Globalised Financial Markets and Financial Crises

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I Introduction

Over the last two decades financial crises have tended to occur increasingly frequent. The modern era of big crises started with the Mexican default in 1982. Immediately thereafter, most of the developing countries faced a withdrawal of funds which led to numerous crises. It took a decade of painful adjustment before the developing countries could regain access to international borrowing. The next wave started with the mini-krach on Wall Street in 1987. Contagion immediately affected European markets (King and Wadhwani, 1990) but the crisis was promptly dealt with through a large-scale injection of cash by the Federal Reserve and other OECD central banks. A few years later, in 1992-93, the European Monetary System remained under siege for nearly a year. The crisis in fact had started in Europe outside the EMS area, in Sweden and Finland. In the end the system had been defanged as it shifted to fluctuation bands so large that they were unlikely to be binding. Next, in 1994-95 the Mexican crisis was followed throughout Latin America by the 'tequila' effect. Mexico itself faced two years of high inflation and recession. Finally, the Thai crisis spread in 1997 throughout Southeast Asia, also affecting the Czech Republic, Brazil, Poland and Russia among others. Figure 1 displays the number of crises in developing countries as determined by Frankel and Rose (1996), i.e. before the latest wave. From this accumulated experience a number of lessons emerge. Some of these lessons are pretty uncontroversial but others remain hotly debated and often fail to find their way into policymakers' reasonings.

Empirical work on the characteristics of crises has quickly developed over the last few years. A number of conclusions emerge from the studies of Eichengreen, Rose and Wyplosz (1995, 1996); Kaminsky, Lizondo and Reinhart (1997); Frankel and Rose (1996); and the IMF (1997). First, currency crises are typically preceded by overvalued exchange rates, as well as fast growth in domestic credit and current account deficits. Second, there is no clear link between fiscal policy and crises. Third, crises are followed by exchange rate undervaluation, inflation, high interest rates and an improvement in the current account. Fourth, domestic asset prices do not

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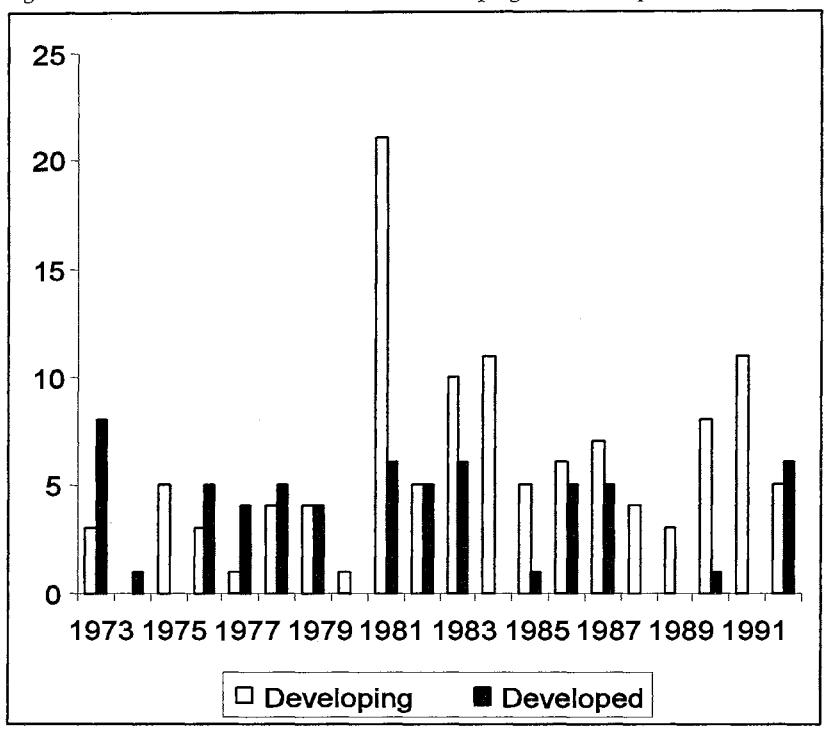
fall ahead of the crisis; they are often high before and quickly decline at the time of the crisis. Fifth, in the case of developing counties, crises tend to occur when interest rates in developed countries bottom up. Although not yet backed by hard evidence, these stylised facts lend themselves to a number of tentative albeit important implications.

Figure 1 Number of Financial Crises in Developing and Developed Countries



Source: Frankel and Rose (1996); Eichengreen, Rose and Wyplosz (1995).

First, financial market liberalisation is the best predictor of currency crises. This has been true for Latin America in the 1980s, for Europe in the early 1990s and for Asia in 1997. The channels are capital inflows which pose delicate policy problems, exposure to currency risk, and heightened volatility.[1]

1 For a survey on the literature on capital inflows see Calvo *et al.* (1996), for the role of exposure see Mishkin (1996), for volatility see Calvo and Mendoza (1998).

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Second, crises seem to spread contagiously. Once one country comes under attack, "similar" countries follow.[2] What "similarity" exactly means remains an open research question. There are clear geographical effects (Latin America, Europe, Southeast Asia), but structural aspects, such as banking structure or external debt levels, also seem to matter.

Third, crises often occur without warning signals and come as big surprises. While there is a tendency to blame myopic markets and official watchdogs, another interpretation relies on rationality. Under the alternative view, markets operate with limited information and tend to come around to holding average views which can shift in a radical and unexpected manner.

The combination of financial deregulation, contagion and erratic market behaviour suggests that financial markets are not the epitome of perfection that they are often made out to be. Financial markets occasionally misfunction and, when they do, the effects can be dramatic as illustrated by the experience of Mexico, Argentina and Asia. Measured in terms of bank and firm defaults, the costs are enormous. Measured in terms of lost output and unemployment, the costs are even more frightening.

Should something be done about it? Yes of course, but a seriously complicating factor is that crises are often not predicted, because they are unpredictable. Better information and early warning signals may help but will not prevent crises, nor will they provide guidelines when crises hit. This paper suggests methods to reduce the incidence of crises and to alleviate their effects. These methods are sometimes seen as controversial because they rely on the view that financial markets are prone to failures. The next section argues that lessons from past crises have still not be taken on by mainstream policymaking circles, although there are indications that ideas evolve towards the recognition that some form of public intervention is in order. Section III draws new lessons form the most recent crises. These lessons were likely to further disquiet policymakers attached to a heavy dose of *laissez-faire* in financial matters. Section IV presents policy proposals while Section V provides a summary of conclusions.

II Old Lessons Not Learned

A few well-known causes lie at the root of currency and financial market crises. These causes have been seen at work in the previous episodes[3] and

2 Evidence of contagion has been provided by Eichengreen, Rose and Wyplosz (1996) for the OECD countries, and Calvo and Reinhart (1995) for Latin America.

3 See e.g. Eichengreen and Wyplosz (1996).

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here they are again, hitting the Asian economies. This section reviews an all too familiar territory.

1. The Inconsistent Trinity

A basic principle of open macroeconomics is that we can only have two of the three following features: a fixed exchange rate, full capital mobility and monetary policy independence. Any pair is possible but any attempt at achieving all three inevitably results in a currency crisis. The reason for this inconsistency is well-known. Full capital mobility implies that the interest rate is determined by financial conditions out of reach for domestic monetary authorities: interest rates abroad, market expectations of the future path of the exchange rate and risk premiums. A fixed exchange rate implies that the central bank must stand ready to buy or sell its own currency in unlimited quantities. Money supply is fully determined by demand and monetary independence is lost. To recover independence, a country can either give up the fixed exchange rate target or recover control of its interest rate and demand for money by preventing capital movements. By liberalising capital movements Asian countries – as did the UK and Italy in 1992, and Mexico in 1994 – violated this iron law of macroeconomics.

2. Financial Markets Are Subject to Serious Information Asymmetries

A standard characteristic of financial markets is the extensive presence of information asymmetries. By definition, lenders know less than borrowers about the latter. As is well known, this leads to both moral hazard and adverse selection. The standard analysis explores the implications for the lender/borrower relationship. Moral hazard leads to a variety of market failures – essentially inefficient *ex post* enforcement of sanctions and excessive *ex ante* risk-taking – as well as inappropriate macroeconomic policies. Adverse selection implies a drying out of the market when risk is perceived to rise, which in turn may elicit dangerous behaviour by lenders. The case of Mexico in 1994 well illustrates the latter point: by replacing its peso-denominated debt with dollar-denominated debt, the Mexican authorities were signaling their unwillingness to inflate away their debt. However, in so doing they exacerbated their difficulties. Markets were prompt to conclude that Mexico's situation was unsustainable.

The ubiquitous prevalence of information asymmetries carries potent implications for international finance.[4] Many practical implications will be

4 This view is elaborated at length by Mishkin (1996).

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brought up below. At this stage, it is important to note that the popular view, that financial markets efficiently match worldwide savings and borrowing needs, is unlikely to be correct. That financial markets channel billions of dollars everyday from one point of the planet to another at minimum cost and with maximum safety, and that they treat an amazing volume of information on a minute-by-minute basis does not in any way mean that the markets are efficient in the economic sense (full information Arrow-Debreu). Information asymmetry is massively present and there exist non-atomistic agents with non-economic aims.[5] Instead, the presumption should be that financial markets may occasionally disrupt economic activity. What is required is a sober assessment of the market failures, their nature and quantitative importance.

3. Good Behaviour as a Source of Severe Difficulties

Since the seminal work of Stiglitz and Weiss (1981) it is well understood that lenders may prefer not to extend any credit at all rather than take unknown risks when they are uncertain about the borrower's exact situation. Charging a market premium is a way to face borrowing risks. However, charging high premiums is not desirable when the risk is poorly understood. The reason is adverse selection, or the familiar 'lemon market' effect. Lenders know that potential borrowers have an incentive to misrepresent the truth. If they ask large premiums as a measure of protection, the borrowing costs may exceed what is really justified. Borrowers cannot truthfully communicate their own riskiness to lenders because their word is not credible. Lenders fully realise that risk premiums may in some cases be excessive, but they are unable to tell the good from the bad cases. Worse, lenders are rationally led to suspect that those borrowers still willing to accept excessive premiums are those whose riskiness is even larger than justified by the premiums. Borrowers with more limited risk should not be willing to pay such large premiums. The market separates into two groups of borrowers: good borrowers that do not want to borrow, and bad risks willing to borrow. The rational response of lenders is not to lend, or to lend limited amounts. This gives rise to the phenomenon of credit rationing where there is no interest rate at which lenders and good borrowers can do business.

This information asymmetry can be very large in international lending, for obvious reasons. It affects private and public borrowing. Starting with

5 This point is not new, of course. Keynes is often quoted as a critic of the financial market mystique. It has been recently re-stated *inter alia* in Eichengreen, Tobin and Wyplosz (1995). For an antidote, see Dooley (1996).

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private borrowing, even the largest companies in developing countries are not sized-up sufficiently by investors from developed countries. In addition, many developing countries restrict access to their domestic markets so that the strength of domestic companies can be less than what it looks. Limited democracy is often associated with nepotism and corruption, a source of both fragility and opaqueness that further aggravates the situation. Fast economic growth in a particular country can act as a mitigating factor. In Asia, however, it has been noted that fast growth is the result of heavy investment, not unusual productivity gains (Young, 1992). As a consequence, growth does not always outpace indebtedness.

The outcome is heavy credit rationing as, typically, only "blue chip" companies have access to foreign borrowing. Even then, lenders are circumspect and stand ready to withdraw at the first sign of danger. Less reputed corporations can only access foreign financing through bank intermediation. Banks then undertake both maturity and currency transformation, opening up additional sources of weakness.

Turning to sovereign borrowing, it is difficult to separate out *ability* from *willingness* to pay (Bulow and Rogoff, 1988). Ability to pay depends on a host of factors difficult to assess by lenders: neither macroeconomic (e.g. the effect of recessions on tax revenues) nor political (e.g. the possibility to raise additional taxes) factors can be treated as a regular business risk. Because legal recourse against sovereign borrowers is limited, states may simply be unwilling to pay. It is possible then to imagine two situations. In a good state of the world, when risk is low, lenders do not ask for large premiums. Then good and bad borrowers alike are in the market. If the situation suddenly worsens, or is perceived to have become riskier, risk premiums immediately increase and credit rationing becomes more severe. Sovereign borrowers either do not want to borrow, or are unable to find willing lenders. The result is a market breakdown in the form of a worldwide credit crunch affecting a wide range of "suspect" countries.

The result is that corporations and governments face varying degrees of credit rationing. A paradoxical implication is that good economic "news" becomes a threat. Improved macroeconomic conditions (e.g. the end of a period of high inflation) visibly reduce a country's riskiness. Domestic financial deregulation improves the degree of transparency. In such cases, the extent of credit rationing declines. Corporations and authorities alike then face higher borrowing ceilings. As they move from one level of external borrowing to a higher level, the resulting once-off stock effect translates into a sudden increase in capital flows. The surge is transitory in nature, which presents the recipient country with a severe trade-off.[6] The

6 The situation is well analysed in Calvo *et al.* (1996).

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authorities can allow the inflows to reduce domestic interest rates while the exchange rate appreciates, leading to a spending (consumption and investment) boom as residents take advantage of temporarily improved conditions. The boom and exchange rate overvaluation is often accompanied by a financial bubble. Alternatively, the authorities may resist the boom by intervening in the foreign exchange market, accumulating reserves and then sterilising them. In that case domestic interest rates remain high which fuels further inflows. In addition, the authorities face quasi-fiscal costs because the interest that they receive on their forex reserves is lower than what they pay as the result of sterilisation operations. Eventually, the perception of endless flows and the weight of the quasi-fiscal costs force the authorities to give in and to let the boom occur.

The puzzling element is that this trouble is the normal outcome of an initial improvement in economic conditions. The capital inflows are transitory, but is not a soft landing possible? Experience shows that this is almost never the case. As markets expect an exchange rate and asset price correction, both foreign and domestic operators stand ready to leave the country at the first sign that the inflow period is over. The hard-lending takes the form of a sudden shift from boom to bust.

One reason for this apparent fatality lies with faulty interpretations. The mirror image of capital inflows is a current account deficit, as shown in Table 1. These deficits are unsustainable, but so is the source of the phenomenon, the stock-flow adjustment described above. In principle *laissez-faire* should take care of the situation. As inflows naturally dry out the exchange rate should gently depreciate, inflated asset prices should decline and domestic spending should return to sustainable levels. This is not the way financial markets operate. They typically shut the borrowing window abruptly and without advance notice, mostly because they are scared that the soft-lending scenario may be derailed by other investors' panic reaction. In doing so they create the hard-lending scenario that they so fear.

Table 1 Pre-Crisis Current Account Deficits and Real Appreciation: Some Examples

	Mexico (1988-94)	Indonesia (1990-97)	Korea (1990-97)	Malaysia (1990-97)	Philippines (1990-97)	Thailand (1990-97)
Real exchange rate appreciation (%)	38	25	12	28	47	25
Current account (% of GDP)	–	-6.4	-2.6	-13.5	-5.8	-14.3

Note: The current account is the annual average over the period 1990-97.
Source: IMF.

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4. The Phenomenon of Multiple Equilibria: Self-Fulfilling Crises and Unpredictability

Exchange markets, and financial markets in general, are subject to the phenomenon of multiple equilibria.[7] The generic cause of the phenomenon is that when markets act on the basis of expectations of a particular outcome, they are strong enough to actually deliver this outcome. Put differently, what makes a crisis occur is the belief that it *can* occur. This is an inherent feature of the human nature of economic actions, in contrast with physics: a bridge cannot collapse simply because it is believed that it *can* collapse. What makes this phenomenon particularly perplexing is that expectations that are *ex ante* unjustified are validated *ex post* by the outcome that they have provoked. They can be self-fulfilling.

For a while, self-fulfilling crises have been considered as a theoretical curiosity without practical relevance. The EMS crisis of 1992-93, however, is an example of a self-fulfilling crisis which required a policy response (Eichengreen and Wyplosz, 1993). Similarly, once Mexico had devalued its currency in December 1994, the markets figured out that the new administration was not as much committed as the previous one to the exchange rate system (see Sachs *et al.*, 1995). Similarly, while Thailand is a case where fundamentals were wrong, and had been so for a while, the other Southeast Asian countries were not obvious candidates for a run on their currencies. When the attacks occurred, though, otherwise innocuous-looking foreign currency borrowings became a source of acute financial distress, given the unrealistically low levels of the exchange rates.

There is thus a possibility that a country may find itself in different potential equilibria. One of these equilibria is the initially prevailing good one: the traditional economic fundamentals are compatible with the existing exchange rate and asset prices. Other, bad equilibria are possible, with lower exchange rate and asset prices. There may exist many, indeed an infinity of alternative "bad" equilibria. What is needed is that all such equilibria be internally consistent: the market's expectation of what the authorities will do in the event of a crisis must actually match the authorities' best course of action under the circumstances.

To be sure, not all countries are subject to multiple equilibria. There must pre-exist some weakness which is not lethal in and by itself, but which can become lethal once the situation deteriorates. Most countries

7 The theoretical reference is Azariadis and Guesnerie (1986). For an application to exchange markets, see Obstfeld (1996). The bridge example that follows is borrowed from Lucas.

probably exhibit one form of weakness or another. Under normal conditions, such weaknesses are not expected to bring hardship. If all goes well, the weaknesses eventually disappear without further ado. Self-fulfilling crises are built on such weaknesses – they may occur but they do not have to. A weakness is a necessary condition for a speculative attack, but not a sufficient condition.

At this stage, we do not have any understanding of what triggers self-fulfilling attacks. Some countries face a crisis while others, equally open to risk, remain untouched. Countries without any weakness are on the safe side, but most countries may be attacked. Fortunately, only few crises occur at any given point in time. Self-fulfilling attacks are fundamentally unpredictable.

5. Sequencing and the Choice of an Exchange Rate Regime

The combination of the impossible trinity principle and of possible self-fulfilling attacks carries an essential policy implication: financial liberalisation makes self-fulfilling attacks possible. A country with existing weaknesses should therefore move cautiously in the direction of liberalisation. Financial liberalisation is a desirable step, but it can be a source of speculative attacks as well. In the long-run, the benefits from openness are unlikely to make up for the extreme costs of successful, speculative attacks.

The lesson is that financial liberalisation should be contemplated only when the situation is ripe. That means that significant weaknesses ought to be eliminated first. The impossible trinity principle also implies that countries which accept full capital mobility must choose between monetary policy independence and an exchange rate target. Monetary policy independence requires that the exchange rate be reasonably flexible, either floating or bound by sufficiently wide bands of fluctuations. The adoption of a tight exchange rate target (narrow bands, either fixed or crawling) requires abandoning monetary policy independence, possibly opting for a currency board or joining a monetary union.

In conclusion, full capital liberalisation ought to be the last step of a process that includes establishing a strong banking system and eliminating other sources of weaknesses such as a large external debt, high unemployment, unsettled macroeconomic conditions, as well as opting for either exchange rate flexibility or a currency board or monetary union. Financial liberalisation must come last, in contrast with attempts at using capital mobility to force unpalatable solutions (e.g. a clean-up of the banking system). This is a lesson taught by the European crisis, by the Mexican crisis, and one which has been rediscovered in Asia.

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6. *Moral Hazard and Adverse Selection*

The asymmetry of information also leads to both moral hazard and adverse selection concerning IMF programmes or bilateral aid. Moral hazard arises when borrowing countries expect support in case of a crisis. The result may take two forms. First, there is the possibility of excessive *ex ante* risk-taking by the borrowers. This may include unhedged borrowing as well as inappropriate macroeconomic policies. Second, the policy response to rescue packages may also be lenient in the expectation that further bailouts can be obtained. This problem is well known and often brought up. Yet the severity of IMF programmes seems to be such that this form of moral hazard is unlikely to play an important role.

Moral hazard also alters the behaviour of lenders. Banks and other financial institutions tend to rely on the assumption that excessive lending cannot be sanctioned by systemic default. There is excessive lending at rates too low. When the crisis erupts, lenders may prefer to lobby for international official bailouts rather than costly and uncertain litigation. *Ex ante* they do not allow for contracts which include contingent clauses which cover the grey area between faithful debt service and outright default. *Ex post* they do not only shut off a country – both the sovereign and private borrowers – from the loan market altogether, but they even shift towards speculative behaviour. Speculation should normally further endanger their own assets but lenders act on the premise that these assets are protected. This moral hazard problem is more serious than the previous one. So far lenders to Mexico and the Asian countries seem to have escaped with little damage.

Another implication of asymmetric information, adverse selection, has not been widely discussed. Adverse selection occurs in two forms. The first form of adverse selection is credit rationing by lenders. The symptom then is the sudden limitation of market access when the risk is perceived to rise, which in turn may elicit dangerous behaviour by lenders. The drying-up of funds has been seen in the case of the Asian crises. The case of Mexico in 1994 clearly illustrates the dangerous response of borrowers: by replacing its peso-denominated debt with dollar-denominated debt, the Mexican authorities were signaling their unwillingness to inflate away the debt problem, but they instead created the moral hazard problem that their debt had become too big to be allowed to fail. The second form of adverse selection is the side-effect of tough conditionality designed to minimise moral hazard. By setting very rigorous conditions, the IMF may actually discourage countries facing mild difficulties, or in an early phase of crisis, from applying for support. As a consequence some countries may attempt to avoid opening up negotiations with the IMF and other donors until the

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situation has so deteriorated that there is no other choice. The delay in seeking support may make all the difference between a soft and a hard lending scenario.

II New Lessons

Fundamentally, the Asian crisis does not represent a new phenomenon. Still, some aspects previously known have been illustrated with more clarity than before. They are discussed in this section.

1. A Widening List of Weaknesses

Once it is understood that self-fulfilling crises are possible in countries which present some form of weakness, it becomes important to know precisely what weaknesses are the most dangerous ones. The European crisis of 1992-93 has shown that poor macroeconomic conditions put a country at risk. The Mexican crisis of 1994-95 has highlighted the crucial issue of foreign currency sovereign indebtedness.

With the exception of Thailand, Asian countries were not vulnerable to previously identified weaknesses. With hindsight it is now recognised that private borrowing, if unhedged, is a weakness. To be sure, it has been long understood that borrowers need to exercise prudence. The Basle prudential ratios have been designed to force banks to adopt proper behaviour in this respect. It is true that these ratios were not observed in Asia. Yet, the story is more complicated.

The unhedged external borrowings of Asian firms and corporations were indeed a source of danger if the exchange rates were to decline by a significant amount. Given the remarkable growth performance of these countries, there was little reason to anticipate the huge devaluations which have occurred in the wake of the crisis. Rating agencies never said that there was no risk. The ratings did not rule out trouble. After all, none of the Asian countries was AAA. The rating might be interpreted as signaling a very small probability of a big disaster. Lenders and borrowers alike may well have been rational in acting on the premise that a dramatic turnaround was highly unlikely. But "unlikely" does not mean "impossible". It turns out that the worst scenario has occurred. Now wisdom-after-the-fact reigns and it is "obvious" that more caution was needed, much as after the eruption of the international debt crisis in 1982 the debt problem was seen as an example of reckless recycling of petro-dollars. What the rating agencies did not detect was the imminence of risk, but in a self-fulfilling world that is probably impossible.

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Without denying that moral hazard has played a role in these episodes, a more sober assessment seems warranted. Each crisis tends to bring to the forefront a source of weakness that was known *ex ante*, but was then considered benign. This process of an ever-widening list of weaknesses is likely to continue. There will be more crises and they will add to the danger list. Unfortunately we do not know what to expect next.

2. *Policy Intervention When the Fundamentals Are Good*

A characteristic of self-fulfilling crises is that they affect countries which are not undergoing clear macroeconomic difficulties. While *ex post* many now find that the current accounts were not healthy and the exchange rates were overvalued, these signals were not flashing ahead of time, because most Asian countries were in fact on a sustainable path.[8]

It is important therefore to recognise that crises can occur even when the fundamentals are good, and to design appropriate interventions rather than looking for hopeless early-warning systems. The first post-crisis IMF programmes have tended to rely on a set of measures appropriate for crises created by bad fundamentals. They emphasised the need for tight monetary and fiscal policies even though inflation rates were low and declining, and many budgets were close to balance or even in surplus. There is strong evidence that these measures have made matters worse, not better.

Indeed, most Asian crises have seen a financial bubble burst when a weak financial system, freshly deregulated, collapsed. This resembles the US Savings and Loans crisis, the Wall Street crashes of 1929 and 1987, the near-collapse of banks in the UK, Sweden and Norway in the early 1990s. The lesson from those episodes is clear: in contrast to the misguided attempts at restoring confidence through restrictive monetary and fiscal policies, the proper policy response is a rapid reliquification of the banking system and emergency intervention – via the budget – to recapitalise banks and corporations in order to avoid a generalised credit crunch and the associated collapse in production. Curiously Fischer (1997) justifies the IMF approach using the same terminology – the need to restore confidence – as in 1929. The fact that the Asian countries have not been allowed to resort to the same policies as those successfully implemented in developed countries is worrisome.

8 Astute observers like Young (1992) had noted that the Asian miracle was not a miracle, but the outcome of large savings turned into massive investments. However, they did not predict a crisis, just an eventual slowdown.

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3. The Crucial Role of Moratoria

In fact there is a good explanation for the IMF approach, one that needs to be explicitly spelled out. The reasoning seems to have been as follows. Tight policies were called for to prevent the exchange rate from further depreciating. This was seen as essential because each drop in the exchange rate made the foreign currency debt larger. Stabilising the exchange rate, possibly reversing the depreciation, was urgently needed to prevent even more bankruptcies. Hence the insistence was that the interest rate be kept high, even though it meant adding to the powerful deflationary forces at work. This reasoning rests on two assumptions which are highly questionable.

The first assumption is that the exchange rate is positively related to the interest rate. This textbook relationship is unlikely to apply at a time of crisis. Textbook theories cannot explain the depreciations observed in Asia. If we accept instead the multiple equilibria assumption, explained in Section II, a very different interpretation emerges. This interpretation emphasises self-fulfilling expectations as the explanation for depreciations which cannot be associated with traditional fundamentals. In such a situation the link between the interest rate and the exchange rate is, at best, tenuous, and most likely non-existent. However, it is more likely that expectations are driven by the perception of the adequacy of policies pursued.[9] Indeed exchange rates throughout the regions have continued to decline even after the IMF agreements were signed.

The second assumption is that servicing the external debt should be the overriding concern of crisis-stricken countries. The rationale is that suspension of debt servicing would cut access to foreign financial markets for a long period of time.[10] There is little evidence that debt defaults actually have long-lasting effects on market access.[11] A very different view holds that the priority is to deal with the domestic implications of the crisis. A quick pump-priming of the economy may bring an early return of the fast growth performance enjoyed by the Asian countries. Along with a return of exchange rates to their "normal" fundamentals, fast growth makes it easy to resume external and internal debt servicing.

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9 Drazen and Masson (1994) distinguish between the credibility of policymakers (in this case a tough-minded IMF) and the credibility of policies, i.e. policies that succeed in dealing with the problem at hand. They show that policies which are ultimately going to fail are not credible, no matter what is the inherent quality and reputation of those who sponsor them.

10 An additional concern is that debt default might spread beyond the region, e.g. affecting Brazil or Russia. This may be a concern for the IMF but its relevance to individual countries is less clear.

11 See Eichengreen and Portes (1989).

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There is room, therefore for a very different strategy. It starts with an IMF-sanctioned moratorium. It therefore permits to disregard temporarily the exchange rate level. It is built around policies that foster an early return to normal financial and production conditions, minimising the adverse domestic effects of the crisis. This strategy may be seen as creating a moral hazard problem, but it is unlikely that the possibility of a moratorium will encourage countries to court the kind of disaster that has befallen on Asia. Furthermore, a moratorium would reduce the other moral hazard which encourages unlimited lending by banks and other financial institutions that expect to be bailed out by international rescue operations, as they have been, following the Mexican and Asian crises.

IV Summary Conclusions: Coping with Future Crises

1. Why There Will Be More Crises

The official reaction to the Asian crises (e.g. the G-7 meeting of Finance Ministers) has been to call for more transparency and the setting-up of early warning systems. Given the importance of the information asymmetry problem, any effort at providing timely and accurate information to the markets and their regulators is a step in the right direction. With considerable optimism, if we assume that all crises are due to bad fundamentals, we could hope to one day substitute hard with soft landings. The existence of self-fulfilling crises means that there will always be crises and that they will remain unpredictable.

This is why, maybe, the IMF has asked for more capital. Given the amounts disbursed in Asia, its lending capacity is reduced. The size of rescue packages have considerably increased starting with $40 billion for Mexico and up to $57 billion for Korea. There seems to be a belief that pouring sufficient large amounts into foreign exchange markets will quiet down markets when they start panicking. This would be a serious mistake. When speculative attacks occur, no finite amount of money can stop liberalised financial markets. By encouraging liberalisation the IMF has weakened itself, and its difficulties in replenishing its coffers are not only self-inflicted wounds, but also unnecessary. The IMF's stamp of approval remains as valuable as it has ever been, and is independent of the amounts committed. It relies entirely on the quality of its analyses. The IMF used to be very efficient when its programmes offered much lower loans. Reliable conditionality would then trigger larger amounts of private lending. This was leverage, IMF style. Now that operators leverage in a grand way, IMF cannot play tit for tat.

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2. *Financial Deregulation*

The evidence so far is that domestic financial market deregulation leads to boom-and-bust cycles. The main reason is the stock-flow problem described in Section II. While this is no reason to abandon deregulation altogether, the lesson is that deregulation must follow, not precede, the strengthening of the banking and financial sectors.

Similarly the liberalisation of capital movements is a desirable aim. Yet it has the effect of being followed by speculative attacks of such magnitude that the authorities are helpless, even when supported by massive rescue packages. The implication is that external liberalisation should come last and should not be complete as long as countries believe that they need to limit the fluctuations of their exchange rates. I have previously argued (e.g. in Eichengreen and Wyplosz, 1996) that compulsory deposits on exchange transactions, or on inflows as is done in Chile, have a crucial role to play. These are essentially prudential measures which discourage short-term flows while leaving long-term flows mostly unaffected. Such measures cannot prevent crises when the fundamentals are wrong, nor can they even stop self-fulfilling crises once they have picked up speed. What they can do is to slow down a crisis, giving time to the monetary authorities to work out credible policy responses. During the Asian crises we have witnessed how programmes hurriedly put together were immediately over-run by the markets. Panic programmes – designed by IMF staffers – were too flawed to stick, no matter how much money was promised. Because emergency policies are often misguided, a liberalised worldwide capital market needs emergency brakes.

3. *Exchange Rate Regimes*

When, finally, capital flows are fully liberalised, the robust choice is between free-floating and formally giving up monetary independence. Free floating has the advantage of shielding the monetary authorities from occasional vagaries in the exchange market. The downside is that crises are replaced by exchange rate volatility. When the country's openness is limited, or when its exports are dominated by staple goods, the price of which are determined on world commodity markets, this is an acceptable choice. As is the case in the US, Japan and the European Monetary Union, the costs from exchange rate volatility can be reduced when well-developed financial markets provide a large menu of cheap instruments which reduce risk-taking by non-financial entities.

Other countries will find exchange rate volatility costly as relative prices – between traded and non-traded goods, between exports and imports –

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become too unstable. The solution then is to choose between either lightly managed exchange rates or giving up of monetary independence. Lightly managed exchange rates are attractive in theory as they represent a middle ground. The risk is that they deliver both volatility and crises. Giving up monetary policy can take the form of either single-sided currency boards or collective monetary unions bringing together countries with strong trade links, as Europe is about to undertake.

4. Orderly Workouts

When crises hit countries with wrong fundamentals, traditional IMF programmes are the right medicine. When crises are of the self-fulfilling varieties, of course there is a weakness that needs to be attended to. Since most such weaknesses are structural (unemployment, high debt, weak financial and banking systems), the problem cannot be corrected in the short run, during the crisis. In addition, structural changes are easier and less costly when the economy is growing. It is essential, therefore, that the priority be given to preventing the economy from being severely hit by the crisis. In particular, when the fundamentals were right to start with, restrictive macroeconomic policies are likely to complicate matters and cause unnecessary hardship, rather than rebuilding confidence. Crisis-time policies are credible when they aim at breaking the crisis dynamics, not because they are tough.

To focus on domestic objectives, however, a country in crisis must be temporarily relieved from the weight of its external debt, especially if it is incurred in foreign currency. Currently, international lending contracts to both private and official borrowers do not incorporate clauses that take into account the possibility of speculative crises. There is room for covenants that would allow the clock of repayments to stop, while still maintaining market access. This is a complicated issue with legal complexities and the need for establishing a sort of court or referee to decide when the covenant can be invoked. Yet the costs of forcing countries to choose between debt suspension and market access are so massive that there is no reason not to undertake such an important change in international lending practices.

References

Azariadis, Costas and Roger Guesnerie (1986), "Sunspots and Cycles," In: *Review of Economic Studies* 53(5), October, pp. 725-37.

Bulow, Jeremy and Kenneth Rogoff (1988), "The Buyback Boondoggle,"

In: *Brookings Papers on Economic Activity* 2, Washington, D.C., pp. 645-98.

Calvo, Guillermo, Graciela Kaminsky and Leonardo Leiderman (1996), "Inflows of Capital to Developing Countries in the 1990s," In: *Journal of Economic Perspectives* 10 (2), Spring, pp. 123-39.

Calvo, Guillermo and Enrique Mendoza (1998), "Contagion, Globalization and the Volatility of Capital Flows," unpublished paper, University of Maryland.

Calvo, Sara and Carmen Reinhart (1995), "Capital Flows to Latin America: Is There Evidence of Contagion Effects?," unpublished paper, The World Bank, Washington, D.C.

Drazen, Alan and Paul Masson (1994), "Credibility of Policies versus Credibility of Policymakers," In: *Quarterly Journal of Economics* 109(3), August, pp.735-54.

Dooley, Michael P. (1996), "The Tobin Tax: Good Theory, Weak Evidence, Questionable Policy," In: M. ul Haq, I. Kaul and I. Grunberg (eds.), *The Tobin Tax, Coping With Financial Volatility*, Oxford University Press, New York.

Eichengreen, Barry and Richard Portes (1989), "Dealing with Debt: The 1930s and the 1980s," In: I. Husain and I. Diwan (eds.), *Dealing with the Debt Crisis. A World Bank Symposium*, World Bank, Washington, D.C., pp. 69-86.

Eichengreen, Barry and Charles Wyplosz (1993), "The Unstable EMS," In: *Brookings Papers on Economic Activity* 1, Washington, D.C., pp. 51-124.

Eichengreen, Barry and Charles Wyplosz (1996), "What Do Currency Crises Tell Us About the Future of the International Monetary System?," In: J. J. Teunissen (ed.), *Can Currency Crises Be Prevented or Better Managed?*, FONDAD, The Hague.

Eichengreen, Barry, James Tobin and Charles Wyplosz (1995), "Two Cases for Sand in the Wheels of International Finance," In: *Economic Journal* 105, January, pp.162-72.

Eichengreen, Barry, Andrew Rose and Charles Wyplosz (1995), "Exchange Market Mayhem: The Antecedents and Aftermath of Speculative Attacks," In: *Economic Policy*, 21, October, pp. 249-312.

Eichengreen, Barry, Andrew Rose and Charles Wyplosz (1996), "Contagious Currency Crises," In: *Scandinavian Economic Review* 98 (4), pp.463-84. Also reprinted in: T. M. Andersen and K. O. Moene (eds.) (1997), *Financial Liberalization and Macroeconomic Stability*, Blackwell.

Fischer, Stanley (1997), "IMF – The Right Stuff," In: *Financial Times*, 17 December.

Frankel, Jeffrey and Andrew Rose (1996), "Currency Crashes in Emerging

Markets: An Empirical Treatment," In: *Journal of International Economics* 41, pp. 351-66.
Jeanne, Olivier (1997), "Are Currency Crises Self-Fulfilling: A Test," In: *Journal of International Economics* 43, November, pp. 263-86.
Kaminsky, Graciela, Saul Lizondo and Carmen Reinhart (1997), *Leading Indicators of Currency Crises*, IMF Working Paper WP/97/79, July.
King, Mervyn and Sushil Wadhwani (1990), "Transmission of Volatility between Stock Markets," In: *Review of Financial Studies* 3(1), pp. 5-33.
Mishkin, Frederic (1996), *Understanding Financial Crises: A Developing Country Perspective*, NBER Working Paper No. 5600.
Obstfeld, Maurice (1996), "Models of Currency Crises with Self-Fulfilling Features," In: *European Economic Review*, April, pp. 1037-47.
Sachs, Jeffrey, Aaron Tornell and Andrés Velasco (1996), "The Collapse of the Mexican Peso: What Have We Learned," In: *Economic Policy* 22, pp.13-64.
Stiglitz, Joseph E. and Andrew Weiss (1981), "Credit Rationing in Markets with Imperfect Information," In: G. Mankiw and D. Romer (eds.), *New Keynesian Economics, Volume 2: Coordination Failures and Real Rigidities*, MIT Press, Cambridge, Mass.
Young, Alwyn (1992), "A Tale of Two Cities: Factor Accumulation and Technical Change in Hong Kong and Singapore," In: *NBER Macroeconomics Annual*, MIT Press, pp. 13-54.

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