend that the IMF act only as lender of last resort, under Bagehot rules, and only to countries that meet a stiff set of requirements, most importantly on the banking system. Among these conditions is the requirement that foreign banks be allowed to operate in the country, a reform that countries should adopt in any case. Loans would be made to qualifying countries on the basis of collateral, and without policy conditionality. Without going into the overall merits of their analysis,<sup>16</sup> I would like to note that

<sup>16</sup> I note for the record that the suggestion that the IMF should operate only as lender of last resort either overlooks or grossly undervalues the other functions carried out by the IMF, which were noted earlier in this discussion.

the CCL goes some way towards meeting their proposals. It would further be desirable if the rate charged for access to the CCL and the SRF depended on the extent to which countries meet the relevant international standards. For example, a nonqualifying country might pay a higher penalty interest rate, or be subject to tougher policy conditionality, or in extreme cases, be denied access to the lender of last resort funds.

IMF lending under the Supplemental Reserve Facility incorporates the classic Bagehot (1873) prescription that crisis lending should be at a penalty rate. Policy conditionality can be interpreted as a further element of the penalty, as seen from the viewpoint of the borrower country's policymakers. But what about the Bagehot prescriptions that lending should take place on good collateral, and that institutions that would be bankrupt in normal times should not be saved?

The Articles of Agreement permit the Fund to ask for collateral, but it has rarely done so. The Fund and the World Bank are regarded as preferred creditors, who have a first claim on payments made by countries in debt to them, and their collateral is thus the threat of denying access to global capital markets to countries that default. That is the main, and a powerful and effective, incentive for countries to repay—which is almost always done, in full and on time. While collateralized lending should remain a possibility for the Fund, it does not seem to be essential given the Fund's preferred creditor status.

The more general Bagehot prescription that institutions which are truly bankrupt should not be saved by a lender of last resort is difficult to apply in the international context. To the extent that foreign creditors have claims on private sector corporations in a debtor country, the bankruptcy rules for the debtor country should apply and the Bagehot prescription would be relevant. But it has to be recognized that bankruptcy regulations in many emerging market countries have been ineffective, which is why an effort is now underway to develop an international standard for a domestic bankruptcy code. For a sovereign debtor, the ability to generate repayments is more a matter of political than of economic feasibility. There is no bankruptcy status for a sovereign, but workout procedures, including those of the Paris and London Clubs, and possibly those to be developed as private sector bail-ins are considered further, play a similar role.

The one Bagehot prescription that does not apply in an international crisis is that of lending freely, if by freely is meant without limit. As already discussed, such a policy would create too much moral hazard.<sup>17</sup> How can an international crisis lender and manager deal with moral hazard problems? Charging a penalty rate of interest should help discourage borrower moral hazard, but moral hazard for borrowers is of much less concern than for investors. Borrower moral hazard is already deterred by the requirements of policy conditionality. Governments try to avoid going to the IMF—indeed they frequently delay too long—and policymakers who preside over a crisis and then have to turn to the IMF generally lose office, as witness the Asian crisis countries and Russia.

<sup>17</sup> To say this does not, however, determine the optimal size of crisis loans.

Investor moral hazard—that a lender of last resort would encourage investors to loan unwisely—is a more serious concern. In considering this issue, it is important to distinguish the hazards associated with different types of international capital flows.<sup>18</sup> In the case of equity investment, for example, the investor needs to be held responsible—and they have been, for equity investors have taken large losses in the recent crises. In the case of interbank lines of credit, however, the responsibility for addressing the risk of unwise lending because of moral hazard lies as much with the government of the lender as with the borrower government, for it is the former which supervises and tends to protect its banks. Lender supervisory authorities will have to recognize the responsibilities of their institutions to participate in workout procedures and private sector bail-ins when necessary.

The single most important change in the international system that will tend to limit moral hazard by encouraging better monitoring and self-regulation by capital market participants is the adoption of better methods of involving the private sector in financing the resolution of crises. As discussed above, the issues here are immensely difficult; they are also immensely important. Unless better ways of involving the private sector are found, the IMF will not be able to perform its proper function as international lender of last resort, both as crisis lender and crisis manager. At present, the official sector is seeking to involve private sector lenders in several countries in crisis; as this experience is analyzed within the coming months, some general principles for how to involve the private sector should be distilled and begun to be implemented in cases of crisis lending by the IMF and other official institutions.

The crises of the last five years have revealed major weaknesses in the structure of the international economy. It is urgent to start developing and implementing the constructive solutions that have been proposed, among them improvements in transparency, the adoption of appropriate exchange rate systems, the development and monitoring of international standards, including a bankruptcy standard, the development of precautionary lines of credit, and methods to involve the private sector in financing the resolution of emerging market crises. Important progress has been made during the last twelve months. As these changes continue to be implemented, the role of the international lender of last resort will become both better defined and more effective.

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