# THE INTERNATIONAL LENDER OF LAST RESORT: WHAT ARE THE ISSUES?

by

Frederic S. Mishkin

Graduate School of Business, Columbia University
and
National Bureau of Economic Research

Uris Hall 619
Columbia University
New York, New York 10027
Phone: 212-854-3488, Fax: 212-316-9219
E-mail: fsm3@columbia.edu

July 2000

Prepared for the Kiel Week Conference, "The World's New Financial Landscape: Challenges for Economic Policy," Kiel Institute of World Economics, Kiel, Germany, June 19-20, 2000. I thank for their helpful comments participants at the Kiel Week conference and at a seminar at the Board of Governors of the Federal Reserve System. Any views expressed in this paper are those of the author only and not those of Columbia University or the National Bureau of Economic Research.

The International Lender of Last Resort:
What are the Issues

JEL No. F3, G2

## ABSTRACT

This paper argues that an international lender of last resort can play an important role in improving the functioning of the international financial system. It outlines eight principles to help ensure that the international lender of last resort will be both effective and limit the moral hazard that its presence creates. At the present time, the International Monetary Fund appears to be the only international financial institution capable of acting as the international lender of last resort, but the analysis in this paper suggest that its current activities interfere with effective performance of this role.

Frederic S. Mishkin
Graduate School of Business
Uris Hall 619
Columbia University
New York, NY 10027
and NBER
fsm3@columbia.edu

In the 1990s, we have seen financial crises erupt in emerging market countries that have not only had devastating consequences in the countries experiencing the crises, but have roiled financial markets in other emerging market and industrialized countries as well. The classic remedy for stopping financial crises from getting out of control is the provision of liquidity by the so-called lender of last resort. Indeed, in the recent crises, the international financial institutions, particularly the IMF, have provided access to huge amounts of liquidity, on the order of $100 billion during the Asian crisis, to stem these crises.

The recent crises thus have brought the role of an international lender of last resort into the limelight, which raises the following basic questions. First: Do we need an international lender of last resort? Could domestic central banks instead perform this role, as is the traditional view (Bagehot, 1873)? Second: How Should the International Lender of Last Resort Operate? What are the principles that should guide the international lender of last resort if it is to be effective? Third: Who should be the international lender of last resort? Should the IMF do it and if so, does it need to be reformed to perform this role effectively. Alternatively, should another organization have the mandate to be the international lender of last resort?

This paper discusses what are the issues for an international lender of last resort by providing some answers to these questions. But in order to understand the role of an international lender of last resort, we must first provide an answer to a more basic question: What is a financial crisis? Only then we can evaluate how an international lender of last resort can be used to stop financial crises.

## II.
## WHAT IS A FINANCIAL CRISIS?

What is a financial crisis can be derived from an asymmetric information analysis of the type described in Mishkin (1991,1996a, 1999, 2000). A financial crisis is a nonlinear disruption to financial markets in which the asymmetric information problems of adverse selection and moral hazard become much worse, so that financial markets are unable to efficiently channel funds to those who have the most productive investment opportunities.

## How Do Financial Crises Occur?

In most financial crises, and particularly in the Mexican and East Asian crises recently, the key factor that caused asymmetric information problems to worsen and launch a financial crisis is a deterioration in balance sheets, particularly those in the financial sector. The underlying cause of the deterioration in balance sheets was an interaction of poor government policies with a financial structure that left these emerging market countries highly vulnerable. This perspective has important implications on whether there is a need for an international lender of last resort, and if so, what principles should guide its operation.

## The First Stage

A key factor behind the recent financial crises was financial liberalization that resulted in the lending boom. Once restrictions are lifted on both interest-rate ceilings and the type of lending allowed, lending increased dramatically, fed by inflows of foreign capital. The problem is not that lending expands, but that it expands so rapidly that excessive risk-taking is the result, with large losses on loans in the future. There are two reasons that excessive risk-taking takes place after financial liberalization. The first is that managers of banking institutions often lack the expertise to manage risk appropriately when new lending opportunities open up after financial liberalization. In addition, with rapid growth of lending, banking institutions can not add the necessary managerial capital (well-trained loan officers, risk-assessment systems, etc.) fast enough to enable these institutions to screen and monitor these new loans appropriately.

The second source of systemic risk that promoted excessive risk-taking was the inadequacy of the regulatory/supervisory system. Even if there is no explicit government safety net for the banking system, there clearly is an implicit safety net that creates a moral hazard problem. Depositors and foreign lenders to the banks, knowing that there are likely to be government bailouts to protect them, have little incentive to monitor banks, with the result that these institutions have an incentive to take on excessive risk by aggressively seeking out new loan business. In order to prevent this moral hazard problem, excessive risk taking needs to be restricted by adequate government regulation. These include the adoption of adequate accounting and legal standards, disclosure requirements, restrictions on certain holdings of assets, and capital standards. Adequate government supervision is also needed in order to monitor compliance with the regulations and assess whether the proper management controls are in place to limit risk.

Emerging market countries, particularly those in Mexico and East Asia, were notorious for weak financial regulation and supervision. When financial liberalization yielded new opportunities to take on risk, these weak regulatory/supervisory systems could not limit the moral hazard created by the government safety net and excessive risk-taking was the result. This problem was made even more severe by the rapid credit growth in the lending boom which stretched the resources of the bank supervisors. Bank supervisory agencies were unable to add to their supervisory capital (well-trained examiners and information systems) fast enough to enable them to keep up with their increased responsibilities both because they had to monitor new activities of the banks, but also because these activities were expanding at a rapid pace.

Capital inflows made this problem even worse. Once financial liberalization was adopted, foreign capital flew into banks in emerging market countries because it earned high yields but was likely to be protected by the government safety net, whether provided by the government of the emerging market country or by international agencies such as the IMF. The result was that capital inflows helped fuel a lending boom which led to excessive risk-taking on the part of banks. Folkerts-Landau, et. al (1995), for example, found that emerging market countries in the Asian-Pacific region with large net private capital inflows also experienced large increases in their banking sectors.

The outcome of the lending boom arising after financial liberalization was huge loan losses and a subsequent deterioration of banks' balance sheets. In the case of Mexico and the East-Asian crisis countries, the share of nonperforming loans to total loans has risen to between 15 and 35 percent.[1] The deterioration in bank balance sheets was the key fundamental that drove emerging market these emerging market countries into their financial crises.

The deterioration in bank balance sheet promotes the first stage of a financial crisis by causing banks to restrict their lending in order to improve their capital ratios.

[1] See Goldstein (1998) and Corsetti, Pesenti and Roubini (1998).

If the deterioration in bank balance sheets is severe enough, it can even lead to bank panics, in which there are multiple, simultaneous failures of banking institutions. Indeed, in the absence of a government safety net, there is some risk that contagion can spread from one bank failure to another, causing even healthy banks to fail. The source of the contagion is asymmetric information. In a panic, depositors, fearing the safety of their deposits and not knowing the quality of the banks' loan portfolios, withdraw their deposits from the banking system, causing a contraction in loans and a multiple contraction in deposits, which then causes other banks to fail. In turn, the failure of a bank means the loss of the information relationships in which that bank participated, and thus a direct loss in the amount of financial intermediation that can be done by the banking sector. The outcome is an even sharper decline in lending to facilitate productive investments, with an additional resulting contraction in economic activity.

**The Second Stage**

In emerging market countries, the deterioration in bank balance sheets can move the crisis into its second stage, a currency crisis which then tips the economy over into a full-fledged financial crisis. A weak banking system makes it less likely that the central bank will take the steps to defend a domestic currency, which means that expected profits from selling the currency have now risen.[2] For example, the central bank in a country with a weakened banking system will fear raising interest rates, because any rise in interest rates to keep the domestic currency from depreciating has the additional effect of weakening the banking system. Thus, when a speculative attack on the currency occurs in an emerging market country (in which speculators sell large amounts of the domestic currency for foreign currency), if the central bank raises interest rates sufficiently to defend the currency, the banking system may collapse.

The weakened state of the banking sector along with the high degree of illiquidity in Mexico and East Asian countries before the crisis, then set the stage for the currency crisis. With these vulnerabilities, speculative attacks on the currency could have been triggered by a variety of factors. In the Mexican case, the attacks came in the

[2] In addition, the cost of bailing out the insolvent banking sector could produce substantial fiscal deficits which also puts downward pressure on the currency (Burnside, Eichenbaum and Rebelo 1998).

wake of political instability in 1994 such as the assassination of political candidates and an uprising in Chiapas. Even though the Mexican central bank intervened in the foreign exchange market and raised interest rates sharply, it was unable to stem the attack and was forced to devalue the peso on December 20, 1994. In Thailand, the attacks followed unsuccessful attempts of the government to shore up the financial system, culminating in the failure of Finance One. Eventually, the inability of the central bank to defend the currency because the required measures would do too much harm to the weakened financial sector meant that the attacks could not be resisted. The outcome was therefore a collapse of the Thai baht in early July 1997. Subsequent speculative attacks on other Asian currencies led to devaluations and floats of the Philippine peso and Malaysian ringgit in mid-July, the Indonesian rupiah in mid-August and the Korean won in October. By early 1998, the currencies of Thailand, the Philippines, Malaysia and Korea had fallen by over 30 percent, with the Indonesian rupiah falling by over 75 percent.

Two special institutional features of credit markets in emerging market countries explain why the devaluation in the aftermath of the currency crisis helped trigger a full-fledged financial crisis. Because of past experience with high and variable inflation rates these countries have little inflation-fighting credibility and debt contracts are therefore of very short duration and are often denominated in foreign currencies. This structure of debt contacts is very different from that in most industrialized countries, which have almost all of their debt denominated in domestic currency, with much of it long-term, and it explains why there is such a different response to a devaluation in emerging market countries than there is in industrialized countries.

There are three mechanisms through which the currency crisis causes a financial crisis to occur in emerging market countries. The first involves the direct effect of currency devaluation on the balance sheet of firms. With debt contracts denominated in foreign currency, when there is a devaluation of the domestic currency, the debt burden of domestic firms increases. On the other hand, since assets are typically denominated in domestic currency, there is no simultaneous increase in the value of firms' assets. The result is a that a devaluation leads to a substantial deterioration in firms' balance sheets and a decline in net worth, which, in turn, worsens the adverse selection problem because effective collateral has shrunk, thereby providing less protection to lenders. Furthermore, the decline in net worth increases moral hazard incentives for firms to take on greater risk because they have less to lose if the loans go sour. Because lenders are now subject to much higher risks of losses, there is now a decline in lending and hence a decline in investment and economic activity.

The damage to balance sheets from devaluation in the aftermath of the foreign exchange crisis was a major source of the contraction of the economies in East Asia, as it was in Mexico in 1995. This mechanism was particularly strong in Indonesia which saw the value of its currency decline by seventy-five percent, thus increasing the rupiah value of foreign-denominated debts by a factor of four. Even a healthy firm initially with a strong balance sheet is likely to be driven into insolvency by such a shock if it has a significant amount of foreign-denominated debt.

A second mechanism linking currency crises with financial crises in emerging market countries occurs because the devaluation can lead to higher inflation. Because many emerging market countries have previously experienced both high and variable inflation, their central banks are unlikely to have deep-rooted credibility as inflation fighters. Thus, a sharp depreciation of the currency after a speculative attack that leads to immediate upward pressure on prices can lead to a dramatic rise in both actual and expected inflation. Indeed Mexican inflation surged to 50% in 1995 after the foreign exchange crisis in 1994 and a similar phenomenon occurred in Indonesia. A rise in expected inflation after the currency crisis exacerbates the financial crisis because it leads to a sharp rise in interest rates. The interaction of the short duration of debt contracts and the interest rate rise leads to huge increases in interest payments by firms, thereby weakening firms' cash flow position and further weakening their balance sheets. Then, as we have seen, both lending and economic activity are likely to undergo a sharp decline.

A third mechanism linking the financial crisis and the currency crisis arises because the devaluation of the domestic currency can lead to further deterioration in the balance sheets of the banking sector, provoking a large-scale banking crisis. In emerging market countries, banks have many liabilities denominated in foreign currency which increase sharply in value when a depreciation occurs. On the other hand, the problems of firms and households mean that they are unable to pay off their debts, also resulting in loan losses on the assets side of the banks' balance sheets. The result is that banks' balance sheets are squeezed from both the assets and liabilities side and the net worth of banks therefore declines. An additional problem for the banks is that many of their foreign-currency denominated debt is very short-term, so that the sharp increase in the value of this debt leads to liquidity problems for the banks because this debt needs to be paid back quickly. The result of the further deterioration in bank balance sheets and their weakened capital base is that they cut back lending. In the extreme case in which the deterioration of bank balance sheets leads to a banking crisis that forces many banks to close their doors, thereby directly limiting the ability of the banking sector to make loans, the affect on the economy is even more severe.

The bottom line from this asymmetric information analysis is that the recent financial crises were the result of a systemic collapse in both financial and non-financial firm balance sheets that made asymmetric information problems worse. The result was that financial markets were no longer able to channel funds to those with productive investment opportunities which then had led to a severe economic contraction.

## II.
## DO WE NEED AN INTERNATIONAL LENDER OF LAST RESORT?

We have seen that a seizing up of information in the financial system when a financial crisis occurs leads to disastrous consequences for the economy. To recover, the financial system needs to be restarted so that it can resume its job of channeling funds to those with productive investment opportunities. The asymmetric information view thus provides a rationale for government intervention to get the financial system back on its feet, thereby preventing systemic risk episodes from spinning out of control.

In industrialized countries, domestic central banks have the ability to do this with a lender of last resort operation in which the central bank lends freely during a financial crisis. I will argue however, that central banks in emerging market countries are much less likely to have this capability. Thus there is a strong argument that an international lender of last resort may play a crucial role in limiting the damage from financial crises in these countries. However, even if there is a need for an international lender of last resort, an international lender of last resort does create a serious moral hazard problem that can make financial crises more likely. Thus an international lender of last resort which does not sufficiently limit these moral hazard problems can actually make the situation worse, a subject that is discussed in the section following this one.

**The Lender of Last Resort in Industrialized Countries**

In the face of a possible banking panic, a central bank in an industrialized country can provide liquidity to banks to prop them up, giving the government time to close them down in an orderly fashion. Indeed, this is exactly what the Federal Reserve did in 1984 when it lent $5 billion to Continental Illinois, one of the ten largest banks in the United States at the time, giving the FDIC time to take it over, thereby making sure that depositors did not suffer any losses. The result was that no further runs on other banks occurred and a panic was avoided.[3]

Not only can a central bank in an industrialized country be a lender of last resort to banks, but it can also play the same role for the financial system as a whole. Two prominent examples described in Mishkin (1991) occurred when the Federal Reserve provided liquidity in the aftermath of the Penn Central bankruptcy in June 1970 and the stock market crash of 1987. When Penn Central, a large commercial paper issuer went broke, the commercial paper market seized up, making it difficult for many corporations to roll over their commercial paper, raising the potential for cascading bankruptcies. The Fed came to the rescue by providing liquidity to and encouraging banks to lend to corporations that could not roll over their commercial paper.

After the stock market crash on October 19, 1987, securities firms needed to extend massive amounts of credit on behalf of their customers for their margin calls in order to keep the stock market and the related index futures market functioning in an orderly fashion. However, understandably enough, banks were growing very nervous about the financial health of securities firms and so were reluctant to lend to the securities industry at a time when it was most needed. There was thus a major danger of a spreading collapse of securities firms and a further market meltdown. To prevent this,

[3]There were problems in the way the Continental Illinois bailout was handled because not only depositors, but all creditors, were prevented from taking any losses. In addition, shortly afterward, the Comptroller of the Currency testified that not only Continental Illinois, but eleven other banks were considered "too big to fail". This led to a well known moral hazard problem because creditors of large banks now had less incentive to monitor the bank and pull out their funds if the bank was taking on excessive risk. These problems, however, do not imply that the lender-of-last resort operation wasn't the appropriate response. Instead they suggest moral hazard needs to be limited when a government safety net is provided for the banking system.

Alan Greenspan, the new Fed Chairman, announced before the market opened on Tuesday, October 20, the Federal Reserve's "readiness to serve as a source of liquidity to support the economic and financial system." In addition, the Fed made it clear that it would provide liquidity to any bank that would make loans to the securities industry, although this did not prove to be necessary. Indeed, what is striking about this episode is that the extremely quick intervention of the Fed resulted not only in a negligible impact on the economy of the stock market crash, but also meant that the amount of liquidity that the Fed needed to supply to the economy was not very large (see Mishkin (1991).

A key reason that central banks in industrialized countries can successfully engage in lender-of-last-resort operations is that the institutional structure of financial systems in most industrialized countries has the following two features: 1) debt contracts are almost solely denominated in domestic currency; and 2) because inflation has tended to be moderate, many debt contracts are of fairly long duration. As a result, the monetary expansion resulting from injecting liquidity into the financial system helps stimulate recovery of the economy even further. Injecting reserves, either through open market operations or by lending to the banking sector, causes the money supply to increase, which in turns leads to a higher price level. Given that debt contracts are denominated in domestic currency and many debt contracts are of fairly long duration, the reflation of the economy causes the debt burden of households and firms to fall, thereby increasing their net worth. As outlined earlier, higher net worth then leads to reduced adverse selection and moral hazard problems in financial markets, undoing the increase in adverse selection and moral hazard problems induced by the financial crisis. In addition, injecting liquidity into the economy raises asset prices such as land and stock market values, which also cause an improvement in net worth and a reduction in adverse selection and moral hazard problems. Also, as discussed in Mishkin (1996b), expansionary monetary policy promotes economic recovery through other mechanisms involving the stock market and the foreign exchange market.[4] Thus the expansionary

[4]Note that not all industrialized countries are alike in their ability to use expansionary monetary policy to recover from a financial crisis. If a country has a commitment to peg its exchange rate to a foreign currency, then expansionary monetary policy may not be an available tool to promote recovery because pursuing such a policy might force a devaluation of its currency. This problem is of course particularly acute for a small country in a pegged exchange rate regime. Even if a country has a flexible exchange rate, expansionary monetary policy to promote recovery might cause a depreciation

monetary policy associated with a lender-of-last-resort operation works in the right direction and helps promote recovery from the financial crisis.

**The Lender of Last Resort in Emerging Market Countries**

However, institutional features of the financial systems in emerging markets countries imply that it may be far more difficult for the central bank to promote recovery from a financial crisis with a lender-of-last resort operation. As mentioned before, many emerging markets countries have much of their debt denominated in foreign currency. Furthermore, their past record of high and variable inflation has resulted in debt contracts of very short duration and expansionary monetary is likely to cause expected inflation to rise dramatically.

As a result of these institutional features, in emerging market countries a lender-of-last-resort operation is far less likely to be successful. Given the past record on inflation, in an emerging market country central bank lending to the financial system in the wake of a financial crisis which expands domestic credit might arouse fears of inflation spiraling out of control.

In this case the expansionary monetary policy is likely to cause the domestic currency to depreciate sharply. As we have seen before, the depreciation of the domestic currency leads to a deterioration in firms' and banks' balance sheets because much of their debt is denominated in foreign currency, thus raising the burden of indebtedness and lowering banks' and firms' net worth. In addition, the upward jump on expected inflation is likely to cause interest rates to rise because lenders need to be protected from the loss of purchasing power when they lend. As we have also seen, the resulting rise in interest rates causes interest payments to soar and the cash flow of households and firms to decline. Again the result is a deterioration in households' and firms' balance sheets, and potentially greater loan losses to banking institutions. Also because debt contracts are of very short duration, the rise in the price level from expansionary monetary policy does not affect the value of households' and firms' debts appreciably, so there is little

---

of the domestic currency which is considered to be intolerable by the authorities, particularly in smaller countries. Clearly, a large reserve currency country like the United States has the most flexibility to use expansionary monetary policy to reflate the economy as a tool to recover from or reduce the probability of a financial crisis.

benefit to their balance sheets from this mechanism as occurs in industrialized countries.

The net result of the expansionary monetary policy associated with the lender-of-last-resort operation in the emerging markets country with the above institutional structure is that it hurts the balance sheets of households, firms, and banks. Thus, the lender-of-last-resort operation has the opposite result to that found in industrialized countries during a financial crisis: it causes a deterioration in balance sheets and therefore amplifies adverse selection and moral hazard problems in financial markets caused by a financial crisis, rather than ameliorates them as in the industrialized country case.

**The Case for an International Lender of Last Resort**

The above arguments suggest that central banks in emerging market countries have only a very limited ability to extricate their countries form a financial crisis. Indeed, a speedy recovery from a financial crisis in a emerging markets country is likely to require foreign assistance because liquidity provided from foreign sources does not lead to any of the undesirable consequences that result from the provision of liquidity by domestic authorities. Foreign assistance does not lead to increased inflation which through the cash-flow mechanism hurts domestic balance sheets, and it helps to stabilize the value of the domestic currency which strengthens domestic balance sheets.

Thus since a lender of last resort for emerging market countries is needed at times and it cannot be provided domestically but must be provided by foreigners, there is a strong rationale for having an international lender of last resort. A further rationale for an international lender of last resort exists if there is contagion from one emerging market country to another during a financial crisis. Although, the jury is still out on this one, it does appear that a successful speculative attack on one emerging market country does lead to speculative attacks on other emerging market countries, which can lead to collapses of additional currencies. Thus currency crises do have the potential to snowball, and because these currency crises lead to full-fledged financial crises in emerging market countries, the risk of contagion is indeed a serious one. An international lender of last resort has the ability to stop contagion by providing international reserves to emerging market countries threatened by speculative attacks so that they can keep their currencies from plummeting. This assistance can thus keep currency and therefore financial crises from spreading.

## III.
## HOW SHOULD THE INTERNATIONAL LENDER OF LAST RESORT OPERATE?

Although the asymmetric information analysis above provides a rationale for an international lender of last resort, there is a cost. The existence of an international lender of last resort creates a serious moral hazard problem because depositors and other creditors of banking institutions expect that they will be protected if a crisis occurs. In the recent crisis episodes, governments in the crisis countries have used support from international financial institutions to protect depositors and other creditors of banking institutions from losses. This safety net creates a well-known moral hazard problem because the depositors and other creditors have less incentive to monitor these banking institutions and withdraw their deposits if the institutions are taking on too much risk. The result is that these institutions are encouraged to take on excessive risks which make financial crises more likely.

Thus to limit the moral hazard problem created by an international lender of last resort and to help it cope with financial crises more effectively, our analysis suggests eight principles to guide the operation of the international lender of last resort: 1) restore confidence to the financial System; 2) provide liquidity to restart the financial system; 3) provide liquidity as fast as possible; 4) restore balance sheets; 5) punish owners of insolvent institutions; 6) encourage adequate prudential supervision; 7) engage in lender-of-last-resort operations only for countries that are serious about implementing necessary reforms; and 8) engage in lender-of-last resort operations infrequently and only for short periods of time.

### Principle 1: Restore Confidence to the Financial System

The most important principle for an international lender of last resort is that it restore confidence in the financial system. Without confidence, participants will pull out from the financial markets and the financial system will not be able to channel funds to those with productive investment opportunities. Restoring confidence is thus essential to keeping the financial system operating efficiently, which is the key to preventing or promoting recovery from a financial crisis. However, restoring confidence is easier said than done and so requires several actions on the part of the international lender of last resort.

**Principle 2: Provide Liquidity to Restart the Financial System**

The first step in the process of keeping the financial system operating and restoring confidence is to provide ample liquidity so that markets stay in operation and restart. However, injecting liquidity into the financial system may not be effective unless the following three principles are followed.

**Principle 3: Provide Liquidity as Fast as Possible**

An important historical feature of successful lender of last resort operations, is that the faster the lending is done, the lower is the amount that actually has to be lent. This fact provides support for the second principle that the faster liquidity is provided in an international lender of last resort operation, the better. An excellent example occurred in the aftermath of the stock market crash on October 19, 1987. What is remarkable about this episode is that the Fed did not need to lend directly to the banks to encourage them to lend to the securities firms who needed funds to clear their customers' accounts. Because the Fed acted so quickly, within a day, and reassured banks that the financial system would not seize up, banks knew that lending to securities firms would be profitable and so it was in their interest to make these loans immediately even without borrowing from the Fed, which they then did. With confidence restored and the fear of crisis diminished, the actual amount of liquidity that the Fed needed to inject into the banking system through open market operations was quite small and this liquidity was removed shortly after the crisis was over.

In contrast, during the recent financial crises in Mexico and East Asia, the amount of liquidity made available was very large, exceeding $100 billion. In these episodes, putting together the rescue packages took time, on the order of several months. By this time, the crises had gotten much worse, with the result that much larger sums were needed to shore up the system. As the example of the Federal Reserve's lender of last resort operation in October 1987 indicates, a much smaller amount of funds would have done the trick in the recent crises if these funds could have been disbursed faster. The need for quick provision of liquidity to keep the amount of funds manageable suggest that credit facilities at an international lender of last resort must be designed to provide funds quickly.

**Principle 4: Restore Balance Sheets**

The asymmetric information analysis of financial crises indicates that the resolution of and recovery from a financial crisis requires a restoration of the balance sheets of both financial and non-financial firms. Restoration of balance sheets of non-financial firms requires a well-functioning bankruptcy law that enables the balance sheets of these firms to be cleaned up so they can regain access to the credit markets. Restoration of balance sheets of financial firms requires that insolvent financial institutions be closed down and the injection of public funds so that healthy institutions can buy up the assets of insolvent institutions. Successful resolution of the crisis also requires the creation of entities like the Resolution Trust Corporation in the United States, which can sell off assets of failed institutions and get them off the books of the banking sector.

Crucial to a successful resolution of the financial crisis is that half measures to clean up balance sheets are avoided. With balance sheets only partially restored, weak financial institutions may hold back on their lending because they may need to increase capital ratios in the future. Alternatively, leaving weak financial institutions in operation may encourage them to take on excessive risk because they have little to lose, thus diminishing confidence in the future health of the financial system. Insolvent financial institutions must be put out of their misery.

The international lender of last resort and potentially other international organizations can help this process by sharing their expertise and by encouraging the governments in crises countries to take the steps to create a better legal structure and better resolution process for failed financial institutions.

### Principle 5: Punish (at a minimum) Owners of Insolvent Institutions

There are two reasons why encouraging punishment of owners of insolvent financial institutions is important for an international lender of last resort. In any emerging market countries, owners of insolvent financial institutions are frequently provided with funds which enables them to keep their institutions in operation or to pocket substantial wealth which they often ship out of the country before the institution fails. Bailing out the owners in this way leads to a tremendous moral hazard problem because knowing that this will occur, these owners have incentives to take on huge risks because they have so little to lose. The result is that a financial crisis is far more likely. This moral hazard can be limited by ensuring that owners of insolvent institutions are punished: that is, are not allowed to keep their institutions operating and when they are closed down, suffer substantial losses. Of course, encouraging losses for large creditors of financial institutions goes even further in reducing moral hazard incentives for risk taking at financial institutions because these creditors now have incentives to monitor the institution and pull out their funds if it is taking on excessive risk.

In addition, encouraging the punishment of owners of insolvent financial institutions is necessary in order to generate sufficient public support for sufficient funds to clean up the balance sheets of the financial sector. For example, in Japan, this was not done with the bailout of the jusen in the mid 1990s. Public outrage that owners of these institutions, which include many large banks and reputedly some criminal figures, got off scot free is one reason why the public in Japan has been unwilling to support injection of sufficient public funds into the banking system to get it fully back on its feet. The consequences of a continuing weak banking system has been disastrous for Japan and is an important source of Japan's economic stagnation.[5] In the United States, in contrast, owners of insolvent savings and loans did incur substantial losses and sometimes were even thrown in jail. Such actions helped provide political support for the full bailout of the savings and loan industry in 1989.

---

[5] For example, see Mishkin (1998).

**Principle 6: Encourage Adequate Prudential Supervision**

The moral hazard problem created by the existence of a safety net for financial institutions also can be limited by the usual elements of a well-functioning prudential regulatory/supervisory system:[6] adequate disclosure requirements, adequate capital standards, prompt corrective action, careful monitoring of risk the institution's risk management procedures and monitoring of financial institutions to enforce compliance with the regulations. However, there are often strong political forces in emerging market countries which resist putting these kinds of measures into place. This has also been a problem in industrialized countries -- for example, an important factor in the U.S. savings and loan debacle was political pressure to weaken regulation and supervision (e.g. see Kane (1989) -- but the problem is far worse in many emerging market countries. What we have seen in the Asian crisis countries is that the political will to adequately regulate and supervise financial institutions has been especially weak because politicians and their family members are often the actual owners of financial institutions. An international lender of last resort is particularly well suited to encourage adoption of the above measures to limit moral hazard because it has so much leverage over the emerging market countries to whom it lends or who might want to borrow from it in the future.

There are two reasons why an international lender of last resort will be more successful if it actively encourages adoption of the above prudential regulatory/supervisory measures. First is that its lender-of-last-resort actions provide governments with the resources to bail out their financial sectors. Thus an international lender of last resort strengthens the safety net which increases the moral hazard incentives for financial institutions in emerging market countries to take on excessive risk. It can counter these incentives by strengthening the regulatory/supervisory apparatus in these countries to counter this problem. Second is that the presence of an international lender of last resort may create a moral hazard problem for governments in emerging market countries who, because they know that their financial sectors are likely to be bailed out, have less incentive to take the steps to prevent domestic financial

[6] E.g., see Mishkin (forthcoming).

institutions from taking on excessive risk. The international lender of last resort can improve incentives to reduce excessive risk taking by making it clear that it will only extend liquidity to governments that put the proper measures in place to prevent excessive risk taking.[7] Only with this kind of pressure can the moral hazard problem arising from lender-of-last-resort operations be contained.

**Principle 7: Engage in Lender-of-Last-Resort Operations Only For Countries that are Serious About Implementing Necessary Reforms**

One problem that arises for an international lender of last resort is that it knows that if it doesn't come to the rescue, the emerging market country will suffer extreme hardship and possible political instability. Politicians in the crisis country may exploit these concerns and engage in a game of chicken with the international lender of last resort: they resist necessary reforms, hoping that the international lender of last resort will cave in. Elements of this game were present in the Mexico crisis of 1995 and this was also an important feature of the negotiations between the IMF and Indonesia during its recent crisis.

An international lender of last resort will produce better outcomes if it makes it clear that it will not play this game. Just as giving in to your children may be the easy way out in the short run, but leads to children who are poorly brought up in the long run, so the international lender of last resort will be more successful by not giving in to short-run humanitarian concerns and let emerging market countries escape from necessary reforms. An international lender of last resort will improve its performance by being willing to walk away from a country that is not willing to help itself. Indeed, if it caves to one country during a financial crisis, politicians in other countries will see that they can get away with not implementing the needed reforms, making it even harder for the international lender of last resort to limit moral hazard.

**Principle 8: Engage in Lender-of-Last-Resort Operations Infrequently and Only for**

[7] See Goldstein (1998).

### Short Periods of Time

Because there is a tradeoff between the benefits of a lender-of-last-resort role in preventing financial crises and the moral hazard that it creates, a lender-of-last-resort role is best implemented only when it is absolutely necessary. An international lender of last resort thus has strong reasons to resist calls on it to provide funds under normal conditions. Furthermore, once a crisis is over, the liquidity that has been injected into the financial system needs to be removed in order to ensure that financial markets do not become dependent upon it. In other words, the lender-of-last-resort role will be more successful if it is implemented only very infrequently and for short periods of time.

## IV.
## WHO SHOULD BE THE INTERNATIONAL LENDER OF LAST RESORT?

Given that there is a need for an international lender of last resort, what institution would be best suited to perform this role and follow the principles outlined above?

Traditionally, central banks have acted as lenders of last resort because they have the advantage of being able to create the necessary liquidity at will. In addition, they have had experience with successfully performing this role. These facts would argue for the creation of a world central bank to act as an international lender of last resort. However, because it is highly unlikely that the major countries of the world would be willing to give up control of monetary policy to an international organization for the foreseeable future, creation of a world central bank is unrealistic.

Reasoning that the international financial institution that closest resembles a central bank is the Bank for International Settlements (BIS), which has a function of being a bank for central banks and thus might be characterized as the central banks' central bank, some economists (e.g, Shadow Open Market Committee, 1998) have advocated that the BIS take over the international lender of last resort role. However, even though the BIS does hold substantial amounts of deposits from central banks of industrialized countries, it is not quite right to see the BIS as engaging in traditional central banking functions. Rather than seeing the BIS as an organization that can inject liquidity into the world financial system, it is better thought of as a club for central bankers where they can share information and coordinate their activities. Indeed, the BIS role in the international financial system has become more important over time for exactly this reason: for example, it has become a useful site for coordination of prudential regulations, as with the Basel Committee for Bank Supervision which meets under the auspices of the BIS.

The last three principles in the previous section indicate that an international lender of last resort needs a lot of information in order to decide whether engaging in a lender-of-last-resort operation is absolutely necessary and is to a country that is serious about adequate prudential supervision. However, consistent with its role as a central bankers' club, the BIS is a small organization with under five hundred employees, a small fraction of the employment of the central banks that are members. Thus, the BIS does not currently have the capability, nor is it seeking the capability, to act as an international lender of last resort.

Indeed, the only international organization that currently has the staff to acquire the necessary information to effectively perform the international lender of last resort role is the International Monetary Fund (IMF). This is why, by default, it has ended up engaging in this role during the recent crisis episodes. One objection to the IMF's performing a lender of last resort role is that it cannot create unlimited liquidity as can a central bank. But as persuasively argued by Fischer (1999), it is not absolutely necessary that an international lender of last resort have unlimited resources to create liquidity, just that it has enough to do the job. Indeed, Fischer (1999) points out that under the gold standard, central banks in reality did not have an unlimited capability to create liquidity and yet were able to perform the lender of last resort role, and so the situation for the IMF in this regard is not all that different. It is true that the IMF's resources might limit its capabilities to manage a crisis, but it is not clear that this has been a problem in the recent crisis episodes. Furthermore, if the IMF requires more resources to adequately dead with financial crises, Fund quotas could be raised to get access to these resources.

**Is the IMF Set Up Well to Do It?**

If the IMF is the only crap game in town, i.e., the only international financial institution, capable of performing the international lender of last resort role, is it well designed to do this effectively? The principles in the previous section outlining how an international lender of last resort should operate suggest that the answer is no. Not surprisingly, the desire to improve the performance of the IMF in managing recent crises has led to numerous proposals for reform of the institution.

Although the IMF was originally set up to provide liquidity only in the short-term to cope with balance of payments imbalances, after the Latin American debt crisis in 1982 the IMF began to broaden its policy agenda and engage in longer-term lending to poor countries. The broadening of the IMF's agenda has continued over the years. With the replacement in 1999 of the Enhanced Structural Adjustment Facility (ESAF), under which long-term lending under preferred rates to poor countries was conducted, by the Poverty Reduction and Growth Facility (PRGF), the Fund now has an explicit goal of reducing poverty.[8] The Fund has also begun to venture into labor and environmental issues. Another feature of the IMF's lending is that it is frequent. Seventy countries have received credit under IMF programs for twenty or more years (see Vasquez, 1999).

The expansion of the IMF's activities clearly is at odds with the basic principle for operation of an international lender of last resort works best if the lender of last resort role is performed infrequently and for only short periods of time. Long-term lending is obviously inconsistent with lending for short periods of time, while continuous lending to countries over and over again is inconsistent with the need for lender-of-last-resort operations to be infrequent. The habit of frequent, continuous lending, makes it more likely that the IMF will engage in "crisis" lending when it might not be absolutely necessary, thereby increasing the moral hazard problem. In addition, continuous lending may make it hard for the IMF to resist providing loans when the country's government is not sufficiently committed to necessary reforms of the financial sector, thus making it more difficult for the IMF to adhere to Principle 7.

The mindset created by the IMF's engagement in frequent, long-term lending makes is highly problematic for other reasons. To limit the moral hazard problems inherent in long-term lending, conditionality on a wide range of issues is necessary to make sure the funds are used for the appropriate purposes. Designing this

[8]See International Monetary Fund (1999a) for a description of the mandate in Poverty Reduction and Growth Facility. For a discussion of the evolution of the IMF's activities over time, Boughton (1998), Krueger (1998), Vasquez (1999), Overseas Development Council (2000) and International Financial Institution Advisory Commission (2000).

conditionality takes time and as Principle 3 indicates, success of a lender-of-last-resort operation requires provision of liquidity as fast as possible.

The IMF is aware of the problem that time delays arising from putting conditionality into place creates and so established a Conditional Credit Line (CCL) facility in 1999 which allows preapproved countries with good policies to receive credit immediately without having to negotiate new conditions for the loan. However, so far no country has applied for this facility. Countries seem to be concerned that applying for this credit facility will create concerns that the country is vulnerable to a financial crisis. In addition, they may be concerned that being dropped from this facility will be a sign to the markets that they are in serious trouble, possibly precipitating the financial crisis that they are trying to avoid. Indeed, this problem may make it very hard for the IMF to take away a country's approval for the CCL once it has been given to them, potentially giving the country less incentive to keep those good policies in place. The CCL has thus not yet solved the problem of developing a credit facility which enables them to perform the lender-of-last-resort role quickly and yet limit moral hazard.

Wide ranging conditionality also means that there is a lack of focus in IMF programs. As the analysis of financial crises indicates, the fundamental driving factor behind the recent financial crises has been microeconomic problems in the financial sector and this is why an international lender of last resort must focus on encouraging necessary reforms to ensure adequate prudential supervision of the financial system as in Principle 6. It is true that recent IMF programs for the crisis countries did have conditions dealing with financial sector reforms, but with so many other conditions, politicians in the crisis countries may pick and choose the conditions they want to follow. They are then likely to drag their feet on conditions involving financial sector reform which harm their close friends, and even family, and this is exactly what transpired in Indonesia with its IMF program after its financial crisis. Furthermore, because wide-ranging conditionality frequently imposes conditions that no industrialized country would tolerate, governments in emerging market countries can raise the flag of interference with sovereignty to garner political support to avoid the necessary reforms of the financial sector.

Another problem with wide-ranging conditionality has been raised by Feldstein (1998). Because these conditions are often considered onerous, their possible imposition may discourage countries from coming to the IMF at an early stage of the financial crisis.

Thus, it becomes more likely that IMF lending will be slow in coming, the opposite of what is proposed in Principle 3, thus making the financial crisis worse and requiring even larger provision of funds by the IMF.

Another problem with the expansion of IMF activities is that the IMF is less capable of acquiring the information and knowledge base it needs to perform the lender-of-last-resort role effectively. The IMF has been criticized for not understanding the difference between the recent crises in Mexico and East Asia from earlier balance of payments crises.[9] This led them to violate Principle 1 of the need for restoring confidence in the financial system when they advocated the closure of sixteen banks in Indonesia without setting up a safety net for the rest of the banking system. This led to a banking panic and a further collapse of the Indonesian ruppiah, which through the mechanisms described in the asymmetric information analysis in the first section, exacerbated the financial crisis. Indeed, one finding of a committee that I chaired that evaluated the IMF's research activities, IMF (2000a), is that the research staff was so overstretched that the organization did not have time to do the necessary thinking to get a better understanding of the nature of the crises they were facing.

The above problems with the expansion of the IMF's activities over time has led to calls for reform to narrow the IMF's focus. What is striking about several recent proposals for reform from many different sources, including the U.S. Treasury (Summers, 1999), the Council on Foreign Relations Task Force (1999), the Overseas Development Council Task Force (2000), and the Meltzer, International Financial Institutions Advisory Commission set up the U.S. Congress (2000), is that all of them call for a narrowing of the IMF's focus to issues involved with crisis management. Furthermore, the U.S. Treasury, Overseas Development Council Task Force and the Meltzer Commission have all recommend that the IMF get out of the long-term lending business. Although these reforms appear to have wide-spread support, it is not clear that the IMF is conducive to them. The report of the external evaluation committee for IMF surveillance, IMF (1999b), recommended a narrowing of focus for surveillance activities, yet this was questioned by the IMF's Executive Board and the staff.[10]

[9]For example, see Radelet and Sachs (1998) and Furman and Stiglitz (1998).

[10]See pages 96, 99, 100 of IMF (1999b).

## V.
## CONCLUDING REMARKS

This paper has argued that an international lender of last resort can play an important role in improving the functioning of the international financial system. It has also outlined eight principles to help ensure that the international lender of last resort will be both effective and limit the moral hazard that its presence creates. At the present time, the International Monetary Fund appears to be the only international financial institution capable of acting as the international lender of last resort, but its current activities interfere with effective performance of this role. Reforming the IMF to enhance its performance in managing financial crises is therefore likely to be at the top of the agenda for reform of international financial architecture.

## REFERENCES


Bagehot, W. (1873) Lombard Street: A Description of the Money Market, HS King, London.

Boughton, J. (1998). "From Suez to Tequila: The IMF as Crisis Managerd," mimeo. Washington, D.C.: International Monetary Fund.

Burnside, C., Eichenbaum, M. and S. Rebelo (1998). "Prospective Deficits and the Asian Currency Crisis," Federal Reserve Bank of Chicago, Working Paper-98-5, September 1998.

Corsetti, G., Pesenti, P. and N. Roubini (1998). "What Caused the Asian Currency and Financial Crisis? Part I and II," NBER Working Papers, No. 6833 and 6844.

Council of Foreign Relations (1999). *Safeguarding Prosperity in a Global Financial System: the Future International Financial Architecture*. Report of an Independent Task Force Sponsored by the Council of Foreign Relations.

Feldstein, M. (1998). "Refocusing the IMF," *Foreign Affairs* (March / April): 20-33.

Fischer, S. 1999. "On the Need for an International Lender of Last Resort," *Journal of Economic Perspectives*, 13 (4): 85-104.

Folkerts-Landau, D., Schinasi, G.J., Cassard, M., Ng, V.K., Reinhart, C.M., and M.G. Spencer (1995). "Effect of Capital Flows on the Domestic Financial Sectors in APEC Developing Countries," in M.S. Khan and C.M. Reinhart (eds.), *Capital Flows in the APEC Region*. Washington, D.C.: International Monetary Fund: 31-57.

Furman, J. and J.E. Stiglitz (1998),. "Economic Crises: Evidence and Insights from East Asia," *Brookings Papers on Economic Activity*, 2: 1-114.

Goldstein, M. (1998). *The Asian Financial Crisis*. Washington, D.C.: Institute for International Economics.

International Financial Institutions Advisory Commission. 2000. *Report.* Washington, D.C.

International Monetary Fund (1999a). "The Poverty Reduction and Growth Facility (PRGF) -- Operational Issues," Washington, D.C.: International Monetary Fund: Washington, D.C.

International Monetary Fund (1999b). *External Evaluation of IMF Surveillance: Report by a Group of Independent Experts.* Washington, D.C: International Monetary Fund.

International Monetary Fund (2000). *External Evaluation of IMF Research Activities: Report* *by a Group of Independent Experts.* Washington, D.C.: International Monetary Fund.

Kane, E.J. (1989). *The S&L Insurance Mess: How Did It Happen?* Washington, D.C.: Urban Institute Press.

Krueger, A. (1998). "Whither the World Bank and the IMF?" *Journal of Economic Literature*, 36:

Mishkin, F.S. (1991). "Asymmetric Information and Financial Crises: A Historical Perspective," in R.G. Hubbard (ed.) *Financial Markets and Financial Crises*. Chicago: University of Chicago Press: 69-108.

Mishkin, F.S. (1996a). "Understanding Financial Crises: A Developing Country Perspective," in M. Bruno and B. Pleskovic (eds.), *Annual World Bank Conference on Development Economics 1996*. Washington, D.C.: Washington D.C.: 29-62.

Mishkin, F.S. (1996b). "The Channels of Monetary Transmission: Lessons for Monetary Policy," *Banque De France Bulletin Digest*, 27: 33-44.

Mishkin, F.S. (1997). "The Causes and Propagation of Financial Instability: Lessons for Policymakers," in C. Hakkio (ed.), *Maintaining Financial Stability in a Global Economy* Kansas City: Federal Reserve Bank of Kansas City: 55-96.

Mishkin, F.S. (1998). "Promoting Japanese Recovery," in K. Ishigaki and H. Hino (eds.), *Towards the Restoration of Sound Banking Systems in Japan -- the Global Implications* Kobe: Kobe University Press: 130-161.

Mishkin, F.S. (1999). "Lessons from the Asian Crisis," *Journal of International Money and Finance*, 18, 4: 709-723.

Mishkin, F.S. (2000) "The Korean Financial Crisis: An Asymmetric Information Perspective," *Emerging Markets Review*, 1.

Mishkin, F.S. forthcoming. "Financial Market Reform," in Anne Krueger, ed. *Economic Policy Reform: What We Know and What We Need to Know*. Chicago: University of Chicago Press.

Radelet, S. and J.D. Sachs. (1998). "The East Asian Financial Crisis: Diagnosis, Remedies and Prospects," *Brookings Papers on Economic Activity*, 1: 1-74.

Overseas Development Council (2000). "The Future Role of the IMF in Development: An ODC Task Force Report.

Shadow Open Market Committee (1998). "Policy Statements and Position Papers, March 15-16, 1998," Bradley Policy Research Center Working Paper, PPS 98-01.

Summers, Lawrence (1999). "The Right Kind of IMF for a Stable Global Financial

System," speech presented at the London School of Business, December 14.
Vasquez, I. (1999). "The International Monetary Fund: Challenges and Contradictions," Paper presented to the International Financial Advisory Commission, September 28.