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Flows and runs: capital and speculation in emerging market economies

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n.a.	Not applicable
..	Not available
-	Zero
.	Insignificant

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flows and runs: capital and speculation in emerging market economies

Introduction

Private capital flow to emerging market economies increased substantially during the 1990s. Concurrently three major regional currency crises took place during this period, namely, the European crisis of 1992–93,[1] the Latin American crisis of 1994–95 and the Asian crisis of 1997–98. The latter broke out only two years after the former, which should serve to remind us that there will be more in the future. Two of the three waves of regional currency crises took place in emerging market economies and speculative runs played a discernible role in all three. Issues related to financial flows, currency debacles and the role played by speculators have become important to both policymakers and the academic community.

Capital inflows led to instability in the currency markets, therefore, this paper examines capital flows to emerging market economies, exchange rate destabilisation and the role played by speculative runs. The paper also explores possible defence strategies to mitigate the effects of speculative attacks. The second section discusses the changes in the volume of capital market inflows over the 1990–96 period and their salient characteristics. The following section addresses what stimulated these financial flows in the 1990s after they slumped in the 1980s. The fourth section deals with the global macroeconomic environment, which includes both the source countries and the recipient emerging market economies, while the fifth analyses the sustainability issue. The sixth section focuses on the dynamics of speculative runs and exchange rate variability. It is followed by a discussion on speculative runs during the 1990s, and the Latin American and Asian financial crises. The next section focuses on defensive strategies and the final section provides a summary.

Over 1990s, access to the international capital markets became easier for the emerging market economies. During the first half of the 1990s, several economic and political events in the emerging market economies led to increased financial flows from private capital markets. Structural changes took place in both developing and industrial countries and the latter began to consider the former more lucrative and, therefore, more creditworthy economies. Several developing economies had spent the 1980s structurally adjusting their economies. Others that had spent half a century following statist, protectionist policies, abruptly changed their religion and began to adopt free-market policies. The intellectual *zeitgeist* changed during this period and the 'Washington consensus' came to be universally accepted.[2] Free markets and sound money were accepted as keys to economic development. The structural adjustments noted above were largely in line with the Washington consensus maxims. Some analysts believe that the rise of the Washington consensus was a turning point in world economic affairs (Krugman 1995). This period is known for a simultaneous reversal in macroeconomic strategy in the emerging markets and investor sentiment in the industrial world, leading to capital inflows on a large scale.

In the industrial economies savings have become increasingly institutionalised. Assets of pension funds, insurance companies and mutual funds in the 29 OECD (Organization for Economic Cooperation and Development) economies reached US$29 trillion in 1995. Such has been the scale of saving accumulation that by the end of 1998, the total assets of mutual funds in the United States are likely to overtake those of banks, which have been the dominant financial intermediary for the past two centuries (*The Economist* 1998a). The same trend exists in Japan and the larger economies of Europe, namely, Germany, France and the United Kingdom. Financial institutions in these economies have become large reservoirs of savings.

The flip side of this coin is that, as noted earlier, several developing economies have implemented structural adjustment programs. Their economies were far healthier in the 1990s—as reflected in their leading economic indictors—than before. As a rule, international capital is attracted by improvements in economic fundamentals. The institutional investors alluded to above needed to diversify their portfolios and in their quest for global diversification could not overlook the promise of the emerging market economies. Thus, increased international capital inflows into the emerging market economies were underpinned by three important factors. First, efforts of large institutional investors to obtain risk-mitigation benefits associated with holding globally diversified portfolios. Second, the improved macroeconomic and structural policies of the recipient emerging market economies, leading to higher creditworthiness. Third, slack economic growth in Japan and the European Union led to a reduction in the absolute number of investment opportunities during the first half of the 1990s. These were the principal reasons why these economies enjoyed a surge in capital inflows.

An important consequence of the above ambiance was a large movement of capital to emerging markets during the 1990s. It was on a scale (when measured relative to GDP) not seen since the gold standard era of the late 1800s and early 1990s. This growing integration

of emerging markets into the international financial system is viewed by a number of observers as reestablishing the type of relationships between capital-importing and capital-exporting countries that existed in two earlier periods of high capital mobility, that is, 1880–14 and the 1920s (Das 1996a; Obstfeld and Taylor 1997). However, this economic and financial milieu need not be seen as immutable. Divergent macroeconomic conditions in capital-importing and capital-exporting economies are likely to impart a cyclical character to private capital flows even if the trend of further integration of emerging markets into the global financial system continues. The experiences of the 1990s reveal that consistent macroeconomic, financial and structural policies are the necessary, if not sufficient, conditions to ensure sustained market access.

Capital flows in the 1990s

The economic situation confronting the heavily indebted emerging market economies at the beginning of the 1990s created considerable skepticism about how rapidly these countries would be able to reestablish their access to international financial markets. There was a sharp deterioration in the macroeconomic performance of many emerging market economies during the 1980s and net private capital inflows had declined to a trickle.[3] Several emerging market economies, particularly those in Latin America, experienced debt-servicing difficulties and their rate of inflation had accelerated. In addition, the most heavily indebted had external debt to exports ratio close to 375 per cent in the latter half of the 1980s. Some market observers argued that it could take several years before access was restored, despite several years of adjustment efforts (USS 1990).

Despite the pessimism at the start of the decade, total net private capital flows to emerging markets in the 1990–96 period soared to US$1,055 billion, more than seven times the amount they received over the 1973–81 period. These flows were over nine times as large as net borrowings from official creditors during the same period. Table 1 shows that net capital inflows soared from US$45.7 billion in 1990 to US$235.2 billion in 1996 and net foreign direct investment (FDI) from US$18.8 billion to US$105.9 billion over the same period. These are more than five-fold increases in net terms. The trend in portfolio investment (particularly bonds) was not so smooth. They rose from US$17 billion to US$106.8 billion between 1990 and 1993, but declined in 1994 and 1995. They picked up again in 1996 reaching US$70.6 billion, almost half the 1993 level. Likewise, other net investment, which includes mostly bank lendings, after rising sharply during the early 1990s, became negative in 1993 and 1994, that is, withdrawals or repayments were larger than fresh investments. However, 1995 and 1996 have again seen steep increases in these flows. They reached US$70.6 billion in 1996. It is worth pointing out that official capital flows during this period remained flat.

Table 1 **Private capital flows to emerging markets** (US$ billion)

	1990	1991	1992	1993	1994	1995	1996
Total net private capital inflows	45.7	139.8	133.4	161	147	192.8	235.2
Net foreign direct investment	18.8	32.1	37.9	56.9	75.5	87.3	105.9
Net portfolio investment	17	39.7	59.2	106.8	97.2	31.6	58.7
Net other investment	9.9	68	36.3	-2.7	-25.7	73.9	70.6
Asia	21.4	37.7	22.4	59.5	75.1	98.9	106.8
Middle East and Europe	7	73.3	42.8	24.1	-1.1	15.3	22.2
Latin America	10.3	24.9	55.5	61.7	44.9	35.7	77.7
Economies in transition	4.2	-1.6	7.1	10.9	15.4	29.1	19.4

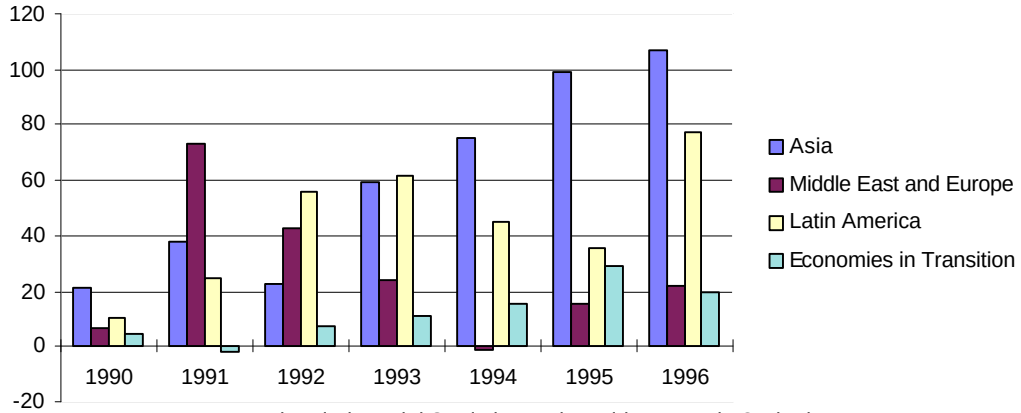
Source: International Monetary Fund, International Financial Statistics and World Economic Outlook database.

Geographical distribution of these financial flows was, and continues to be, uneven. In 1990, Asia received the largest proportion, 46.8 per cent, followed by Latin America, 22.5 per cent (Table 1 and Figure 1). The emerging economies of the Middle East and Europe accounted for 15.3 per cent of the total flows, while the economies in transition received 9.3 per cent. In 1996, Asia continued to receive a similar (45.4 per cent) proportion. During the early 1990s, the bulk of the flows continued to be concentrated in a few Asian and European countries that avoided debt-servicing difficulties in the 1980s and Latin American countries which were able to normalise their relations with private creditors. For a number of market re-entrants, the surge in capital flows complicated macroeconomic management. Either they had to face excessive monetary growth or upward pressure on exchange rate which implied loss of external competitiveness. By 1996, flows to the Latin American economies increased substantially to 33.0 per cent of the total. This increase took place at the cost of other emerging market economies, particularly those in the Middle East and Europe, whose proportion declined to 9.4 per cent.

Over the last two decades, the composition of the net flows has undergone a considerable transformation (Table 1 and Figure 2). Syndicated bank loans were a dominant instrument during the 1978–82 period, whereas portfolio investment, particularly bonds, and foreign direct investment (FDI) became the most important instruments during the 1990s. The share of FDI reached 40 per cent of total net private capital flows during the 1990–96 period. During the 1990s, bonds, equities and short-term portfolio investments such as certificates of deposit and commercial paper became popular. During the 1990–96 period, portfolio investment accounted for 39 per cent of the total capital flows into the emerging markets. Perhaps the most significant change has been in portfolio equity flows, which rose from US$1 billion (3 per cent of total net private capital flows) in 1990 to US$16 billion (7 per cent of total net private flows) in 1996. In all, inflows of private capital rose from the equivalent of 3 per cent of domestic investment in emerging market countries in 1990 to 13 per cent in 1996. Financial institutions from the emerging markets participated increasingly

in the international capital markets during the 1990s. This was the outcome of large foreign exchange reserves held by many, particularly the People's Republic of China and other East Asian economies.

Figure 1 **Private capital flows to emerging markets by destination**

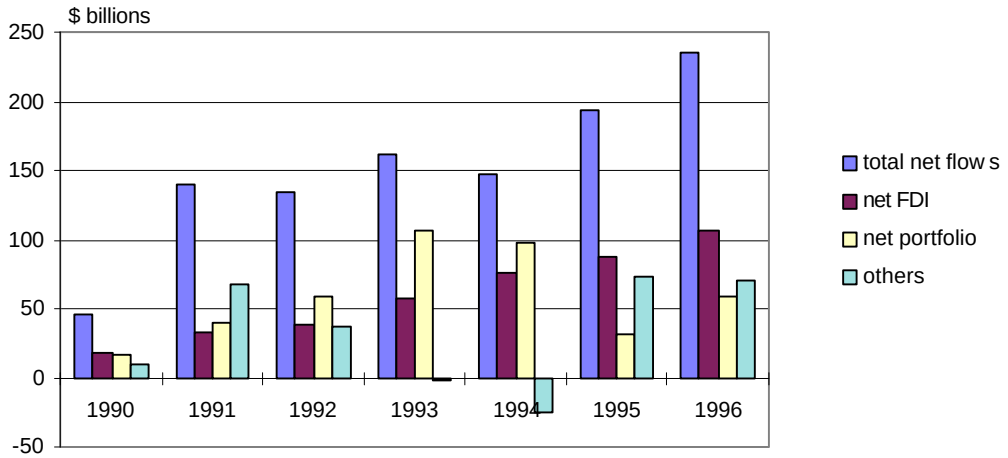


Sources: IMF, *International Financial Statistics and World Economic Outlook* database.

Private capital flows to the emerging markets were ongoing because the investor base had broadened, risk was being appropriately priced and future servicing requirements by and large matched repayment capacity. As regards the investor base, the globalisation of markets for emerging market securities has continued to broaden. Latin American securities were increasingly being sold in European and Asian markets. Similarly, with the growing involvement of mainstream institutional investors, the range of investors became more diverse. The price mechanism was working reasonably well, with a reappraisal of risk being followed by price adjustment. Consequently new investors were attracted toward emerging market securities and debt instruments.

Although firm statistical data are still not available, there is evidence of capital flows among the emerging market economies. Precise statistics in this regard are not available because the capital account reporting systems of the emerging market economies provide relatively limited information about the country of origin of most capital flows. Asia has come to have a tradition of intra-regional flows since the mid-1980s (Das 1996b). Outside of Japan, China, Republic of Korea, Hong Kong and Taiwan are substantial capital exporters in Asia. Taiwan has come to acquire the sobriquet of the banker for the region. However, Hong Kong is the single largest outward investor among the emerging markets. Firms in Hong Kong invested a total of US$78 billion overseas in 1996, a major proportion (65 per cent) of which went to the China. While China remains a net importer of capital, its firms

Figure 2 **Composition of private capital flows to emerging markets**



Sources: IMF, *International Financial Statistics and World Economic Outlook* database.

are beginning to invest abroad, with the financial services sector in the recipient countries attracting the largest share. Chinese firms make large investments in Hong Kong, Indonesia, Malaysia, Singapore and Thailand. In Latin America, Chilean firms are known to make large intra-regional investments and acquisitions. Their foreign acquisitions were worth US$2.3 billion in 1996 (IMF 1997a). Most of these were the state-owned assets of Argentina, Brazil, Colombia, and Peru. These assets could not be accumulated with the assistance of international financial markets. To finance these purchases, Chilean firms had floated bonds in the international financial markets.

Interest rates declined during the 1990s, accompanied by a sharp fall in emerging market spreads. Since the financial markets in the industrial economies were highly liquid, it is often wondered whether compression in the emerging market spreads was excessive, to the point where credit risk was being underpriced. Some market analysts believe that abundant global liquidity and the quest for higher returns in the emerging markets did work together to produce a sharp decline in the emerging market spreads. If global liquidity conditions tighten, the emerging market spreads will certainly broaden.

Stimulants

Several empirical studies have analysed the key pull and push factors behind the large-scale capital flows to the emerging market economies during the 1990s (Calvo, Leiderman and Reinhart 1996; Das 1996a; Fernandez-Arias 1996). The former refer to the structural adjustment measures taken by the emerging market economies, their macroeconomic management and the political and non-economic factors that have made them more creditworthy. The latter include both structural and cyclical developments in international financial markets that have led investors to globally diversify their portfolios and turn to emerging markets in search of higher yields.

Several structural adjustments and liberalisation measures were implemented in international financial markets during the 1990s which affected the scale, composition and

direction of the capital flows. Two of the most important developments were the liberalisation of domestic financial markets and capital account transactions. These two changes took place in both industrial and emerging market economies. One characteristic of these developments was that they were progressive and self-reinforcing and, therefore, once they were launched they continued to grow of their own accord. Bartolini and Drazen (1997) prepared an index of capital controls in emerging markets and demonstrated how capital controls were relaxed since the mid-1980s. Their index conclusively established that the decline in capital account restrictions facilitated the recent boom in capital flows to emerging markets. The correlation between the index and capital inflows for the 1982–96 period was -0.3. It provided a simple corroboration for the assumption that liberalisation of external transactions is instrumental in attracting foreign capital. Another index developed by the World Bank (1997) showed that while more and more emerging markets are now better integrated into the international financial system, the process is still at an early stage. Two recent empirical studies also provided support to the premise that there is a growing degree of *de facto* integration of domestic and international financial markets. Also, it is becoming increasingly difficult to keep domestic financial market conditions isolated from developments in international markets (Dooley, Mathieson and Rojas-Suarez 1996; Risen and Yeches 1993)

The growing roles of institutional investors and securitisation were also important developments, which resulted in increased flow of finance into portfolio investment, both bonds and equity, in emerging market economies during the 1990s. Emerging market securities are increasingly bought by institutional investors like mutual funds, insurance companies, pension funds, and of late hedge funds. These institutions were driven towards emerging markets seeking higher returns on their portfolios and greater diversification of risk. They sent only a small part of their capital to emerging markets, but the since their portfolios were mammoth in size, even a small part created a rising tide of capital flowing to emerging markets. Growing securitisation became more or less a global trend which in turn led to greater use of direct debt and equity markets. In the direct debt market lenders or investors hold a tradeable direct claim on the borrowers or borrowing firms. This works differently from indirect finance where an intermediary holds a nontraded loan asset and the saver holds a liability, which may be tradeable on the intermediary.

Recent advances in information technology proved to be a facilitating factor. They improved the capability of both investors and creditors to manage their portfolios and undertake better risk analysis of credit and market risks. Increased computing power and larger databases radically transformed the manner in which information is processed by financial institutions. Computers and information technology have increased the efficiency of global securities markets and facilitated capital flows to emerging markets. Processing and managing the issuance of bonds and equity issues have also been made easier by the new technology (Das 1996a).

Macroeconomics of financial flows

The macroeconomic environment of the global economy improved during the 1990s. This applies to both the emerging markets and industrial economies. Numerous macroeconomic factors were responsible for increasing the financial flows to the emerging market economies. The first, and perhaps the most important, factor was the improvement in the macroeconomic performance of the emerging market economies during the 1990s. It was far superior to that in the 1980s, particularly after 1982. There was a marked improvement in their economic performance after the initiation of the Brady Plan in 1989. The Brady Plan proved to be a big help for economies struggling with debt-servicing problems. Fiscal deficits for this country group fell from an average of 6 per cent of the GDP in 1983–89 to 3 per cent in 1990–96. Likewise, the average rate of inflation for this country group fell slowly first and sharply later. The rate of real GDP growth, which had come down to 2.2 per cent during the 1979–89 period, soared to 6 per cent during the 1990–96 period. The rate of export growth was down to 6 per cent for the former period, it rose to 11 per cent for the latter period. Export surge facilitated debt-servicing, therefore, the ratio of external debt service payment to exports fell sharply between 1990 and 1996. Also, the ratio of external debt to GDP fell from 54 per cent in 1990 to 37 per cent in 1996.[4] A marked improvement in macroeconomic performance was one of the fundamental reasons behind the improved access of this country group to international financial markets. The number of emerging market countries with Moody's credit rating rose from 11 in 1989 to 52 in 1997. Extensive privatisation took place in these economies during the 1990s. These measures further opened these economies for external finance.

Empirical proof of improvement in macroeconomic environment in the industrial economies during the 1990s is available in abundance. For instance, the rate of inflation continually decelerated in industrial economies between 1990 and 1996. The average rate fell from a little above 4 per cent to less than 2 per cent during this period. This resulted in a fall in nominal interest rates, both short and long-term. The former declined from an average of 7.3 per cent during 1987–90 to 4.3 per cent during 1994–96. Long-term interest rates, likewise, fell from an average of 8 per cent to 6.3 per cent during the same periods. These steady declines in nominal interest rates on the one hand and improved economic fundamentals in emerging markets on the other created more profitable opportunities in emerging market economies. Together they worked as important 'push' and 'pull' factors leading to greater capital flows to emerging market economies.

An earlier view held that it was only the downward interest rate movement that was sufficient to trigger greater capital movement towards emerging market economies. This does not seem to be correct because it is the FDI flows that increased more during the 1990s as compared to the other private capital flows. These flows are largely unresponsive to small interest rate changes. The pull factor was as important as the push factor.

Capital flow sustainability

So far I have sounded positive about the trend in financial flows. However, this optimism need not be of a Pollyanna variety because industrial economies are known to go through cycles. When the cycle takes a downward turn, the favourable capital market environment may change and with that market liquidity. The other possibility is that economic conditions in an emerging market economy may deteriorate, which may cost its access to the international financial markets. Under both these circumstances, the financial flows may be reversed. Sustainability cannot be taken for granted.

We have seen that the composition of the financial flows underwent a transformation in the 1990s. Short-term flows in the form of bonds, equities, and short-term instruments like certificates of deposit and commercial paper became popular instruments and accounted for a substantial proportion of total financial flows to emerging market economies. Due to their short maturities these flows are inherently unsustainable and the 'hot money' argument became popular. It should, however, be noted that the composition of inflows varied considerably among economies. High relative volatility is associated with hot money. That is, hot money is likely to disappear or reverse itself as soon as the perception of investors regarding the emerging market concerned changes or the economy receives an external shock. However, on the basis of statistical time series for ten countries, Claessen, Dooley and Warner (1995) established that this distinction between hot and cold money is spurious. Long-term flows are as volatile as short-term flows. The time it takes for an unexpected shock to a flow to die out is similar across flows. There was also little evidence that information about the composition of flows is useful in forecasting the overall level of flows, and this suggests that the overall capital account is independent of the type of flow. Thus, sustainability is neutral to the temperature of the flow, hot or cold. This evidence is consistent with the view that capital flows are fungible, highly substitutable and endogenous with respect to external shocks.

Management of the exchange rate regime also influences the sustainability of financial flows. A flexible and pragmatic management of the exchange rate regime contributes to sustainability. During the post-1973 period, most countries adopted one kind of floating exchange rate system or another. However, some emerging market economies mis-managed them and allowed their flexible exchange rate regimes to become *de facto* fixed exchange rate systems. When the financial markets perceive such inconsistencies or policy weaknesses, speculative attacks can be expected. The most vulnerable countries to a speculative attack are ones having little exchange rate inflexibility. The Asian emerging market economies fell in this category during 1997–98. They made their currencies vulnerable to speculative runs by inadvertently making their currency regimes inflexible. When the trend became obvious, they took much too long to correct the policy error, and in the process opened their currency markets to speculative runs.

Sustainability of capital flows can also be interrupted by fiscal causes, change in the level of confidence of market participants and banking sector problems. First, if due to fiscal

malfeasance an emerging market country government is not able to finance its own activities, which in turn leads to loss of its ability to roll over foreign debt and to attract new foreign loans, it will be forced into rescheduling or default of its obligations. Second, if the level of confidence of market participants plummets for any reason, they are likely to shift their demand for domestic-currency assets to foreign-currency assets, which in turn would deplete the foreign exchange reserves of the central bank in the context of a pegged exchange rate regime. Third, sustainability of capital inflows can easily be terminated if commercial banks lose the ability to roll over market instruments. This will throw the banks into illiquidity and possibly insolvency. These three types of barriers are logically distinct and can affect sustainability adversely. They can exist in an economic system independently or in combination. It is common for them to exist in combination.

The dynamics of speculative attacks

Emerging markets are fairly well, if not quite well, integrated into the global financial markets. There is a downside to globalised financial markets. Growing involvement of institutional investors has made emerging markets more vulnerable. Since institutional investors are large absorbers of emerging market securities (referred to in Section 2), it has increased the potential intensity and duration of speculative attacks. Large foreign firms, traders and hedge funds are large players in the emerging market securities. These institutional investors monitor for weaknesses in the financial systems of the emerging markets they are involved in. They can take substantial short positions in a weak currency through spot, forward and currency options markets. According to one estimate the total assets of hedge funds, traders and speculative-type mutual funds have grown to well over US$100 billion (F&D 1997). These institutions are known to create large leveraged positions. At times they leverage their capital tenfold. Greater international reserves and more complex intervention strategies are needed to offset their speculative attacks. The emerging markets having inflexible or less flexible exchange rate regimes are most vulnerable to speculative attacks.

An economy whose fundamentals are deteriorating or whose financial sector weaknesses are grave will necessarily inch towards a currency crisis. Institutional investors watching the economy will notice the deterioration or weaknesses. The logic of a predictable currency crisis is that it happens well before the deteriorating fundamentals have reached the point at which the exchange rate would have collapsed in the absence of a speculative attack. Thus the crisis precipitates as soon as a speculative run succeeds. This may give an impression that the currency crisis has been provoked by the speculative attack not justified in its extent by current fundamentals.

Once a currency crisis-like situation develops, ‘herding’ behaviour or the ‘bandwagon effect’ soon aggravates it. There is evidence that foreign exchange markets are inefficient (Krugman 1997) and that they do not make the best use of available information, which leads to herd behaviour.[5] The waves of market participants taking short positions, whatever the initial cause, is magnified through sheer imitation almost into a stampede out of the

currency, causing a sharp depreciation. This is what happened to the Czech koruna, the Thai baht, the Philippine peso, the Malaysian ringgit, the Indonesian rupiah and the Korean won during their 1997–98 crises. The bandwagon effect, is also precipitated by an awareness that other investors have 'special information'. Kehoe and Chari (1996) have argued that such bandwagon effects in markets with private information create a sort of hot money effect that at least sometimes causes foreign exchange markets to overreact to news about national economic prospects. Another reason behind currency markets overreacting is that fact that the investments in crisis-prone countries are managed by agents rather than by principals. A mutual fund or hedge fund manager has far more to lose from staying in a currency that is being described as ripe for a depreciation than she has to gain by staying with it and proving the market assessment wrong. Since traders and money managers are compensated on the basis of comparison with other money managers, they have strong incentives to act alike even if their personal instincts suggest that the judgment of the market is wrong. The trader's or money manager's thought process is as follows, 'It'll be worse to lose money on the won depreciation when others do not than losing the same amount in a general currency rout'.

There is a prevalence of contagion in speculative runs on currencies. Empirical proof of this tendency was presented by Eichengreen, Rose and Wyplosz (1996). Their estimates, based on data from 20 countries spanning three decades, reveal that attacks on foreign currencies raise the probability of an attack on domestic currency by 8 per cent. Contagion in foreign exchange markets essentially uses two channels of international transmission. The first channel is trade links, that is, the speculative runs spill over contagiously to other countries with which the subject country trades. The second channel is macroeconomic similarities, where the speculative runs spread to other countries having similar economic conditions and policies. The effect of a contagion operating through trade was found to be stronger than that of contagion spreading as a result of macroeconomic similarities.

As stated earlier, inflexible or pegged exchange rate regimes always attract speculators. It needs to be clarified that when we say 'speculators' we do not have any negative connotations attached to this group of people. It is not used in a pejorative sense. Besides, in the financial markets any economic agent, be it a large domestic or foreign firm, an investment bank, a hedge fund, a domestic or foreign mutual fund, a clairvoyant individual who keeps a discerning eye on the movements of the financial market and the economy, can turn to speculation at an opportune moment. A speculative attack requires establishment of a net short position in the domestic currency. To attack a currency, say the peso, a speculator takes a short position in the peso. He sells it to a bank through relatively long-dated (at least a month) forward contracts. To balance this short position the bank will immediately take a long position. That is, the bank will sell the peso on the spot market for, say, dollars for the conventional two-day settlement. In this process, the bank has balanced its currency mismatch. So far, this is only one half of the balancing act because it continues to face a maturity mismatch. In order to close this maturity mismatch the bank will transact

a foreign exchange swap. That is, it will deliver dollars for pesos in 2 days and deliver pesos for dollars 30 days forward. This is a standard wholesale transaction in normal periods.

When a speculator takes a short position, the domestic central bank plays the role of a customer in the forward currency market. Or the central bank is the counter party for the speculating entity. It sells the required amount in hard currency (generally the dollar) to the speculator. The central bank's domestic currency receipt from the forward contract becomes a one-month loan to the speculator who is taking a short position. If the central bank does not provide the credit directly, it must come through its money market operations.

From the above mechanics it is clear that if the central bank plans to dissuade speculators, it should raise the cost of short positions. Short-term interest rates are allowed to rise, tightening conditions in financial markets and making it more costly for speculators to obtain a net short position by borrowing domestic currency.

Speculative runs in the 1990s

In the past, speculative currency runs have occurred in periods of high capital mobility and fixed exchange rates. The gold-standard period of the 1920s is well known for such currency attacks. The 1990s are known for a spate of speculative attacks on economies. Several of them were launched on the European economies (France, Italy, Spain and the United Kingdom) during the 1992–93 period, and the Mexican peso came under speculative attack in 1994. The Czech koruna and several Asian currencies came under speculative attacks in 1997–98. Various attacks have been intensively studies by scholars. This research was largely based on the rational expectations premise. Rational expectations justified the speculative attacks on economies having inflexible or fixed exchange rate regimes as normal events, to be expected under a certain set of macroeconomic inconsistencies and/or financial mismanagement. Early researchers (like Cumby and van Wijnbergen 1989) found that interest rates were usually hiked after a speculative run. These researchers also assumed loss of reserves during the pre-speculative run period. Their rationalisation mechanism worked as follows: a successful speculative run leaves a currency depreciated, which at times reflects excessive liquidity in the depreciating currency. The interest rate hike compensates for a depreciated currency. Higher interest rates keep portfolio holders from moving out.

Many countries have found managed exchange rate arrangements a useful means of providing a nominal anchor for domestic price levels or maintaining competitive external positions. Such arrangements call for a macroeconomic policy stance consistent with the exchange rate regime and a financial market structure sufficiently strong and flexible to allow for an effective defense of the exchange rate. Based on the experiences of speculative runs on currencies during the 1990s, one can generalise that both direct attacks and those that represent the contagion effect of an attack on another currency are most likely to target the currencies of countries that have the following characteristics: (a) an overvalued real

exchange rate, (b) a weak financial system, (c) a high fiscal deficit, and (d) an external debt position with a high proportion of short-term maturities.

Although cursed in the popular press, speculators appear to have played a relatively limited role in the currency crises, particularly those that struck the Southeast Asian economies and the Republic of Korea during 1997–98 (IMF 1997b). Speculators are so readily attacked as market manipulators because of the role that George Soros played in the 1992 crisis of the British pound, when it dropped out of the exchange rate mechanism (ERM). Clairvoyantly Soros had seen the strong probability of a sterling devaluation, therefore, he went about discreetly establishing a number of short-term credit lines totaling US$15 billion, so that he could take a short position at the most opportune moment. He helped in the collapse of the exchange rate regime and profited handsomely from it. It was likely that the pound would have dropped out of the ERM in any case with the passage of time, but Soros' attack made it happen in a shorter time-span. Soros' attack on the pound is the only example in the recent period of a market manipulator causing a currency crisis (Krugman 1997). It is difficult to come up with another clear-cut parallel. Most currencies come under speculative runs only after market participants observe tell- tale signals and after it becomes evident that they are vulnerable to such attacks. In general the *modus operandi* is that as soon as market participants judge that the exchange regime is close to a collapse, they begin their operations bringing a collapse forward in time, but not quite causing it.

Perhaps speculators determined the timing of the eruption of crises. The speculators who profited did so primarily by correctly perceiving unsustainable and inconsistent economic policies, financial sector fragilities, and over-valued property and stock markets. Likewise, in some quarters hedge funds were treated as the villain of the piece and blamed for driving Thailand, Malaysia, the Philippines and other Asian economies towards currency crises, although a careful analysis of facts did not reveal any compelling evidence (Lachica 1998). The term 'hedge fund' dates from the early 1950s. Hedge funds are eclectic investment pools, usually having fewer than a hundred high net worth investors, constituted through placements. Hedge funds do have their mystique and are difficult to track because they are mostly private pools of capital managed in the US or the UK but domiciled in tax havens like Bermuda, the Cayman Islands, the Channel Islands and the Isle of Man. By basing themselves in places where regulation is lax, hedge funds escape the standard disclosure and reporting requirements faced by mutual funds. This makes it hard to gauge hedge funds' size and understand their strategies. Being domiciled offshore allows them to capitalise on tax and regulatory advantages. Although they are fairly heterogeneous, it is well known that their operations are highly leveraged. Data on the size of the hedge fund industry are incomplete and fragmentary. According to one estimate there are about 1,200 hedge funds in all, having about US$118 billion under management (*The Economist* 1998b), but this makes them relatively small operators or 'bit players' compared to pension funds, mutual funds, insurance companies and commercial banks. These financial institutions can make US$20 trillion available in profit-seeking capital. That

is, the resources of hedge funds are only 0.5 per cent those of the other private financial institutions. Therefore, they cannot be counted as major players or destabilises of economies in times of crisis.

The types of hedge funds that have drawn the ire of central bankers and politicians in the crisis-stricken Asian economies are the so-called macro funds. Macro funds take large directional (unhedged) positions in national markets based on analyses of macroeconomic and financial conditions. But macro funds are not the only funds playing this game. Many investors engage in similar practices. Multinational banks or firms routinely take positions in these markets to protect their large reserves of capital. Individual investors and their institutional investor counterparts (such as investment banks) buy stocks on margin. Commercial banks use leverage in the sense that in a fractional-reserve banking system their total assets and liabilities are several times their capital. The proprietary trading desks of commercial and investment banks take positions and alter their portfolios in the same manner as hedge funds. A significant number of mutual funds, pension funds, and insurance companies engage in some of these same practices. Thus, what the macro funds do is nothing extraordinary except for their determined pursuit of profits. Local investors who scrambled to protect their foreign currency exposures had more to do with driving Asian currencies down than did macro funds or other foreign investors.

According to an estimate, there are about 60 macro funds, having some US$30 billion under management at the end of 1997 (IMF 1998).[6] They typically lever their capital, on average, by a factor of 4 to 7. Although these numbers are large, they pale in comparison with the capital of other institutional investors such as pension funds, mutual funds, insurance companies, and investment and commercial banks. The capital base of this group of institutions exceeds US$20 trillion dollars and they are increasingly active in international capital markets. Thus, one can conclude that the capital resources in the hands of macro funds, including their ability to lever, are not of a formidable proportion. Other financial institutions command much greater financial resources. However, it is well known that macro funds do identify and target those emerging market economies where macroeconomic variables are far out of line with sustainable values. This implies that the changes in asset prices will be large, whenever they occur, leading to possibilities of high profits.

Macro funds are considered to be risk seekers, in exchange for which they expect considerable returns. Concerns have been expressed that hedge funds, particularly macro funds, have played a decisive role in precipitating market movements during the 1997–98 Asian financial crisis. That is, these funds acted as the ‘lead steer’ when the financial herd began to move. It was also possible that these funds formed a herd of their own and initiated a market movement. They could achieve this by changing their investments in similar ways at similar times. A close examination of the financial crises during the 1990s reveals that this may have happened during the 1992 ERM crises, when hedge funds were the first to sell certain currencies short. However, there is little evidence that hedge funds led during the 1994–95 crises in Latin American or 1997–98 crises in Asia. Available data

indicate that some macro hedge funds had large positions against the Thai baht in mid-1997. At this point, other institutional investors already had short positions against the baht. Hedge funds neither appeared to be dominant players in this market nor did they account for the majority of the short positions. Hedge funds were at the back not the front of the financial herd. Hedge funds did not appear to have taken large short positions in other Asian economies because of two reasons: First, while hedge fund managers foresaw the problems with the Thai fundamentals and took large short positions, they were surprised by the speed with which the contagion spread to other Asian economies. Second, hedge fund managers value liquidity and low transaction costs. They found it easier to put on positions in Thailand than in other Asian financial markets, where controls were more prevalent.[7]

Brown, Goetzmann and Park (1998) statistically examined the role of hedge funds in the 1997–98 Asian crises. The found that hedge funds took positions in Asian currencies in 1997 and the actions of some of them—particularly the large ones—do seem to have been correlated. But they did not find any evidence that the fund managers moved exchange rates. In fact, many of these funds were buying these currencies—that is, taking contrarian positions—rather than selling them. Not only are hedge funds less consequential than their reputation, but they are also less omniscient.

The notion that hedge fund actions are always destabilising is erroneous because they have more freedom than other institutional investors, which in turn allows them to take more contrarian positions which allow them to make financial markets more stable, not less so. Hedge funds do not have internal controls that might force them to sell into a tumbling market. There is evidence that hedge fund purchases helped support the Indonesian rupiah for a while in the last quarter of 1997, when other investors were unloading their rupiah inventories (*The Economist* 1998b*)*.

During the 1997–98 crises, serious price bubbles developed in Asian financial and property markets. It is easy to see how a speculative bubble develops in a financial or any other market. For one reason or the other, global investors come to have a favourable view of the prospects for some tradable assets, be it the yen or red chips, Thai stocks or tulip futures. This leads to a rise in that asset's price. If investors interpret this as a trend, they buy more assets, leading to a further price rise, and so on. The process becomes self-reinforcing. Opposite of a price bubble is a price slump, which is the result of the same kind of dynamics, only working in the opposite direction. What happened to the Asian currencies during 1997–98 was the opposite process. The steep depreciations in their currency values were nothing but overshooting. They cannot be justified by any economic fundamentals.

There are five principal factors responsible for the emergence of crises in the Asian emerging markets. First, exchange rates in all the four Southeast Asian economies were highly inflexible and therefore they were vulnerable. Second, due to their successful economic and trade performances, large external financial inflows occurred in the emerging Asian economies. In Indonesia, Malaysia and the Philippines short-term inflows were

substantial, but were largest in Thailand. These large financial inflows came primarily from European and Japanese banks. Third, associated with these large capital inflows was the massive growth of private sector credit. A good deal of external finance went into the banking system, which was reflected in rising foreign exchange reserves in the Asian emerging market economies. Fourth, movements in exchange rates among the major currencies in recent years has been another significant external factor. Fifth, financial sector weaknesses and other structural weaknesses in these economies contributed to the problem of low-quality (or excessive) investment in insufficiently profitable assets.

A speculative attack results in depletion of international reserves and, thus, a decline of domestic money supply. In the recent speculative runs, reserve losses were sterilised, insulating the money supply against the speculative run (Flood, Garber and Kramer 1996). This insulation is affected by the monetary authorities who expand the domestic component of monetary base to offset the effect of reserve losses on money supply. The monetary authorities have to go to work on this as soon as they see a reasonable possibility of a speculative run. The domestic part of the base is normally expanded by an open market purchase of domestic government securities.

Some of the threatened emerging market economies stood fast during the crises of 1997–98. They let interest rates rise to whatever heights were necessary to persuade speculators that it was not worthwhile to bet against their currencies. Hong Kong and Singapore defended their dollars. Brazil stood by its real. Argentina, as in the 1995 *tequila* crisis, stood by its currency board system and the dollar peg. This well-calculated and steadfast behaviour of the central banks forced the threat of widespread monetary collapse to ebb.

Defending against a speculative run

The knee-jerk reaction of a speculative run on any currency is sterilised intervention by the central banking authority. This takes place in both the foreign exchange markets, that is, spot and forward markets. In the former case it results in an immediate depletion of foreign exchange reserves. This also implies a reduction in the monetary base resulting from the sale of foreign exchange by the central banking authority. Thus the size of the reserves work as the limiting factor, although foreign exchange reserves can be augmented by borrowing from the international markets or multilateral financial institutions. As opposed to this, intervention in the forward market does not result in an immediate reduction in the foreign exchange reserves and the monetary base does not shrink. Therefore, some governments prefer the latter to the former. When the Korean won came under a speculative attack in the months of October and November 1997, the government immediately responded by sterilised intervention in the forward market because it wanted to preserve its foreign exchange reserves.

A speculative attack requires the establishment of a net short position in the domestic currency. Therefore, if speculators are to be dissuaded from making speculative runs, short-

term interest rates should be allowed to rise, tightening conditions in financial markets which in turn makes it more costly for speculators to obtain a net short position by borrowing domestic currency. However, this defensive strategy cannot be sustained for an extended period because high short-term interest rates are detrimental for the rest of the economy. If the economy is slowing down, high interest rates work in a pro-cyclical manner causing a deeper downturn in the economy. To ward off such a situation countries do create a two-tier system. The two-tier system prevents speculators from getting domestic credit but non-speculative, productive capital needs are met at the normal rates of interest.

Market manipulating capability of hedge funds has plagued policymakers for sometime. It bears repeating that hedge funds are not large relative to financial markets as a whole, although they may be large relative to a particular emerging market. To reduce the volatility-creating activities of hedge funds, policymakers can consider margin and collateral requirements for all financial market participants. Such measures would affect

and discourage hedge funds more than other investors because they are heavy users of credit. Governments can also undertake more fundamental reforms to deal with market volatility. Better information about market conditions will discourage herd behaviour in the currency and financial markets. If investors run with the herd, they do so to emulate the actions of other investors, assuming that the other investors know something they do not know themselves. Providing better information would help discourage herd behaviour.

Inflexibly pegged exchange rate regimes raise the risk of financial crises. Markets know that inflexible regimes are fragile in the face of adverse external or domestic shocks. Therefore, market participants are likely to speculate against pegged rates in the face of such shocks. Either the defense of pegged rates proves to be costly in the face of speculation (as in Argentina in 1995) or the market pressures leads to the abandonment of the pegged rate (as in several ERM countries in 1992, or Mexico in 1994 and several Asian economies in 1997). Thus, to keep a crisis at bay central banks should not—or rarely—adopt inflexible pegs (Sachs 1997). Perhaps less obviously self-fulfilling panics are also much easier to handle by floating exchange rate regimes compared with pegged rate regimes. A pegged exchange rate regime can only be justified under special circumstances. For instance, it could be considered appropriate under an optimal currency union with one or more countries. In such a case, a common central bank can act as lender of last resort for the whole union. A second case for justifiable pegging could be an extremely open and diversified economy with an extremely flexible labour market. Such an economy can adjust to external shocks through internal deflation if necessary, rather than depreciation. Also, by virtue of diversification, such an economy may be less likely to be hit by serious external shocks than an economy which is highly concentrated in a few export goods. Hong Kong and Estonia both have currency boards, because they more or less meet the second condition.

The strongest defense against a speculative run on a currency is to have such a macroeconomic environment which is sound, functional, and pragmatic and a currency peg which is realistic and flexible. To attain these objectives the macroeconomic policy must

avoid inconstancies and the currency peg must be supportable. The adverse effects of inflation, large budget deficits or unsustainable exchange rates on the macroeconomy and the financial sector can be compounded by capital inflows. If policy inconsistencies are not avoided, and the economic and currency value scenarios are perceived as weak and inflexible, the currency become a target for one-way bets for speculators.

Most, if not all, emerging market economies have liberalised and deregulated their financial markets in the recent past. Many a crisis has been related to financial market liberalisation, especially the elimination of controls on international financial movements. Cautious, gradual, calculated and prudent liberalisation works as a defensive measure. This is a significant lesson from the crises of the 1990s. Several of these crises distinctively exhibited a boom-bust cycle, that is, a large but ephemeral wave of capital inflows accompanied a pegged exchange rate. When the inflows stabilised, the exchange rate needed to be devalued but was delayed until a serious macroeconomic crisis had developed.

The Asian crises and those before them in Argentina, Mexico, Venezuela, Israel, Sweden and Norway have proved that it is dangerous to liberalise capital restrictions without a number of safety valves. These safety valves control the large and sudden inflows and outflows of capital which have become a common feature of global financial markets. Two entities can potentially work as safety valves: (a) the degree of exchange rate flexibility, and (b) strengthened domestic financial institutions which would be less vulnerable to fluctuations in the value of their assets. It might be pragmatic to have some prudential restrictions on capital inflows as well. For instance, central banks can make commercial banks sterilise a stipulated part of their short-term capital inflows by keeping them in non-interest bearing deposits, or at least low-interest bearing deposits. This measure will defend the emerging market economies from the herd instinct of speculators which drives them to seek safety in numbers.

Gradual liberalisation is another way out. If financial markets are liberalised gradually, as in Chile, domestic financial institutions are not able to take on foreign debt of large dimensions. Their borrowing limits are reached only gradually, which in turn dampens the boom–bust cycle. Also, gradual liberalisation keeps the real exchange rate from appreciating too quickly. Therefore, the subsequent devaluation needed after the stabilisation of the capital inflows is less dramatic. An optimal sequencing of the liberalisation process may have to work through the following stages: free inflow of foreign direct investment, followed in sequence by liberalisation of portfolio equity investment, long-term borrowing by non-financial institutions, short-term borrowings by non-financial institutions and finally short-term borrowings by commercial banks. This sequence, operating gradually will go a long way in eliminating the boom–bust cycle.

An amber signal is warranted here. The foregoing statements must not be seen as a stand against liberalisation of the financial sector. But rapid liberalisation, in the absence of sound macroeconomic policies, adequate regulatory and prudential norms, and supervision and monitoring can create problems in the financial sector. Liberalisation reduces the ability

of institutions to survive poor performance, as rising competition reduces rents to the financial sector. If there is also government intervention, the crisis situation develops earlier. The economy becomes an attractive proposition for speculators.

The financial crises of the 1990s, particularly those in the Asian economies have called into question the ability of the global financial system to manage transnational financial flows of such large dimensions as prevalent at present. The current international financial system was devised in 1944 when transnational capital flows were (a) tiny, (b) limited among the industrial economies and (c) generally longer term. The systemic needs of the present period vary widely from those of the past. This is well recognised in most quarters and there are calls for a new financial architecture. Various proposals were floated at the time of the spring meetings of the International Monetary Fund and the World Bank in the third week of April 1998, when the world's economic rule makers converged on Washington. Although a consensus on the contours of the new financial architecture was far away, a great deal of thought was given to the birth of the new financial architecture. If the new architecture is devised so that whenever a financial crisis breaks out due to short-term fund movements the losses are shared by those who made mistakes, the emerging market economies will benefit. This will ensure that investors in short-term instruments will also be held responsible and, therefore, will share part of the post-crisis cost with the recipient emerging market economy.

Capital controls in the form of quantitative restrictions and taxes are frequently resorted to as defensive measures and some scholars (like Rudigar Dornbusch) support their utility for short periods. However, the experiences of the 1960s and early 1970s reveal that expectations of controls increase the probability and the frequency of speculative runs and balance of payments crises. It was also observed that transitory controls increased the volatility of exchange rates. Thus, controls prove to be counterproductive. A noteworthy characteristic of this period (known as the Bretton Woods period) was the high frequency as well as severity of speculative runs and balance of payments crises both in developing and industrial economies. Of these, the sterling crises of 1964–67, and the dollar and French franc crises of 1967–69 are rather well known. These experiences also vouch for the fact that capital controls create self-fulfilling expectations of currency depreciation.

The experience of the 1990s shows that financial crises are stirred up by and feed on undercapitalised banks. They are more vulnerable to self-fulfilling panics and more prone to excessively risky borrowings. Since most emerging market economies lack effective and efficacious supervising and monitoring institutions, the book value of their capital overstates the amount of share-holder equity. Bad assets are generally not written down expeditiously. Therefore, the regulatory regime for these economies should be stricter than that for the industrial economies. A minimum capital-to-asset ratio of 8 per cent, the BIS[8] norm, may be grossly inadequate for the emerging market economies. Therefore, BIS-plus prudential norms are recommended as a defensive strategy. Having a sound capital base and adopting higher prudential standards will make the banking sector less vulnerable at the time of market panics.

Summing-up

After flagging in the 1980s, private capital flows to emerging market economies were vigorously renewed in the 1990s. During the 1990–96 period, emerging market economies received seven times as much private capital as they received during 1973–81. The slump during the 1980s was caused by a sharp deterioration in the economic performance of several emerging market economies, particularly in Latin America. Access to international financial markets became easier for them due to certain economic and political events. However, the capital inflows caused a good deal of exchange rate instability and several Latin American and Asian economies came under speculative attacks. The composition of the financial flows underwent a considerable transformation during the 1990s. Syndicated bank loans were a dominant instrument during the 1980s, whereas portfolio instruments, particularly bonds, and FDI became the favoured instruments during the 1990s.

Several pull and push factors were responsible for the increase in capital flows to emerging market economies. One characteristic of these flows was that they were self-reinforcing and, therefore, once they were launched they continued to grow in volume. Relaxation of capital controls in emerging market economies and a decline in capital account restrictions facilitated the recent boom in capital flows. The growing roles of institutional investors in the industrial economies and securitisation were two important developments which contributed to an increased flow of finance into portfolio investment, both bonds and equities, in emerging market economies. Recent advances in information technology proved to be a facilitating factor. Improvement in the global macroeconomic environment, particularly in emerging market economies, also worked as a stimulant. However, one cannot take these financial flows for granted. Several factors can have an adverse influence and retard or even reverse these flows to emerging market economies. Downturns in the business cycle in industrial economies, macroeconomic deterioration in emerging market economies, lack of market confidence and poor management of exchange rate regimes can all lead to unsustainability in financial flows.

There is a downside to globalised financial markets. Growing involvement of institutional investors has made emerging markets more vulnerable to speculative runs. Since institutional investors are large absorbers of emerging market securities, the growth of these has increased the potential intensity and duration of speculative runs. These institutional investors monitor weaknesses in the financial systems of the emerging markets they are involved in. They can take substantial short positions in a weak currency through spot, forward and currency options markets. Once a currency crisis-like situation develops, herding behaviour or the bandwagon effect soon exacerbates it. There is evidence that foreign exchange markets are inefficient and that they do not make the best use of available information, leading to a herd mentality. Also, a prevalence of contagion in speculative runs on currencies has been observed. Speculators always find an inflexible or pegged exchange rate regime always attractive. Currencies having such regimes becomes easy targets.

All periods of high capital mobility and fixed exchange rates are associated with speculative runs. Although speculators are frequently blamed for precipitating currency crises, there is little evidence proving them as a prime causal factor. In general, as soon as market participants judge that the exchange rate regime is close to collapse, they begin their operations, bringing a collapse forward in time but not causing it. Sterilised intervention is the commonest defense measure that central banks adopt against a speculative run on the currency. Such an intervention can take place in both foreign exchange markets, spot and forward. To dissuade speculators from establishing shor positions short-term interest rates can be allowed to rise, tightening conditions in financial markets. However, this defensive strategy cannot be sustained for an extended period.

To keep financial crisis at bay central banks should not adopt inflexible currency pegs as they raise the risk of financial crises. The strongest defense against a speculative run, is to have a domestic macroeconomic environment which is sound, functional and pragmatic and a currency peg which is realistic and flexible. To attain these objectives the macroeconomic policy must avoid inconsistencies and the currency peg must be supportable. Cautious, gradual, calculated and prudent liberalisation is another defensive measure that the emerging markets need to take.

The Latin American and Asian financial crises have called into question the ability of the global financial system to manage transnational financial flows of such large dimensions as are prevalent at present. Various proposal are on the anvil for improving the present financial architecture. Capital controls in the form of quantitative restrictions and taxes are frequently resorted to as defensive measures and some scholars support their utility for short periods. However, the experiences of the 1960s and early 1970s show that expectations of controls increase the probability and the frequency of speculative runs and balance of payments crises. The BIS prudential standards are usually not enough for commercial banks in emerging markets. More stringent capital asset ratios should be encouraged to make them less crisis prone.

Notes

[1] In the international finance literature they are also known as the ERM crises of 1992 -93. It needs to be clarified that the ERM crises had little to do with capital flows, although speculators had an active role in these crises.

[2] John Williamson's original definition of the Washington consensus involved ten different aspects of economic policy. One may, however, roughly summarise this consensus, at least as it influenced the beliefs of markets and governments, more simply. Liberalise trade, privatise state-owned enterprises, balance the budget, peg the exchange rate, and one will have laid the foundations of an economic take-off. Find a country that has done these things, and one may confidently expect to realise high returns on investments.

[3] The annual average for the 1983-89 period was US$11.6 billion. We are only considering net private capital flows.

[4] The source of these comparative statistics is IMF 1997a.

[5] One of the best studies of herding behaviour is to be found in Shiller (1989), where he analyzed the herding behaviour of investors during 1987 stock market crash. The only reason consistently given by those selling stocks for their actions was the fact that prices were plummeting.
[6] Barry Eichengreen, in an interview published in the *IMF Survey*, 11 May 1998:155 ff, puts this number at US$30 billion.
[7] Barry Eichengreen, interview in the *IMF Survey*, 11 May 1998:155 ff.
[8] The Bank for International Settlements, Basle, Switzerland

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