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Banking Crises and Public Policy in a World of Open Markets

How Should the International Financial System Be Reformed?

Theodor Paues

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Theodor Paues

STOCKHOLM UNIVERSITY
Department of Economics
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Advisor: Staffan Viotti

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1. Introduction

Throughout the world, the last twenty years have been characterized by financial liberalization and increased access to international credit markets. Most of the time this development is for the better. Emerging economies today have greater opportunities than before to finance investments, while savers in creditor countries benefit from higher growth rates abroad and increased scope for diversification of risks.

Unfortunately, the consequences when capital markets break down are very serious. Recent crises in Mexico (1995), Asia (1997-98), Russia (1998) and Brazil (1999) have shown how vulnerable countries can be when investors lose faith in the economy and capital suddenly flows out. Banking crises in, for example, Sweden (1992), USA (1980s) and France (1995) show that these problems are not limited to the developing world. In the last 15 years, 131 countries have experienced banking crises of some kind.¹ These can easily spread, and trigger or deepen macroeconomic crises, currency crises and sovereign debt crises. The cost can be enormous. Estimates of output losses from banking crises range from two or three per cent of GDP to almost half a year's worth of production.² The effects are the most dire in emerging markets, where banks are the dominant (often the *sole*) actors in the financial system.

A conclusion is that financial globalization needs to be accompanied by increased attention to the preservation of financial stability. This includes measures to prevent the build-up of risks by regulation and supervision, as well as mechanisms to manage and resolve crises that occur anyway. Orderly procedures for resolution of crises are important parts of prevention, since they mitigate the risk that small problems turn into disruptive panics. Furthermore, efficient resolution should affect financial actors also in peaceful times, by giving them incentives to address incipient problems before they become serious.

While adapting financial systems to new types of risks is primarily a task for national governments, some issues might be necessary to tackle on a global level. Since the Mexican and Asian crises, policymakers and academics have debated changes in the global financial system (known by the buzzword "the architecture") to make it better equipped to manage and prevent financial stress. Many proposals for reform have been filed. Some are grand schemes to build new global institutions and establish supra-national regulation and supervision. Others are modest calls for more transparency in financial markets and limited brush-offs of the present International Monetary Fund (the IMF).

The objective of this paper is to explore the link between national policy for financial stability and the debate on changes in the international financial system. The paper aims to provide a structured framework for analyzing the large and growing literature in these fields. The procedure used in the paper is to seek the need for global institutions and global policy in the areas where national governments are unable to handle financial

problems on their own. The focus of the paper is the fragility of banking systems and the resolution of banking crises. While having ties to the subject matter, the analysis does not cover issues related to stock market bubbles, sovereign debt restructuring, monetary policy, fiscal policy or exchange rate policy.

The remainder of the paper is organized as follows. In chapter 2, we introduce basic theory on liquidity and insolvency, as well as procedures to resolve these problems. We also discuss the need for special procedures for banks. In chapter 3, we analyse how exposure to international markets changes financial risks for a country. This covers what a country can do to resolve a crisis where cross-border lending is involved, and what the international community has done in the past to assist those countries that cannot restore stability by themselves. In chapter 4, we will study briefly recent changes in international financial organizations and some of the proposals for further reform. Chapter 5 concludes.

2. The national domain

2.1 Financial stress and bankruptcy

When discussing financial stress it is clarifying to distinguish between illiquidity and insolvency.³ An *illiquid* firm is unable to meet its obligations to its creditors. At times, economically viable firms might have such problems, and liquidity could hence be temporary. An *insolvent* firm has no realistic prospects for profits. Such firms could be able to meet their current payments, but since they are not economically viable, they will not be able to do so for very long.⁴ Since an insolvent firm does not produce any value, it is not economically justifiable to keep it running. An illiquid but solvent firm might however have prospects for future profits and there might be scope for a reconstruction of the firm and its debts. If the management of the firm maximizes the value of the institution at all times, these measures would be taken spontaneously. However, when a firm has actual or perceived difficulty to meet financial obligations, the incentives of the management and the individual creditors of the firms easily become conflicting. This can result in outcomes where economic value is lost.

If the management knows it will eventually have to default, it faces an incentive to extract value from the firm to itself, before the creditors become aware of the insolvency. For example, the management can sell the assets of the firm cheaply to connected entities (so-called *asset stripping*), or it can honor obligations only to creditors to which it has personal ties. Alternatively, the management might try to restore profitability before problems are exposed, by running the firm at imprudently high risk (so-called *gambling for resurrection*). As for the creditors, those who become aware that the firm will not be able to honor all of its obligations face an incentive to retrieve their money early, at the expense of the remaining creditors. A consequence of these distortions is that creditors always face a risk: when they are to claim their money, all the firm's assets might already be seized. Fear of being too late can result in a rapid piece-by-piece sale of the firm (known as a *run for the exits*). If the firm is worth more as a going concern than as a collection of pieces, such a run implies a loss of total economic value.

In theory, financial stress could be handled efficiently by contracting private parties.⁵ Because of negotiation costs and imperfect information, it is however more practical if the state provides general bankruptcy procedures for how to dispose of a financially distressed firm. These procedures serve two aims. One is to ensure that as little value as possible is lost in disposing the firm. This is called *efficiency ex post*. The second aim is to give debtors and creditors incentive to avoid financial stress and deal with incipient problems as soon as they arise. This forward-looking aim is called *efficiency ex ante*. It is crucial to note that the treatment firms receive if they would default affects the decisions of management and creditors at all times, including when business is good. By regulating how liquidity and insolvency must be handled, and clarifying the legal rights of debtors and creditors in these situations, bankruptcy procedures specifies in advance the available outside options. These should be designed so that creditors feel that their claims are protected, and give them an incentive to lend in reasonable amounts and on reasonable terms. For the debtor, bankruptcy should come with

a significant cost, so that management has an incentive to avoid financial stress if possible. The outside options also define the bargaining power debtors and creditors have when negotiating settlements out of court.

While details of bankruptcy procedures differ among modern states, they generally share three basic features. First, they impose a standstill on the debtor's payments. This stops the grab race by the creditors and ensures that the assets of the firm are not sold in an inefficient way. To further ensure equal treatment of the claims, it is common that creditors who retrieve money when the firm is insolvent yet but not illiquid are forced to make refunds. Second, they deprive the management of the control of the firm's operations and put it in the hands of the creditors or a representative. This ensures that the firm is run in a way which maximizes its value. It also gives the management an incentive to avoid resorting to bankruptcy. Third, they arrange for a single debt-workout that includes all creditors' claims on the firm. This ensures that no creditor is repaid at the expense of another. By regulating in advance how losses should be distributed among the creditors, the procedure reduces negotiation costs and uncertainty. If the firm is reorganized, it is common that bankruptcy procedures give seniority to creditors who supply new money. This is called *debtor-in-possession finance*. It serves to facilitate recapitalization of enterprises that would otherwise have been regarded as too risky to invest in. By assuring new creditors that they will be the first to get their money back if the firm is liquidated, the risk is reduced.

The optimal design of a bankruptcy procedure will have to take into account both *efficiency ex post* and *efficiency ex ante*. There is often a need to strike a balance between them. For example, debt workouts might be easier if the seniority of the claims are disregarded to some extent or if generous write-downs are accepted. This will however erode the debtors' incentive to attend to profitability and make creditors more restrictive in their lending.

2.2 Bank runs

Financial problems in banks are more serious than in other types of firms. One reason for this is that a creditor run is more likely to happen to a bank, and can be more disruptive.⁶ The explanation for this lies in the nature of banks' assets and liabilities. The majority of the assets of a bank consists of outstanding loans with long duration. Since the information that banks collect regarding the creditworthiness of their customers is difficult to pass over to a buyer, there is normally no secondary market for these assets. Especially in a crisis, when it is likely that a bank has a large number of bad assets, bank loans can only be sold to other creditors at a substantial loss. To raise liquidity at short notice, banks consequently need to erode their solvency. At the same time, banks inherently face liquidity risk because deposit contracts allow the depositors to withdraw the nominal amount on demand.

A *bank run* is a situation when suspicion of a coming default lead depositors to withdraw their money simultaneously, in fear of arriving too late at the counter and finding that there is no money left. As depositors withdraw, the bank becomes more illiquid. It is then forced to sell more of its assets and suffer further losses. Depositors then have an even stronger incentive to withdraw. Ultimately, this co-ordination problem among the depositors, in combination with a bad rumor, can force an initially solvent bank to liquidate its assets and go into default. This is called a *speculative* bank run.⁷ A *fundamental* bank run occurs when

fear of default is motivated by poor performance of the bank. Asymmetric information among depositors about the financial operations of the bank might enforce the effect of a fundamental bank run. If a sufficient fraction of depositors withdraw their money from the bank, the uninformed depositors might interpret this as a signal that those better informed have received bad news. The rational expectations equilibrium that develops under these assumptions includes elements of ungrounded speculative fears as well as actual problems.⁸ The dynamics of speculative and fundamental bank runs in combination illustrate that the distinction between insolvency and liquidity might be very hard to draw for banks. A solvent but illiquid bank is likely to experience a run, which in turn could make it insolvent.

A second reason why financial stress is more alarming for banks than for other firms is that problems might spread fast from one institution to another, and ultimately threaten the stability of the entire financial system. There are several explanations for this. One is that banks are exposed to each other through the interbank credit market. Banks continuously lend to each other in order to even out shortages and surpluses of liquidity. Such loans are frequently not collateralized, and failure by one bank to meet payments will therefore mean that the banks that have provided the credit take losses. The risk of banks defaulting on their interbank loans also creates scope for interbank bank runs. As long as the interbank credit market works efficiently, loss of liquidity by one bank can be covered by lending from other banks with excess liquidity. However, banks have incomplete information about each other and doubts may rise about the solvency of a bank which is in fact sound. This can cause banks extending credit to run on a bank receiving credit, in the same way as small depositors might do. The fear that banks that have extended credit will suffer losses can in turn trigger other banks to cut their credit lines.⁹

Liquidity problems can also be spread by the depositors. The collapse of one bank may lead to a run on another bank if depositors perceive similarities between the two.¹⁰ If two banks have invested in similar assets, depositors might find it likely that financial difficulties occurring in one of them will also affect the other. Depositors might also, in the middle of a financial crisis, lose confidence in the entire banking system, and withdraw their money into cash or other safe, non-bank assets. This is called a *bank panic*.¹¹ Such behavior might be self-enforcing, as withdrawals into cash by a sufficient fraction of the depositors will give those who originally believed the banking system was sound an incentive to withdraw as well.

2.3 Regulation and emergency lending

An efficient financial system, including mechanisms for financial intermediation, benefits everyone who takes part in economic activity. Banks perform crucial roles in this respect, since they provide liquidity and payment services, transform assets, manage risk and process financial information.¹² A breakdown of these services involves substantial costs for many sectors of a national economy. To avoid disruptions of the financial system, banks operate under stricter capital adequacy requirements than other firms do.¹³ Continuous public supervision is a further measure to assure that banks are sufficiently cautious in their risk taking. Still, even under strict prevention, banks can become unprofitable or unable to meet current payments. As described above, such problems may cause externalities with undesirable effects for other banks and the rest of the economy. Because of limited and asymmetric informa-

tion about future contingencies, the associated costs are not easily internalized by private agents. By providing public safety nets for banks, authorities aim to correct this market failure, and minimize the costs of financial disruptions for society.

As early as in the 19th century, economists Henry Thornton and Walter Bagehot envisaged that the collective action problem which gives rise to bank runs could be solved by means of public insurance.¹⁴ In line with their reasoning, the depositors have no incentive to run if they know that banks will have access to emergency liquidity supplied by public authorities and hence always be able to fulfill their obligations. Today, the function to provide emergency credit in cases of liquidity is referred to as *lender of last resort*. The aim of this function is to minimize capital losses that speculative bank runs might inflict on individual banks. The ultimate reason for providing this service is to avoid that liquidity problems spread and threaten the stability of the financial system. Partly by tradition, partly because of their rapid access to liquidity through the control of the money stock, lending of last resort is commonly performed by central banks.

In the early theory of lending of last resort, only solvent banks would be offered credit, while insolvent institutions would be allowed to fail. To distinguish between the two, provision of good collateral would be a lending requirement. However, as mentioned earlier, the distinction between liquidity and insolvency for banks is not so clear-cut in practice. What appears to be good collateral in normal times could suddenly become unsatisfactory in a crisis. The distinction is often impossible to make before the crisis has subsided.¹⁵ The stability of the financial system might also be threatened by the failure of a *clearly* insolvent bank (for example, because of the losses the failure would incur on other banks). This constitutes a justification for authorities to extend emergency lending to provide temporary *risk capital*. By improving the solvency of distressed banks, such provisions could prevent a crisis from emerging or spreading further, and facilitate an orderly dismantling of insolvent institutions.

2.4 Moral hazard

A large infusion of money can be effective *ex post* in restoring the liquidity and solvency of troubled institutions. However, generous provisions of credit will affect market expectations for future emergency loans. These expectations can jeopardize efficiency *ex ante* by distorting the incentives of those who would benefit from provision of public money. In order to maximize the implicit subsidy of the insurance, bank managers might run their institutions at an imprudently high risk. This is called *debtor moral hazard*. Large depositors, on their part, might become less inclined to monitor the performance of the banks to which they have lent if they expect an official rescue package to cover possible losses. This is called *creditor moral hazard*. Because they raise the general level of risk, both these distortions increase the likelihood for banks to encounter financial problems in the first place.¹⁶

Bagehot's suggested solution to the moral hazard problem was that liquidity should be provided at a penalty rate. However, harsh terms of lending burden the banks with additional costs and could thus aggravate a crisis.¹⁷ Given the social costs of disruptions of the financial system, governments are in a weak bargaining position *vis-à-vis* troubled banks. Particularly for large banks, which are considered *too big to fail*, governments have an incentive to offer support on concessionary terms. Empirical evidence indicates that ailing banks are often

recapitalized by public funds. Premium rates are rarely charged and often loans are not collateralized.¹⁸

In practice, authorities have tried to limit moral hazard by “punishing” managers and shareholders of banks that have made use of emergency credit. For example, management is often fired and equity might be expropriated by the state. Authorities have also tried to restore the incentives of bank managers by not letting them know in advance if, when, how much and on what terms emergency credit will be provided. This practice is called *constructive ambiguity*.¹⁹ As a disciplinary device, it is particularly effective as regards small banks. Banks large enough to disrupt the financial system still have some power to negotiate the terms of support.

2.5 “Bankruptcy” procedures for banks

Because of the banks’ role in the financial system, normal bankruptcy procedures might be badly suited to for the disposal of a financially distressed bank. Imposing a standstill on a bank would disrupt economic activity, send a bad signal to the markets and possibly trigger runs on other banks. It would probably also raise lending costs for the banks in the future. Recently, several countries have developed special legal frameworks for the reorganization and closure of banks.²⁰ Such frameworks formalize the public responsibility for financial stability, but also create legal means for the government to safeguard the public resources involved in exercising this responsibility. Although the practical solutions are different, the basic principles are similar in all the countries.

To avoid problems to spread and disrupt the system, the legal procedure provides some form of guarantee for the banks’ financial obligations, operating in the period when the banks are reorganized or when assets are sold prior to a closure. Such guarantees cover all banks, not only the illiquid. The state consequently takes over the risks that depositors might try to get away from, and relieve them from the incentive to run on the banks. In the breathing space that the guarantee creates, authorities can determine whether it is appropriate to reorganize or liquidate the banks. Authorities can also, under less pressure, decide whether risk capital is needed to recapitalize those banks that are allowed to continue in operation. How and by whom these decisions are taken is specified by the legal procedure. This contributes to set markets at rest by ensuring that decisions are taken in an organized way.

The legal procedures also include measures to avert moral hazard and to increase the bargaining strength of the public *vis-à-vis* the banks in a crisis. One such measure is assuming public control of the management of a bank if financial problems threaten the system. In cases of incipient crises, when a bank has liquidity problems, or when capital adequacy requirements are not fully met, shareholders and management are deprived of some of their rights to control the institution.²¹ Another measure is that, if public money is needed to reorganize the bank, capital infusions are combined with corresponding financial losses for the shareholders, for example by expropriation of equity. In this way, management and shareholders are encouraged to recapitalize the bank privately before public intervention.

3. The international domain

3.1 Justifications for global policy

Integration with international capital markets changes the risks that countries face. For example, banks in debtor countries are more affected by changes in world interest rates, and the scope increases for banks to expand risky activities by funding themselves abroad. For creditors, loans extended to debtors abroad are basically perceived as more risky than domestic loans. If the debtor is located in a distant and unfamiliar market, creditors are in a weaker position to get access to information about creditworthiness. Cross-border lending also expose debtors and creditors to exchange rate risks. These risks relate to the value of the principal, as well as to the burden for the debtors to service current payments.

As a point of departure, the prevention of crises, as well as management of those that happen, should be handled by the authorities in the countries where the problems occur. National governments have the legal power to control risks in their own jurisdiction, as well as the public interest in promoting financial stability in their home territory. There are, however, at least two possible justifications for addressing financial stability issues on a global level.

First, financial problems seem to have a tendency to spread from one country to another, known in the literature as *contagion*.²² An illustration of this is that the correlation of asset prices and other financial indicators among countries is historically higher in crises than in stable periods.²³ Recent theory suggests that financial markets contribute to propagate contagion. A crisis in one country might lead investors to sell assets in other countries with a similar risk profile, in order to maintain portfolios diversified. Alternatively, investors might sell assets in similar countries to raise liquidity to cover for the losses they have suffered. If these effects are strong enough, contagion could be a threat to the global financial system. However, it seems far-fetched to believe that crises of the kind so far seen would be that devastating. The foundations of global financial markets are built on the economies of the major industrial countries, the G-7.²⁴ Banking crises that have involved contagion have primarily erupted in the developing world and among emerging market economies, whose stake in the global financial system is limited. Even the recent collapse in Japan, and substantial problems in large emerging market economies such as Brazil and Korea, have so far not comprised serious threats to the international financial markets.²⁵ Safeguarding the stability of the system as a whole is thus not a sufficient rationale for global intervention at this moment.

Second, some countries are unable to handle financial crises on their own and consequently need help from abroad. They might also have difficulties to handle contagion from other markets. The fact that many countries, particularly emerging market economies, have been unable to recover access to international markets once it has been lost proves that this is a relevant concern. Global policy to help these countries, in the form of finance and expertise, can be regarded as an alternative and a complement to traditional development aid. Because of the great social cost of a banking crisis, financial stability assistance might be aid money well spent by the industrialized countries.

Consequently, aid seems to be the most relevant justification for global policy towards financial stability. In the rest of this chapter we will study situations when banks in a country lose access to international markets, what national authorities can do to handle this problem, and what the international community does to help those who cannot help themselves. The Swedish banking crisis of 1992 will be used as an example of lost market access, and of a successful unilateral recovery.

3.2 Loss of market access

Banks in open economies are exposed to international markets in several ways. For example, creditors frequently use banks as intermediaries when investing in enterprises in foreign countries, and banks raise or dispose of liquidity in the international interbank market. As long as credit lines are maintained, integration with international markets is normally only beneficial. However, problems could quickly arise if for some reason foreign creditors start to question the solvency of the debtors. Such a loss of market confidence can trigger a creditor run on deposits in the country's banks and on holdings of its currency. This can include the loss of foreign credit, as well as capital outflows by residents. This logic of these events is analogous to a domestic bank run (as described in section 2.2), with the addition that the value of claims and payments is also affected by the behavior of the exchange rate.

If foreign creditors suddenly withdraw their credit, banks must raise liquidity fast to be able to repay. To meet payments for loans denominated in foreign currencies, banks either have to sell liquid holdings of the home currency, or force customers that have borrowed in these currencies to make early repayments.²⁶ Both these alternatives erode the solvency of the banks. When home currency is sold, the exchange rate depreciates. This inflates the liabilities of the banks by increasing the burden of loans in foreign currency. Forced repayments from customers are likely to affect the assets of the banks. Some customers might not be able to repay loans at short notice, especially if amount of repayment expressed in home currency has risen due to exchange rate depreciation. The banks might suffer credit losses, which further erode their solvency.²⁷

The overall effect when market access is lost is a net shortage of liquidity and foreign currency in the entire banking system of the country. If this shortage cannot be compensated for through other channels, problems can start to spread among the banks and the national financial system could be threatened. The development of a run can be particularly drastic if the majority of lending consists of interbank loans or other credits that can be liquidated at short notice.²⁸

The Swedish banking crisis in 1992 is an illustrative example. Sweden had experienced a strong economic upswing in parallel with financial deregulation.²⁹ The ease of restrictions, in combination with a tax system that favored borrowing in times of high inflation, led to a marked expansion of credit, also in foreign currency. Real estate prices had risen following the economic upswing and a large part of lending was extended to the real estate sector, and collateralized by real estate. High interest rates, inflation and a fixed exchange rate peg made it attractive to borrow in low-interest foreign currencies. The banks financed these loans primarily through short-term loans in the overseas interbank market. The risks in

bank activities expanded partly because neither the banks nor the supervisory authority had sufficient experience of a deregulated environment.

Around the year 1990, the economic cycle turned into a deep recession. Property prices fell, eroding the value of real estate collateral. At the same time, the tax system was changed to favor savings.³⁰ In the wake of the recession, finance companies with bank loans first got into difficulties. Soon, some of the banks also experienced problems with their own real estate loans. The final blow was the 1992 European currency crisis that forced the Bank of Sweden to raise the interest rate, and eventually to let the krona float. With higher interest rate levels and lesser scope for short-term funding abroad, credit losses in the banking system accumulated fast. In the early fall of 1992, foreign lenders cut their credit lines to Sweden. Several banks were on the verge of failing to meet the capital adequacy requirements. Non-performing loans were 12 per cent of Swedish GDP. The threat of systemic collapse was evident.

The Swedish credit expansion, the real estate boom, the increased risk taking, the exchange rate overvaluation and the loss of market access for many banks, aggravated by a change in foreign interest rates are typical features of countries that have suffered bank crises.³¹ The conclusion is that once financial problems start to arise, a country largely integrated with foreign markets will be struck harder and faster than a country where capital cannot move freely across the borders. The costs of weak public policies to mitigate risks are consequently higher for an open economy.

3.3 Unilateral recovery

Many countries have proved to be capable of restoring market access on their own, even in situations when they have had severe problems in the financial sector. If all countries were able to do so, the need for global financial institutions would be limited. This section describes the Swedish recovery in some detail, as an illustration of how a country can regain market access unilaterally and resolve a crisis at a relatively low cost.

As mentioned above, many Swedish banks lost access to foreign credit in 1992. To restore access, Swedish authorities took a number of measures designed to convince creditors of Sweden's determination and ability to solve the problems in the banking sector promptly. In order to promote consensus on the required actions, the conservative government maintained the political opposition continuously informed about support measures. The opposition was also represented at the board of the government agency in charge of giving financial support to stricken banks.

While investor confidence in the solvency of most Swedish banks was poor, the solvency of the Swedish government was never questioned. This fact enabled the authorities to issue a trustworthy guarantee to the banks' creditors, allowing them to continue to lend. This lay the foundation for stopping the immediate outflow of capital. The guarantee had no upper limit and included all creditors, except the shareholders of the respective banks.

To avoid an exaggerated idea of the problems, the authorities decided to keep markets and the public informed, as far as possible, about the problems in the ailing banks. All expected

credit losses were publicly disclosed, and common standards for valuation of assets were developed and applied. The Swedish authorities also started a wide range of information activities, including frequent visits to financial centers, regarding its stabilization program.

The measures to restore confidence were successful. When external credit was restored, the immediate liquidity problem was solved. The authorities could then turn to the solvency problems in the bank sector in a calmer environment. The central bank played a role as a supplier of money, but most of public support was provided in the form of guarantees, financed from the national budget. For example, banks forecasted to overcome their current problems in the medium term were offered a guarantee, which could be converted into loans or equity if capital adequacy fell below the established limit of eight per cent. To decrease moral hazard, capital injections were combined with *quid pro quo* takeover of shares by the government. These shares were later sold to recover the costs of the support. Banks with no prospects of profitability were sold. In order to obtain a better price, non-performing loans were transferred to outside asset management companies before selling the banks. Such asset management companies were also used by the surviving banks, to separate good assets from bad. Significant amounts of money disbursed under the state guarantees were used to recapitalize these companies.

The crisis receded relatively quickly as from the year 1993. The financial position of the banks improved and losses declined. A favorable macroeconomic development helped to speed up the return to profitability in the financial sector. Interest rates fell and the government took measures to decrease the budget deficit. The finances of the customers of the banks improved as Swedish exports benefited from the depreciation of the currency. In 1996, the state guarantee was revoked. Total public commitments for resolving the crisis amounted to SEK 85 billion (5.9 per cent of GDP).³²

3.4 Strengthening financial systems

There are several reasons why banks in some countries, especially in developing countries and in emerging market economies, have not been able to regain market access once it has been lost. An important explanation is that the crises proved evident that trouble was not limited to the banks' balance sheets, but that the foundations of the financial systems were generally weak. Banking supervision, bankruptcy procedures, accounting, auditing and other legal and institutional arrangements for mitigating risks were absent, only partly in place, or lacked enforcement power.³³

In emerging markets, deficiencies in banking supervision have allowed banks to continue in operation, in spite of being incapable of managing their risks.³⁴ Capital requirements were too lax in relation to the risk of the banks' operations, which impaired the banks' ability to cushion a creditor run and undermined the owners' incentive to attend to profitability. Mismatches in currency and duration of loans, which expose the banks to exchange rate and liquidity risk, were neglected. Valuation of assets was often too favorable, giving a false impression of the creditworthiness of the banks. "Connected lending" (to bank managers and related businesses) was common in many cases, allowing unprofitable projects to be financed. The creditworthiness of the borrowers was also hampered because state ownership

was often used as a means of conducting opaque quasi-fiscal policies through bank lending instead of provisions in the national budget.

The dominance of banks in the financial system, and the potential social cost if they failed, have encouraged overly protective policies from local politicians *vis-à-vis* the banks. One feature of this is implicit or explicit public guarantees, insuring banks against losses and allowing them to meet obligations to creditors in time. This practice has increased moral hazard; on the creditor side by encouraging excessive lending, in particular from abroad (since enough money could not be raised from the domestic economy); and on the debtor side by allowing banks to lower credit standards. In order to protect the banks further in the short run, financial supervisors have faced political pressure not to attend to incipient problems in time (what is known as *regulatory forbearance*). Some supervisory authorities also lacked legal immunity and sufficient financial autonomy to perform their functions in full.

Regarding corporate bankruptcies, procedures have often been archaic, or the judiciary has lacked the capacity to handle large numbers of insolvent firms. As discussed in section 2.1, inadequate policies to dispose of financially distressed firms can cause creditors to run to liquidate their claims and bring down a potentially viable firm. Where debtor-in-possession finance was not part of the insolvency code, viable but illiquid firms were difficult to reorganize. Uncertainty about which laws and practice will apply when firms come under stress reduced debtors' and creditors' readiness to attend to problems early and negotiate settlements out of court. Inability for creditors to collect collateral in case of default passed the losses of the firms over to the creditors, i.e., the banks. These and other shortcomings in corporate bankruptcy procedures affected the business conditions of the banks' customers, and ultimately lead to capital losses for the banking system.

Recent crises have exposed similar shortcomings in payment systems, data transparency, securities markets and corporate governance, just to mention a few areas with bearing on the financial system.³⁵ In addition to making it difficult for countries to regain market confidence when it has been lost, financial sector weakness increases the likelihood of crises occurring in the future, and thereby raises the lending costs for emerging market countries also in peaceful times.

In order to help countries attend to these problems, governments in the industrialized world and international institutions such as the IMF and the World Bank, have identified international minimum standards and "best practices" in a number of areas.³⁶ Several of these have been developed by private or public "branch organizations" in the relevant area. For example, the Core Principles of Efficient Banking Supervision are developed by supervisors from the industrialized countries in the Basel Committee. The International Bar Association has developed a model bankruptcy code and standards for insolvency and reorganization procedures. The IMF has developed standards for financial transparency in firms and government bodies, and a data standard for public dissemination of economic and financial data relevant for actors in the financial markets.

The IMF and the World Bank have endorsed a limited set of standards and assess countries compliance with these on a voluntary basis. By being assessed, authorities obtain information on where weaknesses in their systems lie. Some assessment results have been made

public, both as a way to make markets better informed about the state of the country's financial system, and as a means of moral suasion to give countries an incentive to implement reforms. In addition to assessments, the IMF, the World bank and national authorities offer technical assistance (i.e., education and "consultancy") to countries who wish to strengthen their financial systems.

3.5 Enhancing confidence

Strengthening financial systems is a long-term political project. However, international credit lines can dry up in a few hours, and if new liquidity is not raised quickly, the effects can be costly. Authorities consequently need rapid means of convincing creditors to open their wallets again. Sweden did this by establishing a state guarantee and by announcing that reforms to solve underlying problems were in the pipeline. However, for certain countries there is a problem: markets might not find such measures credible. Official guarantees are worthless if the government itself is insolvent.³⁷ Promises to reorganize the banking sector and strengthen fiscal discipline are likewise of little value if markets believe that authorities do not have the political determination to carry through such reforms and might instead default on obligations. With a bad track record, lack of an outside enforcement mechanism makes it difficult for authorities to send a convincing signal to markets, even if they do have both the ability and the stamina to implement reforms.

The IMF has assumed a leading role in helping countries to reestablish market confidence.³⁸ The IMF strategy for economic stabilization includes a commitment mechanism for countries' policy announcements, and the provision of limited emergency financing. A country with a balance of payments deficit can borrow from the IMF.³⁹ These funds are drawn from a common pool, where each member country has a right to borrow in proportion to its deposits. In effect, the majority of the capital available for lending is provided by the G-7 countries. IMF loans are conditioned to the implementation of an economic reform program, which is negotiated with the country. The money is disbursed in tranches, which are tied to the stepwise implementation of the program. Since money from bilateral sovereign creditors, multilateral development banks and other institutions are often conditioned on an agreed program with the IMF, the leverage of IMF money is often substantially greater than the capital provided by the proper organization.

By agreeing on a program with a country the IMF lends its good name to markets and provides a "seal of approval" to the effect that the country's announced policies are realistic. By conditioning the loans to the implementation of the program, the costs are raised for the authorities in the country to repudiate on their announcements. This enhances confidence further. Finally, the limited resources contributed by the IMF itself strengthen the country's ability to pay its debts in the short run.⁴⁰

This procedure is basically the same as the IMF has used ever since it was established at the end of the second world war to combat current account imbalances. In response to the growing importance of the capital account in crises, the IMF has changed the nature of its conditions to include structural reforms of the debtors' financial systems, as a complement to macroeconomic adjustment. It has also been evident that while current account imbalances

develop gradually, and can be restored in a stepwise fashion, a run on a country's banks and currency typically involve sudden, and very large, losses of liquidity. In cases such as Mexico and Korea, the IMF has correspondingly made much larger sums available on a single occasion than previously, and has offered the lending in frontloaded packages. The IMF was recapitalized by its members after the Asian crisis, to be able to perform this function. The creditor countries have also established lending arrangements outside the IMF, which make additional finance available when needed.⁴¹ At the time of the Korean crisis, the IMF created a new lending facility, which allows countries in certain situations to borrow more than their deposit in the IMF would otherwise allow. The IMF has also revised its internal decision making process to allow for rapid political approval of loans.⁴²

In addition to making loans larger and more readily available, the IMF has used a different strategy, which does not primarily require access to large financial resources.⁴³ If a country is in danger because of a purely speculative run, the situation can be solved by persuading the creditors to act collectively. The IMF, together with national governments, has many times acted as a crisis manager, informing the creditors about everybody's exposure and using moral suasion to encourage them to roll over loans. In other cases, the IMF has negotiated with creditors so that if the country would agree to a given set of reforms, the creditors would continue to supply loans. This strategy is more difficult if the country has actual problems with fundamentals, or when the creditors are scattered and difficult to address collectively.⁴⁴ Generally, the IMF is seeking increased dialogue with major creditors, with the ultimate aim to encourage the private sector to provide finance for program countries when possible.

3.6 Multilateral moral hazard

As is the case with rescue packages for banks in the national context, emergency credit to countries can change market incentives in an inappropriate way. Overseas investors are affected by creditor moral hazard if their anticipation of a multilateral "bail-out" of the countries whose assets they hold cause them to take on additional risk or to be less cautious to monitor the behavior of the debtors. Governments, on their part, are subject to debtor moral hazard if their expectations of a multilateral rescue program make them prone to excessive borrowing and to be less hesitant to avoid risky policies.⁴⁵

There is reason to believe that moral hazard is an even more serious problem globally than in the national context. The main difference is that since international markets operate in an environment where there is no unique sovereign state to set a legal framework, it may be difficult for the providers of multilateral insurance to make the investors and debtors internalize its implicit cost.⁴⁶ To discourage use of emergency credit, a national authority has a wide range of powers for how to dispose of a rescued institution and to "punish" shareholders and managements *ex post*. By contrast, international institutions are left to the discretion of the sovereign states to which they have lent. National authorities can also use regulation and supervision *ex ante* to force banks to control risk taking.⁴⁷ International bodies have limited leverage on the preventive policies of countries which are not constrained by an IMF program.⁴⁸

Another aspect is that although the IMF operates largely under the consensus of its membership, the discretion of any organization that channels taxpayers' money is curtailed by the creditors countries' claims to control how their money is spent. Multilateral lending is ultimately political and driven by the foreign policy in the creditor countries. Terms of lending in the IMF and the World Bank are regulated in relation to economic factors, but there is some room for discretion as to whether these terms are sufficiently met by a debtor country. Consequently creditor countries can sometimes let non-economic objectives, such as national security and goodwill, have a bearing on lending operations.⁴⁹

While most scholars accept these considerations, views differ on the practical importance of multilateral moral hazard.⁵⁰ Critics argue that moral hazard created by large "bailouts" in the past is an important explanatory factor for recent crises.⁵¹ Others claim that moral hazard distortions are negligible, or at any rate outweighed by the benefits of making public money available in times of stress. Recent papers have tried to estimate the magnitude of moral hazard flowing from expectations of IMF rescue packages.⁵² These studies generally conclude that market expectations are not significantly affected by anticipations of an IMF loan (with the buildup to the Russian devaluation in 1998 being a marked exception). At any rate, concerns about moral hazard have dominated the policy debate since the by size unprecedented loans to Mexico in 1995 and Korea in 1997.⁵³

4. Proposals for change

Since the Asian crises, a large number of analytical reports and proposals for upgrading the international financial system have seen the light of day. These discussions have spurred policy changes in the international financial institutions. In the field of crisis resolution, the debate has so far resulted in changes in the lending facilities of the IMF, primarily in the duration and interest of loans.⁵⁴ Arguably, these reforms have not made much difference to the structure of the international system. As for crisis prevention, the work of the IMF and the World Bank has undergone substantial changes. Both institutions have given increased attention to financial sector issues in their regular monitoring of member countries and in the technical assistance that they provide. This work has increasingly involved co-operation with experts from national authorities and various standard-setting agencies.

Perhaps the individually most marked change is the launch of the so-called Financial Sector Assessment Program.⁵⁵ Under this program, a joint team of IMF and World Bank staff, together with experts from central banks, supervisory authorities and other bodies, perform a coherent assessment of vulnerabilities in a country's financial system and give recommendations for policy reform. These assessments include compliance with a range of standards, for example in banking supervision, financial transparency, data transparency and payment systems. They also include macro prudential analysis, including stress tests and use of leading indicators, to highlight linkages between macroeconomic performance and weaknesses in policy and financial institutions. Participation in the program is voluntary and most of the results can be publicized if the assessed country so desires.

The scope of the work, and the coherent fashion in which the IMF and the World Bank are currently making assessments of countries, mark a change in the role of the international financial institutions. However, the basic approach to financial stability regarding the responsibility of national authorities *vis-à-vis* international institutions has not changed. Some of the proposals discussed in recent years take views that are more radical on what function policy for international financial stability should fill. In the following sections, we will have a fresh look at some of these proposals. The list is by necessity very selective. The aim has been to find marked examples of various lines of thought.⁵⁶

4.1 A "true" lender of last resort

By its recent development to supply large and rapidly available financial packages, it could be argued the IMF is gradually assuming a function of lender of last resort for countries.⁵⁷ Several academics, notably Alan Meltzer⁵⁸, argue that crisis resolution by international financial institutions should be limited to the provision of emergency liquidity. Along the lines of the "Bagehot rules" they propose that the IMF should lend much larger sums than today (up to one year's worth of tax revenue in the debtor country), but at short maturities and high interest rates. To be eligible for lending, countries would have to prequalify as "solvent" by meeting certain macroeconomic and financial stability criteria. Other countries

and their creditors would have to suffer the consequences of their weak policies and investment decisions if a crisis would hit.

Proponents of this kind of reforms primarily point to moral hazard in their critique of the present system. The main drawback of their alternative is that it aims to help countries that do not need to be helped and leave the needy in the cold. Purely speculative runs on mature economies are arguably rare and would they happen, governments in those countries are likely to be strong enough to provide their own safety nets. A more pressing market failure on the international level is violent runs on countries that have at least some problems with fundamentals and where governments are too weak to recover market access.

In practice, multilateral emergency lending is motivated by political concern for the stability of these economies also in the short-run. Understanding this, the assumptions in the proposal are too strong. It is hardly credible that political leaders in the major creditor countries would stand aside and watch economies in the developing world collapse to set an example. This is increasingly true for larger and politically more important countries.

It is also difficult to envisage how the proposal would be financed. Contrary to a national central bank, an international lender of last resort cannot issue its own fiat money, and is constrained by the amounts made available by the major creditor countries.⁵⁹ In the present political climate, it seems unlikely that the G-7 countries would make substantially larger sums available for multilateral lending. If the money could be raised, the proposal is likely to create more moral hazard than it eradicates. As discussed in section 3.6, an international institution has only limited means to control the risk taking of the insured part *ex ante* and enforce punishment *ex post*. Large money disbursements that the prequalified countries could count on make these problems more severe. Penalty interest rates might limit moral hazard on the debtor side, but creditors to the prequalified countries would still have incentive to increase their risk-taking.

4.2 A deposit insurance agency

George Soros⁶⁰ has suggested the creation of a global deposit insurance agency. Through this body, governments in the industrialized world would give full guarantee for loans taken abroad by developing countries. The debtor institutions would underwrite the cost of the insurance by paying a fee when floating international loans. The IMF would determine the prudent level of debt for each country by making assessments of their macroeconomic and financial health. Borrowing on top of this ceiling would not be ensured and the major creditor countries would deny bailouts of any uninsured loans. This explicit insurance scheme would remove the incentive for international creditors to run in a crisis. By increasing the relative risk of uninsured loans, it would also discourage countries from excessive borrowing.

Soros' proposal has the advantage over Meltzer's that, since it would be self-financed, it would be politically easier to implement. Debtor moral hazard would be limited to some extent because the insured parties would pay themselves for the insurance. However, the proposal would face the problem of distorted incentives of the part of private foreign creditors. Like the present IMF, the insurance agency would have limited means to control this moral

hazard because of its lack of powers to regulate financial risks and enforce decisions in national jurisdictions.

If the debtors did purchase the insurance, the higher risk of the uninsured loans would make them the greatest source of volatility.⁶¹ In line with Meltzer's proposal, it would not be credible to announce that uninsured loans would not be bailed out. Expecting a bailout in any case, the debtors has limited incentive to buy the insurance to begin with, and markets would not perceive the risk of loans in excess of the debt ceiling as greater than those below it. The credibility of the scheme is also likely to be affected by political bias *ex ante*, in the assessment of countries' "prudent" level of debt. It is not obvious on what economic grounds these assessments would be made and how the insurance fee would be set.

Finally, if the insurance can be financed entirely by the debtors, there is no economic ground for a *public* scheme, since it could be profitably provided by financial intermediaries in the private sector. Some governments have experimented with private credit lines that give access to extra finance in a crisis, but the scope for these arrangements seems to be limited.⁶²

4.3 A Tobin tax

For all its weaknesses, the above proposal by Soros makes an important point. If private cross-border lending gives rise to negative externalities in terms of financial volatility, then these activities should be taxed.⁶³ Following James Tobin's seminal paper⁶⁴, academics and molders of public opinion have recently argued that international capital flows could be made less volatile by means of taxation.⁶⁵ In the original proposal, all spot foreign currency conversions would be taxed at a rate of five or ten basis points. To prevent traders from evading the tax by relabeling transactions as trade in goods and services, the tax would also apply to all foreign trade involving currency conversions. The underlying assumption for the proposal is that large volumes of short-term transactions are motivated primarily by gains from speculation, without regard of movements in fundamentals. Proponents of the tax argue that these flows are the main drivers of volatility, and that they consequently are socially counter-productive. Levying a modest tax on spot transactions would eliminate the arbitrage in currency markets. This would reduce the volume of short-term trading and limit volatility to what would be motivated by shifts in country fundamentals.

While all transactions do not follow fundamentals, they do perform other socially beneficial functions. Most importantly, currency markets facilitate management of financial risks.⁶⁶ Critics of a Tobin tax argue that reduced volume of trading would make this market less efficient. This would inflate financial risks and volatility would actually *increase*. Empirical studies of financial markets suggest that increased taxes and other transaction costs alter the composition of traded assets. There is, however, no empirical support for a link between transaction costs and volatility. On the contrary, volatility in currency markets has decreased over the last twenty years, despite a growing volume of trade and falling transaction costs.⁶⁷ As long as it is not established that financial trade gives rise to externalities in the form of volatility, it seems unreasonable to justify a tax on these grounds.

When a crisis hits, and markets loses confidence in a country, the Tobin tax would simply be ignored by investors. The low tax rate envisaged would not be enough to discourage creditors

from retrieving their money. Neither would it be enough to stop those who speculate against expectations of a significant drop in a currency.⁶⁸ If the tax was high enough to stop flows during a crisis, it would discriminate all flows, including those deemed socially productive.

Finally, a Tobin tax would be a difficult political endeavor. If only a few countries would refuse to implement the tax, currency traders could book their transactions in those jurisdictions and the tax would be easily evaded. The success of the tax hinges on universal implementation.⁶⁹ This would imply an international treaty (or a change of the mandate of the IMF), as well as the eradication of all tax havens. To ensure the implementation of the tax, international organizations would need increased powers to enforce national policy. The legal and practical issues to develop methods for the collection, monitoring and enforcement of the tax would be significant.

4.4 A bankruptcy procedure for countries

A number of proposals aimed to stem the disruptive effects of capital outflows draw on the analogy with corporate bankruptcies, and aim to develop a bankruptcy procedure for countries in financial distress.⁷⁰ Typically, a bankruptcy court for countries would have the power to impose a stay on debt payments, offer a framework for negotiation among the different creditor classes and the debtor, impose settlement terms if a voluntary agreement can not be reached, and secure debtor-in-possession finance by giving seniority to credit extended after the standstill was imposed. In analogy with national bankruptcy, this would facilitate a faster and more orderly restructuring, and make it easier to find the necessary means to finance necessary policy adjustment.

The work to coordinate insolvency procedures among all debtor and creditor countries, as well as finding a legal procedure that can meet the demands of all relevant jurisdictions, would be compelling. Furthermore, it is doubtful whether sovereign states are willing to endow a global court with sufficient powers to enforce its decisions, notably to cram down settlement terms.⁷¹ An alternative approach, which has recently gained attention, is giving international sanction to a country declaring a temporary moratorium on debt payments.⁷² While a moratorium can be declared unilaterally, a "blessing" by the IMF or other relevant institution could provide confidence to the markets. The IMF would ensure that the measure was used in the common interest of all parties, and not as a means of postponing reforms.⁷³ To strengthen this role, official sanction could be conditioned on relevant policy adjustment.⁷⁴

The skeptics claim that creditors would be encouraged to rush earlier if they anticipate this kind of locking in of their assets, and doubt that official sanction could have sufficient effect to fend this off.⁷⁵ Another problem is that a standstill could result in contagion to other markets. A standstill might trigger investors to cut their credit to similar countries to hedge their exposures, or it might cause a shift in the perceived risk in similar markets and cause a flight to quality.⁷⁶ If the standstill is not limited to sovereign debt, it would probably have to be combined with exchange and capital controls, to ensure that private debts are not paid. Creditors are often skeptical about such controls, since they can be used for less benign purposes, such as stripping assets before a default.⁷⁷ All in all, these increased risks allegedly give creditors further incentive to run early if they anticipate a stay, and might result in worse terms of lending for emerging markets.

So far, evidence on the effect of standstills on long-term borrowing costs is scarce and vague.⁷⁸ As for contagion, no compelling arguments have been presented why a standstill would cause more damage than the alternative, i.e., an uncontrolled creditor run. If the standstill was linked to policy adjustment conditions, it seems that the measure would create more credibility than it would erode. The strength of the IMF signaling effect would be dependent on the quality of the information the organization has on the debtors' finances and its determination to carry through policy adjustments. The official sector has probably access to superior information than private actors in this regard, but how much is likely to vary from case to case. Consequently, it is difficult to know whether official sanction would be enough to create the necessary confidence that a standstill is warranted and that it will be only temporary.⁷⁹

5. Conclusions

Financial markets are plagued by information asymmetries and other imperfections, some of which can result in violent disruptions of markets. To protect the stability of the financial system, and ultimately the national economy, the state has a role to correct for externalities that private actors impose on each other. This public policy is carried out through regulation, supervision and intervention. Recent crises have all too well illustrated that the cost for public complacency in this area is high. The costs are even higher if the economy is integrated with international capital markets. A loss of foreign investor confidence can rapidly transfer into a credit crunch and a downward overshooting of the exchange rate. The Swedish banking crisis in 1992 is a telling case in point.

Most of the recent proposals for reform are either economically unsound or politically infeasible (mostly both). Many of them address the new types of risk countries face in the wake of financial globalization by moving decision making and policy implementation from national authorities to global institutions. This approach is misguided for two reasons. In the lack of a world government with powers to supersede national law and enforce its decisions, financial regulation on a global level would have no bite. Perhaps more important, solutions of this kind would remove the incentive for governments to act in their own jurisdictions. Experience shows that crises are both triggered and deepened by weak national financial systems. If the national system is not robust, it is also harder to resolve crises, when a country becomes tangled up in one. Because of this, improving *national* regulation, enforcement and institutions are probably the most important reforms towards a more sound *international* financial system.

While national reforms must be carried through by each government itself, cooperation among countries is increasingly important. The greatest value added by international financial organizations is that they can help countries as they strengthen their systems, and give them incentives to do so. In this respect, the increased attention given by the IMF and the World Bank to development and assessment of financial standards is commendable. Further incentives could be created to encourage national reform. For example, capital adequacy requirements could be linked to the debtor country's compliance with recognized standards, and results from assessments of standards could be published as a matter of course.

Despite all reforms, it will probably be long before all countries are able to resolve bank crises on their own. Hence, there is still a need for the traditional role of the IMF: to provide confidence through conditional lending. The question of how to control the moral hazard associated with these loans is still unsolved. Perhaps a way forward would be to delegate the resolution of the problem to national governments, which have more powerful tools at their disposal. How this would be done requires further research and innovation, but quite possibly it would involve increased incentives for governments to revise deposit insurance and public guarantees. Official sanction of payment standstills might also be a viable alternative.

In conclusion, financial globalization brings great benefits, if countries are able to take the necessary precautions. Open countries can enjoy improved access to credit and greater scope for diversification and return. However, the greatest benefits are perhaps not economic, but political. Integration with foreign markets works as disciplinary device for governments to carry through sound legal and institutional reform. Globalization provides authorities with a carrot as well as a stick to behave well. Prudent reforms in the financial sector improve terms for borrowing, while irresponsible policy comes at substantially higher economic and political cost today than in the past. Still, implementing sound reforms is a long and tedious task. It is technically complicated and often conflicts with vested interests. In this process, international organizations should stand ready to help countries willing to move in the right direction.

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Notes

- 1 De Bonis, Giustiniani & Gomel (1999, p. 55).
- 2 Eichengreen (1999, pp. 39).
- 3 This section draws from Aghion & Hart (1992), Cornelli & Felli (1994), Özkan (1995) and Banking Law Committee (2000).
- 4 Whether prospects are "realistic" or not is related to the level of risk the firm is run at. If unlimited risk capital is available, almost any firm could at some point in the future become profitable. A more precise definition of solvency must consequently assume some threshold level of risk. In the literature, definitions of the term differ, partly depending on whether an economic or a legal standpoint is taken.
- 5 Assuming perfect foresight, two contracting parties could forecast all relevant future contingencies, including possible causes of default, and specify in the contract what the parties should do in each case. Alternatively, assuming no negotiation costs, even if contracts are not complete and a situation occurs for which there is no provision in the contract, the parties could re-negotiate *ex post*. As long as property rights were clearly defined, re-negotiation *ex post* would also bring the contracting parties to the Pareto frontier (although the distributional outcome might be different).
- 6 The following section on bank runs draws from Freixas & Rochet (1987, pp. 200ff) and Banking Law Committee (2000).
- 7 For model demonstrations of the dynamics of speculative runs on a bank, see Bryant (1980) and Diamond & Dybvig (1986).
- 8 For a model demonstration of the dynamics of information-driven fundamental bank runs, see Chari & Jagannathan (1988).
- 9 The mechanics of interbank bank runs are conceptually analogous to the information driven depositor bank runs discussed earlier.
- 10 Freixas, Giannini, Hoggarth & Soussa (1999, p.156).
- 11 Freixas & Rochet (1987, p. 191).
- 12 Freixas & Rochet (1987, pp. 1-8).
- 13 Capital adequacy refers to the regulated amount of capital a bank must have in relation to total assets or risky assets. The capital adequacy requirement standards, which are technically complicated, are ultimately measures of the banks' solvency, where a bank that does not meet the standards is defined as insolvent. See further De Bonis, Giustiniani & Gomel (1999, p. 68).
- 14 Thornton (1802) and Bagehot (1873).
- 15 Giannini (1999, pp. 9-10).
- 16 For an extensive discussion that sets the concept of moral hazard in a wider perspective, see Kotowitz (1987).
- 17 Freixas, Giannini, Hoggarth & Soussa (1999, p. 160).
- 18 Crocket (1997) and Goodhart & Schoenmaker (1995).
- 19 Note that while the Bagehotian theory of lending of last resort tries to anchor the expectations of market participants by explicit insurance, constructive ambiguity is in effect the opposite strategy. By making the insurance implicit, the provider tries to *avoid* affecting market expectations before the event.
- 20 This section draws from Banking Law Committee (2000, pp. 133-195).
- 21 In the US deposit insurance system, this is called *prompt corrective action*.
- 22 This section draws from Drazen (1999), Masson (1998), Kaminsky & Reinhart (2000) and Jeanne (2000).
- 23 See however Bordo & Murshid (2000) for a critical view.
- 24 The G-7 is the United States, Canada, Japan, Britain, France, Germany and Italy.

- 25 It may well be borne in mind that the entire South Korean economy is barely the size of greater Los Angeles. The Brazilian economy is comparable in size with Sweden's.
- 26 For bank loans in foreign currencies, it is not uncommon that the contract allows the bank, under certain condition, to retrieve the full value of the principal at short notice.
- 27 A third way for a bank to raise foreign currency is to sell its banks loans directly to other creditors (for example, those creditors the bank is itself indebted to). However, as described in section 2.2, bank loans can normally only be sold at a loss. Consequently, this way of raising liquidity also damages the solvency of the bank in the process.
- 28 For an overview of model illustrations of loss of capital market access, see Jeanne (2000). For a model focused on the macroeconomic effects when foreign lenders run on national banks, see Chang & Velasco (1998).
- 29 Sections on the Swedish banking crisis and its resolution draw from Ingves & Lind (1996), Drees & Pazarbasioglu (1998) and Andersson & Viotti (1999).
- 30 For an analysis of the political timing of the Swedish tax reform, see Paues (1998).
- 31 Eichengreen (1999, p. 41).
- 32 Drees & Pazarbasioglu (1998, pp. 30)
- 33 The problems described in the following section were typical for countries struck by the Asian crisis in 1997, but were also common features in earlier as well as later crisis. For a discussion, see Goldstein (1997).
- 34 This and the following paragraph draw from Goldstein (1998, pp. 7-12) and Eichengreen (1999, pp. 43-44, 155-156).
- 35 Eichengreen (1999, pp. 20-21).
- 36 This and the following paragraph draw from Lind (1998), Eichengreen (1999, pp. 19-36), Goldstein (1998) and Drage & Mann (1999).
- 37 The solvency of a government is in reality a rather dim concept. The government might lack the *ability to pay* its outstanding debts, given the net present value of its future income stream and expenses. However, given that a government can reduce spending and increase revenues from taxation, a more relevant measure of a government's solvency relates to its determination to implement painful reforms, i.e., its *willingness to pay*. Willingness to pay is on the other hand a political concept, rather than an economic. For a further discussion, see Arora (1993).
- 38 This and the following paragraph draw from Mussa & Savastano (1999), Götherström (1998) and Carlens, Götherström & Srejber (1999).
- 39 Other conditions also apply.
- 40 The confidence provided by an IMF program is increasingly more important than the currency disbursements. Roughly half of the present program countries at the IMF do not make use of the hard currency resources that their programs entitle them to.
- 41 The so-called *New Arrangements to Borrow* (NAB).
- 42 The so-called *Emergency Financing Mechanism*.
- 43 This paragraph draws from Boughton (1997), IMF (1999, pp. 39, 41-42), Rogoff (1999, pp. 13), Fischer (1999), Drage & Mann (1999, p. 59) and IMF (2000b, p. 6).
- 44 The typical situation is when the creditors are not a limited group of large banks but consists of several thousand bond holders.
- 45 Moral hazard has other effects than the build-up of undue risks. Calomiris (1998a) among others, emphasize the undesirable redistribution of wealth from taxpayers to investors and bankers and the undermining of market incentives for political reform.
- 46 Giannini (1995, p. 26).
- 47 The arguments on the tools at hand for an international institution follow Calomiris (1998a, p. 14), Rogoff (1999, p. 14), Cline (2000, pp. 5ff) and Giannini (1999, p. 14)
- 48 Once a crisis has hit a country and it applies for an IMF loan, the institution has more leverage on policies. There is however always the risk of policy reversals. In any case, once a crisis has hit, it is too late to limit moral hazard for that particular episode.

49 A much-debated example of this is Russia, who allegedly was given loans with consideration to it being a country "too nuclear to fail". It is also claimed that tranches of a loan to Russia were withheld because of political considerations (the war in Chechnya in 2000).

50 This paragraph draws from Goldstein (2000, pp. 5-6) and Roubini (2000, pp. 21 and 25-29).

51 Meltzer (1998). For other voices concerned about moral hazard, see Calomiris (1998a,b) and Giannini (1999).

52 See Nunnenkamp (1999), Lane & Phillips (2000) and Dell'Ariccia, Gódde & Zettlemeyer (2000) for empirical tests playing down the role of moral hazard. See also Cline (2000) for a discussion.

53 Personally, I believe that the great interest policy makers take in containing moral hazard is primarily driven by the fiscal costs of bailouts and not by desire to limit the distortion of incentives.

54 See IMF (2000a).

55 The following draws from Hilbers (2001).

56 For a more conclusive, albeit a bit old, overview of these and other proposals, see Eichengreen (1999, pp. 124-132).

57 First Deputy Managing Director of the IMF, Stanley Fischer, explicitly argues that the operations of the IMF should be interpreted as to include this function, although interprets it differently than Alan Meltzer does. See Fischer (1999). De Bonis, Giustiniani & Gomel (1999, p. 77) provide a discussion on the development of the IMF in this direction.

58 Meltzer (1998). See also Cline (2000) and Calomiris (1998b) for similar a reasoning.

59 De Bonis, Giustiniani & Gomel (1999, p. 76).

60 Soros (1997).

61 This and the following paragraph draw from Rogoff (1999, p. 19) and Eichengreen (1999, pp. 86-87).

62 One reason why such arrangements might fail is that a government call option on currency crowds out the currency available to private parties. While it might appear so, these kinds of arrangements do not change the total amount of money that foreign investors are willing to supply. See Giannini (1999, p. 39) and Mann (1999) for discussions.

63 The argument follows Rogoff (1999, p. 19).

64 Tobin (1978).

65 Some proponents favor a Tobin-type tax primarily as a means to raise revenue for various purposes, for example debt-reduction in developing countries. Since the issue of how to use the revenue does not necessarily relate to financial stability, it is not discussed in the following section.

66 The process of clearing this market explains why the gross volume of currency transactions is so much greater than the net. Whether these transactions are "speculative" (and hence bad) or contribute to a sound market for risk is probably a question of labeling and taste.

67 Roos Isaksson, Ådahl & Jonsson (2001, p. 8), Shome & Stotsky (1995, pp. 3-4).

68 Eichengreen (1999, pp. 88) and Shome & Stotsky (1995, pp. 12-13).

69 Eichengreen (1999, pp. 89) and Shome & Stotsky (1995, pp. 12-13).

70 While many scholars have produced similar papers, Raffer (1990) is one of the more widely discussed proposals for a bankruptcy court for sovereign borrowers. Other proposals that draw on the analogy with national bankruptcy procedures are collective action clauses in bond contracts and creditor committees and IMF lending into arrears. See Eichengreen & Portes (1995) and Eichengreen (1999, pp. 71-74).

71 Eichengreen (2000, p. 93), deems this "pure fantasy".

72 See primarily Eichengreen (2000), Miller & Zhang (2000) and Haldane & Kruger (2000). Standstills were also mentioned in the Communiqué of the International Monetary and Financial Committee in the fall of 2000, IMF (2000a). For a survey-type discussion on standstills, see IMF (2000b).

73 In the present, the IMF exercise an implicit version of this "blessing" by its policy to lend to countries with arrears to private creditors in situations then the country is taking responsible action to address its debt burden.

74 IMF (2000b, pp. 12-13).

75 See for example Roubini (2000, p. 31).

76 IMF (2000b, pp. 21-22).

77 For an overview of market effects of capital controls, see Glick & Hutchison (2000).

78 While Eichengreen (2000, p. 31) concludes that costs are not likely to rise, IMF (2000b) claims the evidence so far is inconclusive.

79 An alternative, which (at least to my knowledge) has not been discussed, would be to make the standstill retroactive. In analogy with national procedures, creditors who retrieve their money after a given time would then have to repay the debtor and participate in the overall agreement. While this might raise legal concerns as well as questions of enforcement, it would relieve the creditors from the incentive to run when they expect standstill.