



BANK OF ENGLAND

Speech

The Asian Crisis: lessons for crisis management and prevention

Speech given by

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In this speech,⁽¹⁾ Professor Brealey, special adviser to the Governor on financial stability issues,⁽²⁾ discusses the succession of financial crises that swept through Asia, Russia and Latin America in 1997 and 1998, and the resulting considerable debate about both the role of the IMF and possible actions to limit further crises. Some have argued that international financial markets do not function well and are subject to periodic contagious panics that can be stemmed by an international lender of last resort. Professor Brealey argues that the IMF has neither the resources nor the superior information to fulfil such a role. However, there may be a need for an international financial institution that can use its leverage to secure policy changes in the affected countries. Professor Brealey also takes issue with the view that the IMF is simply bailing out imprudent international banks and that measures are needed to bail them back in again. He argues that the source of the Asian crisis lay in the real economy, but the effect of the crisis was greatly exacerbated by the financial structure of the affected countries. In particular, much of the risk was borne by domestic banks which borrowed dollars in the short-term interbank market and made longer-term loans in the local currency. Public policy needs to be directed to ensuring that the risks in emerging markets are distributed efficiently across foreign and domestic investors. That involves greater use of equity finance and structured debt.

Introduction

Woody Allen in a graduation day speech remarked:

‘More than any other time in history, mankind faces a crossroads. One path leads to despair and utter hopelessness. The other to total extinction. Let us pray we have the wisdom to choose correctly’.

The international financial institutions must have felt that they confronted a similar predicament when faced by the successive financial crises in Asia, Russia and Brazil. These events have prompted renewed debate about crisis prevention and resolution. In particular, it has been argued that the IMF should serve as an international equivalent of the domestic lender of last resort that can assist countries hit by a creditor panic or currency flight. The difficulties for the IMF in fulfilling this role are its relative lack of resources and the problem of distinguishing between the illiquid and the insolvent borrower. Moreover, as is shown later, the response of asset prices to the announcement of IMF assistance provides little encouragement for the view that the IMF’s intervention helps countries to resolve a problem of financial panics. An alternative role for the IMF is to use its leverage to enforce policy changes on affected countries. This role does not assume that a country’s creditors are subject to contagious panics, and the form and quantity of assistance that is needed to impose conditions are not the same as are required to stem a creditor panic.

The fact that IMF support has been a response to the withdrawal of funds by international banks (and capital flight by domestic investors) has led to concern that the IMF is simply bailing out the banks, and thus to calls for a redistribution of the burden. This view seems to be coloured by the assumption that international banking is not a competitive activity, so that the banks are able to collect economic rents from the IMF’s assistance. Proposals for burden-sharing also assume that the form of private sector lending would be unaffected by attempts to ‘bail in’ the private sector. A related concern is that the prospect of IMF assistance to troubled countries leads to a moral hazard problem on the part of both lenders and borrowers. This moral hazard argument does not sit well with the huge losses that have been made by foreign investors in the affected countries, nor with the extreme reluctance on the part of borrowers to seek IMF assistance.

The strong limitations on the international community to resolve a major international financial crisis suggest that the focus of public policy should be on crisis prevention rather than resolution. It is foolish to look for a single panacea. Debate has focused *inter alia* on alternative exchange rate systems, the structure of banking and bank supervision in emerging markets, and on the systems of corporate governance and control (‘crony capitalism’). Rather less attention has been paid to the issues of capital structure. It is clear, however, that the capital structures of governments, financial institutions and corporations contributed to the

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(2) Also of London Business School.

severity of the crises in the affected countries. In particular, the high levels of bank borrowing and the maturity and currency mismatches incurred by the banks endangered their solvency, and limited the policy responses of governments.

This paper is set out as follows. The first section provides a brief background to the Asian crisis and the events that led up to it. The next section discusses the role of the IMF and the related issues of burden-sharing and moral hazard. The third section turns to the topic of crisis prevention, and discusses the role of capital structure in reallocating the real risks in emerging market economies. The fourth section briefly reviews some of the policy implications, and the final section concludes.

The Asian financial crisis

The onset of the Asian financial crisis

The float of the Thai baht in July 1997 was the first step in a series of financial crises that first swept through Thailand, the Philippines, Malaysia, Indonesia and Korea, and subsequently spread to Russia and on to Brazil. In each of the affected Asian countries, there was a substantial flight of capital, both by domestic and international investors. Foreign exchange reserves, which had been growing rapidly, were depleted even more rapidly, with Korea losing \$25 billion in usable reserves in just over a month. Throughout the region governments attempted with little success to stem this pressure on reserves by increasing short-term interest rates; rates in Indonesia rose to over 80%. The capital flight resulted in a remarkable period of turbulence in the foreign exchange markets. Volatility in the rupiah, which had been a fraction of 1% per day under the crawling peg, reached 12% per day,⁽¹⁾ roughly the annual volatility of most Western equity markets. By its low point in 1998, the rupiah had lost 80% of its value in nominal terms and about 70% in real terms. Each of the other affected Asian currencies depreciated by more than 38%.

Many of the crisis countries found themselves in a debt trap, where the cost of rolling over loans forced them into spiralling debt levels and public sector deficits. In such cases, the reduction in wealth which would be needed to escape from such a trap was politically infeasible. Raising interest rates to protect the currency increased the burden of servicing domestic government debt and drove the government into yet larger deficits, while allowing the currency to depreciate increased the cost of foreign currency debt and threatened the solvency of the banking system through which much of the debt was channelled.

Concerns over possible defaults caused the spread over US Treasuries to widen to between 8% and 18% for the affected Asian countries. Each country also experienced a run on the banks. Since the second half of 1997, several

hundred financial institutions have been closed down, suspended or nationalised, and recapitalisation needs are estimated to range between 18%–34% of GDP for the crisis countries.

The consequences for all the affected countries have been severe. In 1998 GDP fell by 14% in Indonesia and by an average of more than 7% in the five affected Asian countries, although income per head was still substantially higher than at the start of the decade. Around \$120 billion of capital has left these countries. Would-be borrowers in many developing countries have been effectively cut off from access to the capital markets, while liquidity has been severely affected and spreads have increased. The losses to foreign creditors and equity investors in East Asia and Russia amount to an estimated \$350 billion.⁽²⁾

The East Asian story has since been more or less repeated in the other crisis countries. In each case, capital flight has put pressure on reserves, which the government has attempted to fight with very high domestic interest rates and fiscal restraint. The depth of the problem in Russia and the reluctance of the government to pass needed reforms has resulted in a debt moratorium and *de facto* default.

The seeds of the crisis

What was so surprising about these events at the time was that many of the countries had seemed to be models of economic success. In the words of one commentator, ‘From 1945 to 1997 the Asian economic miracle fueled the greatest expansion of wealth, for the largest number of persons, in the history of mankind’.⁽³⁾ In the affected Asian countries, growth in real GDP had averaged 7% a year since 1990, with relatively little pressure on consumer prices. Brazilian real GDP grew at an annual rate of 4.5% between 1993 and 1996, while in five years inflation fell from 2,500% to less than 3%. Even Russia appeared to be making progress. Inflation in 1997 was below 15%, compared with nearly 900% five years earlier. The rouble had stabilised, and GDP grew slightly in 1997 after declining in each of the previous five years.

However, it is easy with hindsight to see that the seeds of the emerging market crisis of 1997–98 were sown earlier in the 1990s, when improvements in the access to financial markets and apparent high returns on investments caused a surge of capital inflows into many emerging markets. By 1996, the total net private capital inflow to the affected Asian countries had reached \$73 billion dollars, up from just \$25 billion six years earlier.

The risks involved in this huge capital inflow to Asian emerging markets were exacerbated by the fact that most of it was in the form of bank debt. In 1996, the year preceding the Asian crisis, 61% of the capital flows to the affected countries consisted of bank lending.⁽⁴⁾ Most of the external

(1) International Monetary Fund (1998a).

(2) Institute of International Finance, press release April 13, 1999.

(3) Jackson (1999).

(4) Institute of International Finance (1999a).

debt was contracted by the private sector and, except in Indonesia, the money was largely channelled through local banks that relend the money to local businesses. Net interbank borrowing by banks in the five most troubled Asian countries amounted to about \$43 billion annually during 1995 and 1996. Most of this lending was denominated in dollars. Foreign bank debt amounted to 45% of GDP in Thailand, 35% in Indonesia and 25% in Korea. This debt generally had a maturity of less than one year.⁽¹⁾ In contrast, the average maturity of the loans made to local companies by the banks was longer than a year and the loans were commonly denominated in the local currency. Thus banks assumed both a maturity mismatch and a currency mismatch. In Thailand, where there are restrictions on the open foreign exchange positions of banks, the banks limited their currency risk by relending in dollars. However, since their clients did not have the foreign currency earnings to repay these debts, the banks simply traded a currency risk for a credit risk.

During the 1990s, bank credit in most Asian countries grew rapidly, by between 12%–18% per annum in real terms. In many countries, this resulted in large exposures to particular sectors, notably property,⁽²⁾ and to overconcentration of lending to single borrowers. In Korea, the average book debt-to-equity ratio of the corporate sector reached nearly 200% and the top 30 chaebols had a debt-equity ratio of more than 400%. This is despite the fact that even before the onset of the crisis these chaebols were barely profitable.⁽³⁾ The weakness in the banking system was (as so often) hidden by the gap between the book and market value of the loans. Moody's has estimated that in Indonesia, the proportion of loans that are non-performing could be as high as 75%. In Korea, non-performing loans may amount to 150 trillion won.

Most currencies were pegged principally against the dollar, despite the fact that a high and increasing proportion of external trade was with countries in the Asian region. These currency pegs had the effect of disguising the risks involved in the foreign currency loans, and offered apparent low-risk profits on investment in local fixed interest markets. Thus the capital inflow partly reflected 'arbitrage' activity by banks and investors, who were able to borrow dollars and relend in the local currency at a profit, as long as the peg to the dollar was maintained. The currency peg also meant that the risk was largely a jump risk, where the high probability of a small profit disguised the smaller chance of a substantial loss. Thus, when the currencies began to depreciate, there was little opportunity for banks to take corrective action by lifting their positions.

What made the currency pegs unsustainable was the sharp fall in the growth in exports from the region. This stemmed from a combination of an appreciation in the real exchange rates, particularly relative to the yen, together with the weak

Japanese economy, increasing competition in export markets from China and Mexico, and excess capacity in many exporting industries such as the semiconductor, petrochemical and automobile industries. By 1996 the current account deficit in the five Asian countries had reached \$55 billion.

The international response to financial crises

The events of 1997–98 have prompted increased debate about the international response to such financial crises. This section considers the role of international institutions in crisis prevention and management. Specifically, it seeks to answer the following questions:

- What is the role of the IMF?
- Who benefits from IMF assistance?
- How should the burden be shared?
- How serious is the problem of moral hazard?
- How can the IMF help with crisis prevention?

What is the role of the IMF?

The IMF was established in 1947 to buttress the Bretton Woods's system of fixed exchange rates, and was intended to provide temporary assistance in the event of destabilising speculation and consequent balance of payments difficulties. But its role has changed to one of engineering major structural reforms and providing assistance in the face of possible default on international loans.

Much of the debate on the effectiveness of the IMF in the recent international crises has centred on the appropriateness of its programmes. But there have also been more fundamental questions about its role in crisis management and prevention. Why would the private sector not be prepared to lend to affected countries at 'fair market rates'—is there an imperfection in the private capital markets that justifies the existence of an international lender of last resort? Are there multiple equilibria in financial markets, so that a simple nudge from an international financial institution could transport us safely from a bad equilibrium to a good one? Unless these questions can be answered, we do not know whether an IMF is needed at all, or in what circumstances and in what form it should provide assistance.

The following quotations illustrate the sharp divergence of opinion over these issues:

'The crises have brought home the absolute indispensability of the IMF as the core provider of emergency, conditioned international support to countries in financial difficulty.... Without the IMF, even those countries that are committed to reform might face default... which could have devastating effects on their own economies and significantly raise the risks of contagion in other markets.' Larry Summers (1998).

(1) In a probit analysis of financial crises in emerging markets, Radelet and Sachs (1998) find that the ratio of short-term debt to reserves is strongly associated with the onset of a crisis.

(2) In 1996, property lending as a percentage of total lending was 25% in Malaysia, 20% in Indonesia, and 18% in Thailand (International Monetary Fund, 1998b).

(3) For example, in early 1997 six chaebols filed for bankruptcy (International Monetary Fund, 1998b).

'... the question is whether there is a need for an agency that will act as lender of last resort for countries facing a crisis. There is such a need: it arises both because international capital flows are not only extremely volatile but also contagious, exhibiting the classic signs of financial panics, and because an international lender of last resort can help mitigate the effects of this instability, and perhaps the instability itself.... I will argue not only that the international system needs a lender of last resort, but also that the IMF is increasingly playing that role and that changes in the international system now under consideration will make it possible for it to exercise that function more effectively.' Stanley Fischer (1999).

'IMF resources have been used to 'bail out insolvent emerging market banks and international bank lenders'. The costs have been (1) undesirable redistributions of wealth from taxpayers to politically influential oligarchs in developing economies; (2) the promotion of excessive risk-taking and inefficient investment; (3) the undermining of the natural process of deregulation and economic and political reform which global competition would otherwise promote.' Charles Calomiris (1998).

'The role of a lender of last resort is not to bail out failed banks. Its job is to assure that solvent financial institutions do not fail because of lack of liquidity.... Since 1971, the IMF has been looking for new things to do. It has now solved its problem by creating moral hazard, allowing international banks to avoid the risks they undertake by imprudent lending. The IMF encourages the behavior that creates the problems.' Alan Meltzer (1998).

In common with most advocates of active IMF involvement, both Summers and Fischer emphasise the danger of 'panics' in financial markets and of consequent 'contagion.' By contrast, Calomiris and Meltzer place more weight on the dangers of moral hazard that result from the prospect of an IMF 'bail-out.'

One of the roles envisaged for the IMF, and suggested in Stanley Fischer's 1999 paper, is as an international equivalent of the domestic lender of last resort.⁽¹⁾ The function of the domestic lender of last resort is to prevent destabilising runs on the banking system. One way that this could arise is from a liquidity mismatch. For example, a bank may be solvent as long as all depositors agree to maintain their investment, but subject to a run if each depositor is concerned that others are about to withdraw their cash. This possibility stems from the fact that depositors cannot coordinate their actions. One solution is to establish a benevolent lender of last resort, that can prevent such runs simply by standing ready to provide whatever liquidity is needed.⁽²⁾

In practice, pure liquidity panics are rare and bank runs are more often motivated by insolvency worries. Here also

problems may arise because depositors are unable to coordinate their actions or pool their information. For example, each depositor may rationally draw inferences about the bank's solvency from the actions of the other depositors. So a small initial loss of deposits can lead to a cascade of withdrawals.⁽³⁾ If a lender of last resort has superior information or can pool the information available to individual depositors, it may be able to distinguish a bad cascade from a good cascade and nudge the market towards the appropriate outcome.⁽⁴⁾

The liberalisation of the world's capital markets in the last twenty years has led to large capital flows into and out of emerging markets. While this is not necessarily a cause for concern, it may leave countries exposed to the type of liquidity or information-motivated panics that are used to justify a domestic lender of last resort. An international lender of last resort is clearly not necessary to protect a country's banking system against runs on its domestic book, but may, for example, be needed where banks have large foreign currency books.

This view, that there is an important role for an international lender of last resort, relies heavily on the view that financial markets are prone to bubbles, panics and contagion. However, while models of rational multiple equilibria that produce bubbles and panics may be fun to construct, it is not clear that they work better than simpler models. For example, surveys of bank runs suggest that these runs generally reflect shared and justified worries about the bank's solvency, and that well-capitalised banks are not subject to runs (see, for example, Kaufman (1994)). If financial markets do function well most of the time and aggregate information efficiently, then the capital withdrawals that have been experienced in a number of emerging markets are more likely to indicate basic structural weaknesses in the country's banking and exchange rate system than a failure of coordination between lenders. Thus the case for an international lender of last resort depends heavily on the lender's access to superior information on the solvency of the country's banking system.

Unlike a domestic lender of last resort, the IMF's ability to respond to a liquidity run is limited by its lack of resources. For example, between 1992 and 1996 the *net* amount disbursed by the IMF under the Standby Arrangements and Extended Fund Facilities was about \$18 billion. During the same period the total net private capital flows to emerging markets was more than \$1 trillion. The events of 1997-98 led to an increase of two thirds in the IMF's net lending. Nevertheless, at the end of January 1999 the total amount owing to the IMF under Standby Arrangements and Extended Fund Facilities was still only \$41 billion, far smaller than the amount of private capital that has been withdrawn from emerging markets.

(1) See also Sachs (1995).

(2) The role of a lender of last resort in preventing liquidity runs was first suggested by Thornton (1802) and developed by Bagehot (1873). A formal model of bank runs is provided by Diamond and Dybvig (1983).

(3) For early models of rational cascades, see Banerjee (1992) and Welch (1992).

(4) It is also sometimes argued that an international lender of last resort is needed to counter attempts at market manipulation, or irrational speculation that leads to excess volatility in asset prices.

This lack of resources may be less crucial in the case of a solvency run. If the IMF does have superior information that allows it to distinguish between solvent and insolvent countries, then its willingness to put its money where its mouth is could serve as an important signal to the private sector. Such a signal could bring large welfare gains to the country in the form of reduced costs of further private sector credit (and an unrecoverable windfall gain to the value of existing loans by private sector banks).

Unfortunately, the signals provided by the IMF's involvement are likely to be mixed. Recourse to the IMF generally occurs only when the patient is in need of intensive care. As Radelet and Sachs (1998) suggest, the 'arrival of the IMF gives all the confidence of seeing an ambulance outside one's door.' So news that the IMF is willing to provide assistance may be overshadowed by the news that the country needs it. Moreover, even if the IMF is particularly well qualified to assess country prospects, it is often under strong political pressure to extend assistance to borrowers, such as Russia, where there are clear doubts about the country's ability to service its debts. This muddies the signal provided by IMF assistance.

An alternative rationale for the IMF is that while private sector lenders may wish to impose conditions on the local government, they find it difficult to do so. Thus the IMF may be able to attach conditions that would be impossible for the private sector.⁽¹⁾ If this is the case, there could be an overall welfare gain. Of course, this raises the question as to why the government could not voluntarily bind itself to the same courses of action at the time that the loan is needed. The answer may lie partly in the difficulty of specifying these actions *ex ante* (hence the use of staged IMF lending), or in the fact that a populist government may find it easier to justify to its citizens conditions that have been imposed by an external body. The fact that the required reforms are packaged with IMF lending both allows the IMF to exert leverage and provides an incentive for it to monitor the implementation of the reforms. However, the gains in this case may be linked only weakly with the extent of the support.

These two models of the IMF's role do not sit happily together and have different implications for the form of its assistance. For example, there is little place for staged lending or conditionality for a lender of last resort, whose function is to stem a panic resulting from liquidity or solvency concerns. On the other hand, staged lending is an essential tool for enforcing policy changes.

Who benefits from IMF assistance?

It is not easy to measure the effect of IMF programs, and more often than not the debate is liable to get mired in counterfactual speculation about what might have happened in the absence of support. An alternative approach is to

focus on changes in asset values at the time of the announcement of IMF assistance. In some ongoing research with Evi Kaplanis of LBS I have been looking at the relative performance of equities, bonds and currencies in the weeks surrounding the announcement of IMF support.⁽²⁾ The results are preliminary, but they suggest three things:

- (1) During the two years preceding the announcement of support, there is a sharp relative fall in equity prices in the affected countries. Bond prices and exchange rates also decline sharply, though this fall is over a shorter period.
- (2) In the days immediately following the announcement of IMF support, there is no statistically significant change in the value of each asset class.
- (3) In the months following the announcement of IMF support, asset prices show little abnormal movement. This is exactly what any believer in efficient markets would predict, but it does not support those who believe that markets are seized by irrational panics that cause them to overshoot.

If these results stand up to further analysis, then it is difficult to argue that the IMF decision to provide assistance is an important signal as to the health of the beneficiary, or that it provides information to the markets about the recipient's willingness to accept desirable reforms. However, the tests are insufficiently powerful to determine whether there is a gain in asset values that exceeds the very limited degree of subsidy in the IMF assistance.

How should the burden be shared?

IMF assistance is typically a response to a flight of private capital from the affected country. Often the cash helps the country to repay maturing debts. This has prompted concern that the IMF is simply bailing out the international lending banks and that there should be some form of burden-sharing.

It seems unlikely that IMF aid simply goes into the pockets of the international lending banks. International banking is a highly competitive activity and the prospect that IMF support may be available in the event of difficulties is likely to be reflected in the interest rates that banks charge. Of course, in this case IMF assistance would be simply a form of aid, the benefits of which are shared between the fortunate countries that do not subsequently require assistance and the unfortunate ones that do.

If IMF assistance enables countries to repay maturing bank debts, any unanticipated announcement of assistance would result in an increase in the value of the equity of lending banks. In practice, there do not appear to be any abnormal returns in equity prices of international banks, which may

(1) The IMF's experience in dealing with crisis situations may also give it an important consultancy role in determining the appropriate policy response.

(2) Returns are measured relative to returns on similar assets in a sample of emerging markets. The results of the exercise are similar regardless of whether the announcement date is defined either by a news or press release by the IMF, or by press comment that may precede such a release.

suggest either that the IMF assistance is regarded as an automatic response to a balance of payments crisis and is therefore fully anticipated, or (more likely) that the news of IMF assistance percolates slowly and the amount of the subsidy is too small to observe.

If IMF support does result in an increase in the value of private sector debt, the IMF could try to recapture some of these value enhancements by arranging, for example, a moratorium on private sector debt. Certainly, the IMF may have a coordinating role between private lenders, in cases where they have a common interest in renewing their lines. This is the crisis manager role that has been described by Stanley Fischer (1999). However, the suggestion of compulsion would not sit well with the arguments that have been made for an international lender of last resort. If private sector lenders are reluctant to continue to lend even when the IMF has offered assistance, there is a message that one would do well to heed.

If some form of enforced 'burden-sharing' was anticipated, it would be reflected in higher interest rates on developing country debt. It is also dangerous to assume that the structure of private sector lending would be independent of attempts to recapture any value enhancement. In particular, lenders would have an incentive to structure the debt to make it easier to exit before the imposition of a moratorium. This is exactly the opposite of the financial structures that one would like to see in developing countries.

How serious is the problem of moral hazard?

Critics of the IMF's role commonly contend that the prospect of IMF assistance leads to a moral hazard problem. International banks, it is suggested, are tempted to lend recklessly to emerging markets, and the governments and banks in these countries are tempted to borrow excessively. The first point to make is that this does not necessarily reduce social welfare; it is arguable that, given the underdeveloped equity markets in developing economies, these countries have suffered from a shortage of risk capital rather than an excess. While this suggests the need to encourage the supply of equity capital, the existence of an international financial institution that partially underwrites the risk of the lending banks may serve as a second-best solution to the shortage of risk capital.

There is little doubt that the prospect of IMF assistance creates a potential moral hazard, but, while it is difficult to provide convincing evidence, it seems likely that the danger is often overstated. The subsidy in IMF loans is negligible compared with the losses that have been suffered by investors in East Asia, Russia and Brazil. Neither the promised yields nor volatility of emerging market debt is consistent with the notion that investors regarded these loans as low risk. Nor does the rapid capital outflow at the onset of a crisis suggest that investors were confident of being bailed out if they maintained their positions. Given the

heavy losses that investors have taken on their emerging market books, their caution was right.⁽¹⁾

Nor is it clear that the debtors take much comfort in the prospect of IMF assistance. Not only are governments generally reluctant to call on IMF help, but the financial crises in these markets typically impose considerable costs on all the country's citizens. In almost all cases, the appeal for IMF assistance has led to considerable domestic unrest, a fall in the government, and a change in the governor of the central bank. It is difficult therefore to believe that politicians and business people are tempted to pursue reckless policies in the belief that they will not suffer the consequences.

The role of the IMF in crisis prevention

Financial crises have resulted in large wealth losses, but there is relatively little that the IMF can do to replace this lost wealth. Despite the popular image of huge bailouts, the subsidy provided by the IMF (or 'burden', in the eyes of its critics) is negligible compared with the wealth losses that the borrowing countries have experienced. This suggests that prevention of international crises should take precedence over cure.

An interesting issue is how far the IMF can play a role beyond that of an experienced consultant. One problem for the IMF has been that countries are reluctant to seek assistance and do so only as a last resort. This shows up in the preceding asset returns. For example, over the two years before a country seeks IMF support, equity prices on average experience a relative decline of 35%. In the case of bank stocks the relative decline is about 40%. It is possible, therefore, that the need for IMF assistance would be reduced if countries could be encouraged to make earlier policy changes. This seems to be the motive behind President Clinton's proposal for contingent credit lines.

Unfortunately, it has proved difficult to devise a scheme that maximises the Fund's ability to influence economic policies without at the same time risking excessive strain on the Fund's resources. Suppose, for example, that the IMF offered a committed line of credit that would be rolled over as long as the country continues to follow IMF-approved policies. A country that entered into such an arrangement would be induced to follow the agreed policies because it wished both to maintain the insurance of the line of credit and to avoid the negative signal associated with a refusal to renew the line. However, such a scheme would also leave the IMF with a potentially large open liability. It is probably for this reason that the agreed facility does not involve a firm commitment on the part of the Fund. Instead, loans under the facility will depend on the health of the IMF's resources,⁽²⁾ evidence that the country is the victim of 'contagion' that is largely outside its control, and the country's willingness to pursue a further agreed set of policies. By seeking to retain leverage at the time that the

(1) Share prices of banks with large exposures to emerging markets have also reflected investor concern about potential losses.

(2) The agreed contingent credit line envisages that a country will normally have access to between 300% and 500% of its Fund quota.

funds are released, the IMF is giving up most of the leverage at the time that the facility is entered into and is reducing the incentives for any country to apply for the facility. Thus, in the trade-off between exerting leverage and retaining flexibility, the Fund has placed almost exclusive emphasis on flexibility.

Crisis prevention and the lessons from the Asian crisis

We argued above that there are strong limitations to the ability of any international financial institution to resolve a major financial crisis, and that the focus of public policy should be on prevention rather than cure.

Debate about possible policy responses has focused on a number of issues. First, part of the blame for recent financial crises has been laid at the door of pegged exchange rates and this has led to the view that countries need to choose between freely floating currencies on the one hand and currency boards or enlarged currency areas on the other.⁽¹⁾ Second, the substantial capital flows to and from the affected countries have prompted concern about excessive speculation and raised the question of whether governments should throw sand into the speculative works in the form of a Tobin tax or capital controls.⁽²⁾ A third set of issues centres on corporate ownership and governance in the affected countries, as it has been argued that discipline has been weakened by the degree of conglomeration in corporate structures and the close relationships between non-financial corporations and banks.⁽³⁾

This paper bypasses these issues and focuses instead on the role of capital structure in the recent financial crises.

Capital structure and the distribution of risk

One of the main lessons of recent events centres on the distribution of risk. The Asian crisis occurred first in the real economy, where huge overcapacity and increasing costs led to a sharp fall in profitability. The crisis in the real economy showed up in the financial sector in the form of large capital outflows, falling asset prices and insolvencies in financial institutions. There are always likely to be shocks in the real economy, but countries and their institutions can adopt financial structures which ensure that the consequences of these shocks are distributed efficiently. Two features of the financial structure in the affected Asian countries were a particular source of difficulty:

- Many of the banks borrowed dollars and reinvested in domestic currency loans. Their willingness to do so

was enhanced by their belief that the governments were committed to maintaining the currency pegs. Some banks believed that they had hedged the currency risk by also making dollar loans to local companies. But, since the borrowers had no dollar income with which to repay these loans, the banks found that they had merely substituted credit risk for currency risk.

- The currency mismatch was also accompanied by a maturity mismatch, with banks funding in the short-term interbank market and then relending at longer maturities. Thus banks faced a problem of rolling over existing loans as they matured, and could do so only on very unfavourable terms. Governments also funded themselves with very short-term debt, so that they too were faced with the problem of rolling over maturing loans at very high rates. This created a conflict between the need to reduce the government deficit and the need to raise interest rates to protect the currency and thus the cost of foreign currency debt, much of which was incurred by the banking system.

The choice of financial structure is largely a problem of risk distribution. Capital can be provided either in the form of equity or of debt. The heavy reliance on debt finance by many East Asian companies meant that only a small reduction in profitability was needed to produce financial distress and default, the costs of which were borne largely by local banks. This points to the need to improve the supply of equity in these countries. This is particularly important in the case of capital inflows. Since developing economies are often relatively undiversified, foreign equity ownership has the advantage of spreading risk more widely.

Foreign equity investment can be either in the form of portfolio investment or direct investment. Portfolio investment is more easily reversed than direct investment. Thus heavy net purchases of East Asian equities by foreign investors were replaced by modest net sales in 1997.⁽⁴⁾ Although these sales were necessarily taken up by domestic investors, many of the foreigners who sold their stock converted the proceeds to dollars and this contributed to the pressure on exchange rates. In contrast to portfolio investment in equities, foreign direct investment in the affected Asian countries declined only modestly, while for Asia as a whole it actually increased.⁽⁵⁾

Unlike equity, debt brings with it the risk of default, but debt instruments may differ in a number of ways that affect the allocation of risk:

- *Currency.* The recent financial crises have highlighted the risks for governments, banks and industrial

(1) If financial crises are a consequence of fixed exchange rates, then it is arguable that the IMF should abandon its traditional role of providing funds to countries to defend a currency peg. This view was expressed forcefully by Robert Rubin (1999).

(2) For a discussion of the role of capital controls see, for example, Dooley (1996) and Eichengreen, Mussa, *et al* (1998).

(3) For discussion of these issues, see Myers (1998) and Rajan and Zingales (1998).

(4) Institute of International Finance (1999b).

(5) While foreign direct investment accounted for about half of private capital inflows into all emerging Asian markets before the crisis, it accounted for only about one sixth of the private flows to the affected countries. This difference between the liquidity of direct and portfolio investment may go some way towards explaining why some countries were relatively insulated from the shocks that affected other parts of the region. For example, while China shared the problems of a chronically weak banking system, an overgeared corporate sector, excess capacity in many industries, and a sharp expansion of domestic credit, the ratio of foreign direct investment to financial investment in China was substantially higher than in the most affected countries (Lardy 1999). As a result, China did not experience the capital outflows of its neighbours.

companies of unmatched foreign currency borrowing. Clearly, loans between different currency zones must always involve a currency risk for some party, but it is undesirable that these risks should be concentrated in the developing country, and particularly in its banking system.

- *Maturity.* Borrowers that finance with a succession of short-term loans must roll over their loans at rates that reflect their changing credit risk. As the debt maturity is lengthened, more of that default risk is passed to the lender. Thus long-term debt effectively provides the borrower with insurance against a rise in the default premium. Of course, such insurance does not come free, for the lenders will charge a higher rate of interest on long-term risky loans (Merton 1974).⁽¹⁾
- *Guaranteed lines of credit.* A related mechanism for risk-shifting involves guaranteed lines of credit. For example, a group of foreign banks have entered into a firm commitment (ie without a 'material adverse change' clause) to lend Argentina up to \$7 billion against collateral at 200 basis points above Libor. Similarly, Mexico has arranged a simple overdraft facility for about \$3 billion. In both cases the governments paid a commitment fee and in exchange the banks took on the risk of movements in the default premium.
- *Interest rate.* Long-term *variable-rate* debt shifts the risk of changes in the default premium from the borrower to the lender. With long-term *fixed-rate* debt, both the default premium and the risk-free interest rate are fixed. In the case of corporate debt, the impact on risk depends on the effect of interest rate changes on the value of the firm's assets. However, since major financial crises typically involve both a sharp rise in real interest rates and a fall in the nominal value of corporate assets, the issue of fixed-rate debt avoids the prospect of an increase in debt-servicing costs at a time of declining profits.

Since increases in the domestic short-term interest rate are a common response to a financial crisis, long-term fixed-rate government debt frees the government from the conflict between raising interest rates to protect the currency and holding down its borrowing costs. Governments have a further reason to prefer the issue of fixed-rate, long-term debt, since it plays a role for governments similar to that of equity. Governments have uncertain income. If there is an unanticipated fall in the real value of this income stream, then the government can seek to recover the deficit from its citizens in the form of higher taxes or poorer services. However, particularly in developing countries, it may be infeasible to require the citizens to bear all the risk

of the government's activities, so that the bondholders may need to take on part of that risk. The interest rates adjustment that is needed to enforce real wealth losses on the bondholders is much smaller if the government is financed largely by long-term nominal debt denominated in its domestic currency.

- *Call provision.* Call provisions on bonds may have both a signalling and an incentive effect, since a borrower that is prepared to pay a premium for the right to repay early has an incentive to maintain the value of its debt, and credibly signals its confidence that it can do so.
- *Structured debt.* Structured debt makes it possible to tailor debt service more closely to the borrower's ability to pay. This may be particularly important for sovereign governments that cannot issue equity directly. One possible response, suggested by the insurance industry, is to issue catastrophe or 'forgiveness' bonds, the payments on which are reduced in the event of a defined catastrophe. An alternative is to index the debt service to some measure of economic output. Thus Mexico has issued oil-linked bonds, while Bulgaria has issued GDP-indexed bonds. A somewhat simpler solution is to combine an issue of straight debt with simultaneous commodity or equity swaps. For example, a government could gain considerable protection against the effects of an economic crisis by entering into an equity swap whose payments are linked to the level of its domestic equity index.⁽²⁾
- *Debt conversion.* Debt brings with it the risk of default, and in countries where the bankruptcy code is undeveloped or its application unpredictable, this may raise the cost of debt. A somewhat unconventional solution might be to develop debt that converts automatically to equity as the value of the borrower's assets declines. Since the role of bankruptcy codes is to ensure the orderly transfer of ownership to the debt-holders in the event of default, such a security would build the bankruptcy mechanism directly into the debt contract and would therefore substitute for local bankruptcy law.
- *Securitisation.* The Asian crisis highlighted the problems caused by domestic banks which acted as intermediaries between international lending banks and local corporate borrowers. The cost of financial distress in the corporate sector therefore fell first on the local banking system. This could be avoided if the debt was securitised or was raised directly from the overseas banks.

We have argued that the financial crisis in Asia was exacerbated by the countries' financial structure, notably the

(1) Note that this does *not* imply that longer-term debt raises the cost of capital for emerging markets. Capital structure irrelevance propositions are not violated simply by changes in debt maturity.

(2) An alternative which would largely eliminate the possibility of moral hazard would be to link payments to a regional equity index.

high degree of corporate leverage, the dominance of local bank financing and the currency and maturity mismatch of this bank lending. The result was that risk was poorly diversified and unduly concentrated on the country's banking system. There is no single optimal capital structure for either corporations or governments. We cannot say, for example, that local currency debt is always less risky than foreign currency debt, or that fixed-rate debt is preferable to variable-rate debt. Our discussion, however, illustrates the importance of both the level and design of debt in allocating risk.

Notice that changes in capital structure redistribute risk, and can therefore mitigate the consequences of future wealth losses. But the time to redistribute risk is before losing all your wealth. The bankrupt gains little by resolving never to go to the casino again. Once the losses have occurred, they cannot be recovered by voluntary debt restructuring. Voluntary restructuring can shift the time pattern of cash flows and their risk; it cannot affect value. It is part of crisis prevention; it has little role to play in crisis resolution.

Policy implications

In this section we sketch some of the policy implications for developing countries, most of which flow fairly directly from our analysis of the issues. We begin with the role of foreign capital.

Since a high proportion of foreign investment in developing countries has been in the form of short-term debt, it has provided little risk pooling and has led to substantial capital outflows with an associated pressure on reserves. Policy, therefore, needs to be aimed at increasing the proportion of foreign capital that is in the form of foreign direct investment or equity portfolio investment. In particular, liberalisation of foreign direct investment or inward equity portfolio investment needs to be undertaken in parallel with that of short-term banking flows.

There are some encouraging indications that an increasing proportion of foreign capital in emerging markets is of a long-term nature. For example, foreign direct investment in emerging markets has increased by 30% a year since 1990, and by 1997 had reached nearly 50% of private capital inflows to emerging markets (though it remained relatively unimportant in South East Asia).⁽¹⁾ Foreign direct investment depends partly on the absence of government constraints that are often designed to protect particular local industries, but it is also heavily dependent on a benign political, legal and institutional infrastructure.

Since 1980 an increasing fraction of the indirect investment in emerging markets has been securitised, with the result that both equity and bond investment have grown at the

expense of bank lending. This has had two advantages. While these portfolio flows have been more volatile than direct investment, they are at least more stable than short-term banking flows. Also, proportionately more of the risk has been borne by foreigners and thereby pooled. In some countries, the growth in foreign equity investment has been hampered by direct restrictions on ownership. For example, before May 1997 foreign equity investment in Korea was inhibited by the fact that investors as a group were not permitted to hold more than 20% of the shares of any Korean firm.⁽²⁾ But, even where there have been no such formal constraints on foreign equity holdings, investment has been restricted by the costs of accessing overseas markets. There are various actions that may help to cut these access costs. For example, trading costs could be reduced by making it easier for firms to list on overseas exchanges and by deregulating the domestic exchanges. Other (and potentially much larger) costs arise from the difficulties of acquiring information about an overseas market and therefore depend, among other things, on the quality of accounting data and the regulation of trading activity. The growth of specialist country funds suggests that investing through such funds may have helped to economise on the costs of collecting information.⁽³⁾

We have stressed the role of short-term bank loans in the Asian crisis. Such short-term loans shift risk from the lender to the borrower, who must take on the uncertainty about the default premium when the loans are rolled over. Therefore, contrary to some recent suggestions, the regulatory authorities who are responsible for the solvency of the *lending* banks have no reason to encourage them to increase the maturity of their interbank loans. However, the regulators for the *borrowing* banks do need to be concerned about both the maturity and currency mismatch of the bank portfolios. Moreover, the heavy sectoral concentration of these loan portfolios and the very high leverage of many corporate borrowers emphasise the need for much stronger supervision of the lending practices of the local banks and of the valuation of their loans.

While there are dangers in abrupt increases in competition, there is a strong case in many developing economies for reducing barriers to entry by foreign banks, which would facilitate direct loans from these banks to corporates, rather than by way of the interbank market. Such competition is also likely to be the best antidote to uncommercial lending practices by domestic banks.

Corporations in the crisis countries had not only expanded productive capacity with little regard for prospective returns, but they had financed this expansion largely by borrowing. Thus a relatively small decline in economic activity led to widespread defaults, the cost of which was borne by the banking system. This suggests three further policy aims.

(1) As a result of the capital outflow in 1998 from crisis countries, direct investment rose in that year to 84% of net private flows to emerging markets (Institute of International Finance, 1999a).

(2) This proportion was increased progressively to 50% in December 1997. Restrictions on foreign investment in long-term Korean corporate bonds have been even more severe.

(3) Between 1990 and 1995 the number of US country funds increased about fivefold and the assets under management increased from \$13 billion to \$109 billion (Serra (1999)). For evidence that country funds economise on information costs, see J A Frankel and S L Schmukler, (1997).

The first is to promote greater use of equity finance. Deregulation of the underwriting market can help to reduce the costs of issuing equity, while the supply of equity finance can be enhanced by encouraging foreign equity ownership and by increasing domestic institutional ownership.⁽¹⁾ The second policy aim should be to reduce the cost of default by improved bankruptcy procedures. The third is to reduce the *probability* of default by encouraging more efficient hedging. In some cases efficient hedging instruments already exist. For example, the development of the swap market has provided borrowers with a low-cost way to separate the currency of the loan from their exposure to that currency. The problem therefore was not that the means for hedging were absent, but that Asian corporations and banks were confident that the currency pegs would be maintained and were content to take on the risks of foreign currency borrowing. But currency fluctuations are not the only macro risks that threaten corporations and governments in developing countries. Particularly for governments, which are unable to issue equity explicitly, there is a clear need for them to design debt structures that hedge against the principal risks. There is much talk about involving the private sector in crisis prevention.⁽²⁾ The greatest potential contribution of commercial and investment banks to crisis prevention would be to devise and market efficient hedging instruments to corporations and governments.

Conclusion

Underlying public policy towards international crises is the view that markets are subject to a succession of contagious bubbles and panics, which the authorities can, and should, intervene to ameliorate. However, significant progress in developing policy will be made only when it is recognised that financial markets generally function well, and that international financial institutions have neither the resources nor the superior information to stem the wealth losses that these crises cause. Thus the principal function of the IMF is not to counteract supposed failures of financial markets by acting as a lender of last resort, but instead the IMF should use its ability to impose conditions that would be difficult for private institutions to require.

There has been considerable concern that the primary beneficiaries of IMF assistance are the major international banks, which have been able to avoid the consequences of their imprudent lending and have therefore little reason to be any more prudent in the future. These concerns are almost

certainly misplaced. International banking is a competitive activity and there is no reason to suppose that the banks have been able to appropriate to themselves the (very small) subsidy in IMF loans. Nor does the yield and volatility of developing country debt suggest that lenders regard that debt as underwritten by the IMF. Moves to 'bail in' private lenders by (say) a moratorium on debt service are likely to be counterproductive, since they are likely to increase the cost of private sector debt and induce banks to exit even more rapidly.

The emphasis of public policy should be on crisis prevention rather than resolution. The Asian crisis was prompted by huge industrial overcapacity and increasing costs, which led to a sharp fall in profitability. This crisis in the real economy showed up in the financial sector in the form of large capital outflows and considerable strains on the domestic banking system. This suggests the need to develop financial structures that can distribute risks in the real economy more efficiently.

A large proportion of foreign capital was in the form of short-term, foreign currency interbank loans. This capital inflow was not only easily reversed, but the risks were concentrated in the developing countries' banking systems. Where capital consisted of foreign direct investment or equity portfolio investment, capital flows were much more stable and the risk was efficiently pooled with foreign investors.

Unlike equity, debt brings with it the risk of default. This risk, however, is influenced by the structure of the debt. For example, we noted how the risk of changes in the default premium can be reduced by an extension in debt maturities, and we showed how structured debt can be used to reduce the risk of default. It is also undesirable that default risk should be borne solely by domestic banks. The pool of lenders can be widened, both by encouraging the entry of foreign banks and by securitisation of corporate debt. There are some encouraging signs that some of these changes in financial structure have already been taking place. For example, an increasing proportion of capital inflows into emerging markets has been in the form of foreign direct investment, and more of the indirect investment has consisted of bond and equity investment rather than bank loans. Nevertheless there are a number of possible institutional reforms that could help to accelerate these processes.

(1) This is frequently associated with the development of private pension schemes.

(2) See, for example, International Monetary Fund (1999) and Institute of International Finance (1999b).

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